THE VALUE AND IMPACT OF VIRTUAL OUTREACH SERVICES: REPORT OF THE VIVOS PROJECT

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Abstract

The aim of the Value and Impact of Virtual Outreach Services (VIVOS) project (2000-2001) was to evaluate existing health information outreach projects and to use the cumulative experience of information professionals at the research sites to inform project management guidelines for the successful implementation and application of future programmes.

Five different projects were recruited initially, with another two added later. Sites were based in Cornwall, S Humber, Salford and Trafford, Leicester, Bury St Edmunds with the Exeter and N Thames sites added later. The services studied were (mainly) networked database services, and the associated training and support operations. Other services investigated included a directory of services, and an Evidence-Based bulletin. There was a strong emphasis on serving users in the community and primary care at most sites. A stratified (random) sample was generated at six sites, using data supplied by the libraries on user names and registration numbers.

One hundred and thirty-seven interviews (mostly face-to-face) were conducted, with additional postal questionnaire surveys. Methods were based primarily on the collection and analysis of qualitative data, although some quantitative data on use of resources complemented the qualitative data analysis. The methodology was discussed with representatives at each site and methods adapted to suit the needs of the site and the research team. The methods were based on those developed in previous research on the value of information services to clinical decision-making and clinical competence and included use of the critical incident technique and vignettes. Qualitative data were analysed using the NUD*IST software package, with SPSS and Excel used for the quantitative data.

The findings indicate that the same basic methodology can be used to assess the effectiveness of services, although questions have to be adapted to suit particular needs and the concerns of particular sites.

Networked database services are valued by the users, though the usage among the vast majority of users is infrequent. The training provided was considered very useful but there is a need for ongoing support, advice, with more advanced training for some. Use of electronic journals is likely to be increasingly popular.

A cost–benefit analysis for one site indicated that the average cost savings are large, although most of this can be attributed to a small but very active group of users. Users find it difficult to estimate the time spent searching, retrieving and reading documents.

Barriers to use are the familiar constraints of time, coupled often with a less than ideal location of the IT equipment in the department or unit. Partly for those reasons, services which offer home-based access to information services are valued. There are some indications that (for some users) the Internet is becoming part of their ‘personal collection’ of information resources. At one site users clearly favour the provision of a one-page digest of the evidence, slanted towards local needs, as a way of keeping up to date with the evidence of most relevance to them.

Attitudes towards patient use of the Internet seems to be changing from fear of the over-informed and ‘bolshie’ patient to an acceptance of a changing role for the health professional as a ‘mediator’, explaining and sharing information from the Internet with the patient. Benefits appeared to outweigh the drawbacks.
The qualitative approach proved invaluable in giving an insight into the changing attitudes, the effectiveness of the information systems innovations and some of the barriers to use, but it is time-consuming to obtain the interviews.

Critical success factors for these projects emphasised the importance of an overarching goal, flexibility of approach, ongoing support for users and an acknowledgement of the lifelong learning agenda for both the library staff and the users.

Acknowledgements
The project team is indebted to Re:source for funding the VIVOS project and for the support provided by Re:source staff, in particular Barbara Buckley and Simon Matty. Many individuals gave up their time to assist in this project and we wish to thank the health professionals and managers in the sites for their help in the survey work, particularly those who agreed to be interviewed. We would also like to thank Allan Wailoo from ScHARR for the cost–benefit report for the Leicester site and Heather Kirby, Liz Moss, Christine Keen and Franca Mongiardi for their help with investigating public access to health information. The DILS staff on VIVOS wish to acknowledge the contribution made by the evaluation site staff in the libraries. Their enthusiasm in the work made the project a worthwhile experience for us all.

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Abbreviations

AMED: Allied and Complementary Medicine Database
AS: Administrative Staff
ASSIA: Social Sciences database
BMA: British Medical Association
BMJ: British Medical Journal
BNI: British Nursing Index
BT: British Telecommunications
CBM: Community-Based-Management
CD-ROM: Compact Disc Read Only Memory
CHM: Community Health Management
CINAHL: Cumulative Index to Nursing and Allied Health Literature
CIT: Critical Incident Technique
CN: Community Nurse
Corn: Cornwall
CP: Clinical Practitioner
CPE: Continuing Professional Education
CS: Community Staff
DN: District Nurse
EBH: Evidence-Based Health care
EBM: Evidence-Based-Medicine
FUTURES: Full-Text Using Regional Electronic Resources
GP: General Practitioner
HBM: Hospital-Based Management
HMIC: Health Management Information Consortium
HRR: Health-Related Researcher
HTML: Hyper Text Mark Up Language
HV: Health Visitor
ISDN: Integrated Services Digital Network
INCH: Information Network for Croydon Health
IT: Information Technology
JANET: Joint Academic Network
Leics: Leicester
M: Midwife
MeSH: Medical Subject Headings
MIDIRS: Midwives Information and Resource Service
N: Nurse
NeLH: National Electronic Library for Health
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>NHS</td>
<td>National Health Service</td>
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<tr>
<td>NICE</td>
<td>National Institute for Clinical Excellence</td>
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<tr>
<td>NISS</td>
<td>National Information Service and System</td>
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<tr>
<td>NM</td>
<td>Nursing Management</td>
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<tr>
<td>OMNI</td>
<td>Gateway to online health information resources</td>
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<tr>
<td>OT</td>
<td>Occupational Therapy</td>
</tr>
<tr>
<td>PAM</td>
<td>Professions Allied to Medicine</td>
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<tr>
<td>PC</td>
<td>Personal Computer</td>
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<tr>
<td>PCC</td>
<td>Primary Care Clinician</td>
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<td>PCG</td>
<td>Primary Care Group</td>
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<td>PCH</td>
<td>Primary Care Health</td>
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<tr>
<td>PCT</td>
<td>Primary Care Trust</td>
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<tr>
<td>PDF</td>
<td>Portable Document Format</td>
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<tr>
<td>PHCT</td>
<td>Primary Health Care Team</td>
</tr>
<tr>
<td>PRHO</td>
<td>Pre-Registration House Officer</td>
</tr>
<tr>
<td>PsychINFO</td>
<td>Psychology database</td>
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<tr>
<td>PT</td>
<td>Physical Therapy</td>
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<tr>
<td>Q</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>RCN</td>
<td>Royal College of Nursing</td>
</tr>
<tr>
<td>RCT</td>
<td>Randomised Control Trial</td>
</tr>
<tr>
<td>RM</td>
<td>Research Management</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>Salford and Trafford</td>
</tr>
<tr>
<td>ScHARR</td>
<td>School of Health and Related Research (Sheffield)</td>
</tr>
<tr>
<td>SCP</td>
<td>Senior Clinical Practitioner</td>
</tr>
<tr>
<td>S/D</td>
<td>Selected/Directed</td>
</tr>
<tr>
<td>SH</td>
<td>South Humber</td>
</tr>
<tr>
<td>SHO</td>
<td>Senior House Officer</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
</tr>
<tr>
<td>TGC</td>
<td>Training-Grade Clinician</td>
</tr>
<tr>
<td>TP</td>
<td>Teaching Post</td>
</tr>
<tr>
<td>VIVOS</td>
<td>Value and Impact of Virtual Outreach Services</td>
</tr>
<tr>
<td>VT</td>
<td>Vocational Trainee</td>
</tr>
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<td>WS</td>
<td>West Suffolk</td>
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PART ONE: Report of the VIVOS project
1.0 Introduction

The VIVOS (Value and Impact of Virtual Outreach Services) project was concerned with methodologies for determining the effectiveness of the virtual outreach services, which will underpin the National electronic Library for Health services for health professionals. The project was funded by Re:source (and formerly the Library and Information Commission) for a 12-month period (1 February 2000 - 31 January 2001). The project was a development of previous research in the field (i.e. the Value, EVINCE and GIVTS projects). Determining the effectiveness of new information service provision is always a difficult venture, particularly when such services support, but do not impinge on patient care in the way that patient administration systems do. The project therefore used a variety of approaches to analysis, but primarily a qualitative approach to determining the benefits to the health professionals using the service and the way the use of such services might be encouraged.

1.1 Aims and objectives of VIVOS

1.1.1 Aims of VIVOS

The aim of the VIVOS project was to develop and evaluate methodologies, i.e. sets of methods, for determining the value and impact of 'virtual outreach' information services, in the health sector. The findings were intended to inform guidelines for project management of these services, most of which are in the early stages of development at present. At the time the project started, the National electronic Library for Health, a virtual library for both health professionals and the public, was in embryonic form, but towards the end of the project, in November 2000, a pilot version of the Library (http://www.nhs.uk/nels) was officially launched (Whitfield, 2000). The project was funded by Re:source for a period of 12 months (1 February 2000 – 31 January 2001). Five existing outreach services were involved in the project from the outset (in Cornwall, Salford and Trafford, Lincolnshire, West Suffolk and Leicester). Later, data were collected or provided from an additional two sites (North Thames and Exeter). The sites varied, and the evaluation methods used were tailored partly to the needs of the VIVOS project, and partly to reflect site requirements agreed with the library service managers at the site.

1.1.2 Objectives

The objectives were to:

- extend and refine existing value and impact methodologies for health information use
- assess the usefulness of multiple methods of evaluation (quantitative and qualitative), in both determining progress, and delineating remaining barriers to the development of virtual library and information services
- evaluate the effectiveness of various training approaches for virtual outreach health information services for community staff
- develop guidelines on the methods, and sets of methods, most suited to particular research questions
- develop research and evaluation skills among information practitioners by active involvement in the project.
1.1.3 Site selection

The research team was based at Aberystwyth and collaborated with information professionals from Cornwall, Suffolk, Leicester, South Humber, and Salford and Trafford, and later from Exeter and North Thames. The five original sites selected for participation in the VIVOS study were chosen because their outreach services were already established. This had the advantage that a certain amount of baseline data was already available but also gave the opportunity to investigate how to maintain the momentum of projects beyond the initial enthusiasm. The sites were also selected because they provided a variety of project types and environments. Two additional sites (Exeter, North Thames) were included once the project was underway. A specific aspect of each project was identified for evaluation by VIVOS:

- **Salford and Trafford**: A three-day training programme, for the e-STABLISH project.
- **Cornwall**: A database training programme run for community staff by Cornwall Library Services.
- **Leicester**: A feature of the Trent Futures project giving remote access to NISS Biomed databases through the issue of Athens passwords.
- **Bury St Edmunds**: The Pink Book developed by library staff at the West Suffolk Hospitals' NHS Trust, originally as a directory of information for primary care clinicians.
- **South Humber**: The bulletin 'Evidence matters!', a regular digest sent out to local primary-care and community staff alerting them to topical issues in clinical effectiveness and evidence-based practice. This investigation also looked at access to the CINAHL database and the information-related problems faced by nursing staff.
- **Exeter**: The Website set up by Exeter Medical Library.
- **North Thames**: Additional data analysis for an existing database access project.

1.1.4 Definition of outreach services

The VIVOS definition of ‘Virtual Outreach Services’ was fairly broad and covered any services that enable healthcare professionals to access pertinent information without physically coming into the library premises. In most cases this equates to electronic information sources but at one of the VIVOS research sites it involves the dissemination of a hardcopy digest of topical Evidence-Based issues.

1.1.5 Health information for the public

One additional objective was specifically requested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via the People's Network. This proved challenging since the People's Network (http://www.peoplesnetwork.gov.uk) is not yet sufficiently established for an evaluation of its role in supplying health information to the public. The project team therefore decided to concentrate on locating schemes that are currently operating and on investigating healthcare professionals’ attitudes to provision of health information on the Internet. The researchers also looked at links established between the librarian at one of the VIVOS research sites and local public-library staff and observed training sessions on using Evidence-Based sources.
1.2 Value and impact methodologies

1.2.1 Previous value and impact studies

The previous projects which informed the design of the VIVOS project comprised (largely) three projects:

1) the Value project concerned with the impact of information provided by library and information services on clinical decision making (by doctors) (Urquhart and Hepworth, 1995a, b, c)

2) the EVINCE (Establishing the Value of Information to Nursing Continuing Education) project (Davies et al. 1997, Urquhart and Davies, 1997)

3) the GIVTS (Getting Information to Vocational Trainees) project (Urquhart et al. 1999a, b)

The EVINCE project developed the Value methodology, which was based on critical incident techniques, for use with qualified nurses, midwives and health visitors. One addition to the methodology was the use of vignettes (Urquhart, 1999). GIVTS was designed in response to the identified gap in services for GPs and SHOs in the Value project, and was aimed at the testing of a methodology for assessing the effectiveness of services targeted at vocational trainees (trainee GPs).

1.2.2 Contemporaneous studies

Work in the USA, supported by the Council on Library Resources, developed a taxonomy for studying the ‘value in use’ in both academic settings (Saracevic and Kantor, 1997) and the corporate environment (Saracevic and Kantor, 1998). Both studies were based on a critical incident study and based on the premise that value is multi-dimensional. These studies developed a Reasons-Interaction-Results (RIR) model of information service use. This approach is similar to the critical incident methods used in the three previous projects (Value, EVINCE, GIVTS) and provided support for the approach developed in VIVOS.

1.3 Strategic quality management issues

A distinction needs to be drawn between the value placed by users on particular items of information and the value of the information service which provided that information, although in practice the two are often blurred, from the viewpoint of the user and also the service provider. It is arguably worth assessing the information behaviour of the users before attempting to tease out the service design factors which affect the decision to use, or not to use services and the attitudes surrounding service use. An audit cycle of needs assessment, service delivery, outcomes, evaluation implies that evaluation should inform needs assessment. This link between the ‘checking and monitoring’ and the planning of services is important and a part of the quality control cycle of plan, do, check, act (PDCA). The quality control often reflects smaller, fine-tuning changes whereas the problem is often more of changes of strategic direction. A model (Johannsen, 1996) which links quality control (concerned with standardisation of improvements) through total quality management to strategic planning emphasises the importance of examining quality management through ‘breakthrough’ (Juran’s conceptual framework) which encourages the occurrence of good things as well as the control cycle. Evaluation may therefore be at two levels of checking: at strategic levels to examine ‘problems’ or at the quality control level of checking that small desired improvements are standardised. Examining the value of information in terms of the information behaviour of the users is more likely to uncover and consider the strategic changes that might be required. Examining the service design
factors is likely to be concerned with quality control, rather than strategic quality management.

1.3.1 Accreditation and service standards

The accreditation programme (LinC Health Panel, 1998) for library and information services in the health sector has several aims, one of which is to improve the standards of service (in terms of resourcing) throughout the UK, but it appears to have taken a stance that is more concerned with quality control, initially at least. The checklist does start off with a section on Strategy, which does call for evidence of user involvement in the process of developing the mission statement, or strategic plan, and there is separate sub-section which calls for a quality assurance system, with a possibility of an ‘in-house quality improvement’ programme, but the emphasis in the section is more on the control mechanisms, rather than feeding back into strategic change. The VIVOS project was concerned with existing projects which were developing new services and while the effects on service delivery were considered, the emphasis was more on the factors behind customer satisfaction, the actual use made of information provided and the factors which affected users’ decisions to use the networked services.

1.4 Estimating the value of information

It is extremely difficult (if not impossible) to place an objective value on an item of ‘information’, given that there may be a time lag between acquisition and use, the format of the information may affect the value attached by users, the prior knowledge of the users will affect the value attached to the information, and the presumed ‘power’ consolidated through acquiring information (Carter, 1985). Information services often have to content themselves with subjective estimates by users of the value, or expected value of the information provided (Repo, 1986). A review (Urquhart and Hepworth, 1996) of the approaches to estimating the value of information to clinical decision making noted that some of the differences in findings among studies which used a similar research design may be attributed to the way the research was executed, in particular the process of engagement between the researcher and the study population. Some triangulation of methods would seem desirable, to try to avoid the problems of seeing only what is desired from the evaluation, and to be mindful of the assumptions being made.

1.5 Evaluation perspectives

The approach taken by VIVOS was very much a ‘bottom-up’ approach to evaluation of these projects. They were small-scale projects in comparison to the investment required in large hospital information systems, but nevertheless the shift to providing information services at the desktop is a profound change and some of the evaluation frameworks used for large scale IT investment projects are pertinent. A focus on the behaviour of individual users may ignore wider organisational issues which could explain some of the patterns observed. Lamb and Kling (2000) suggest that inter-organisational relationships and institutional influences played a bigger role than individual choice in determining the pattern of use of online information, and that must be a consideration, beyond the usual problems of physical access to the hardware which prevent many networked project fulfilling their aims and objectives. Often the location of the necessary equipment within the department is more a reflection of the institutional influences than actual cost considerations.

1.5.1 Efficiency and effectiveness of information systems

Information systems projects can be loosely divided into ‘efficiency’ projects and ‘effectiveness’ projects (Fitzgerald, 1998), and the virtual outreach services are placed in both categories. Evaluation could consider the benefits in terms of reduced time costs for practitioners to access information (less time devoted to travelling to the library). One of
the project sites specifically wanted a cost–benefit evaluation of this type, and this was one of the methods used at that site, under the guidance of a health economist. Effectiveness measures really concern the changes to organisational effectiveness. This could proceed in two stages, the first dealing with the fit between benefits and concept (and which could largely be the efficiency gains or losses). The second stage needs to consider the effect on the environment, behaviour change, and in the case of the health service the direction of most service changes should be in policy terms the improvement of the quality of care. Over the course of the project many relevant policy documents were issued by central government (in all home countries of the UK) and the organisational background needs to be considered before outlining the methods and findings of the project.

1.6 Quality of service and clinical governance

The emphasis in government policy papers such as the White Paper The new NHS (Department of Health (England), 1997) and later guidance (Department of Health (England), 1998) is on improvement of the quality of care through coherent quality management, encompassing promulgation of clear standards of service, and monitoring of those standards through a variety of mechanisms, but notably the Commission for Health Improvement. Those delivering the service require a structure of professional self-regulation (codes of professional conduct), clinical governance (NHS Executive, 1999) which implies that chief executives are ultimately responsible for the quality of service provided in their organisation (a device noted by Mintzberg, 1979, p.279) over twenty years ago as an effective of controlling an organisation from the outside: make the chief decision maker responsible for the organisation’s action and impose clearly defined standards on the organisation). Another important element of the quality framework at operational level is the establishment of a lifelong learning culture. This should ensure that appropriate action is taken to ensure that staff acquire appropriate skills and knowledge to enhance the quality of care, as well as identifying poor performance and taking steps to remedy poor quality care.

1.6.1 Setting up the information infrastructure for a quality service

More recently, the NHS Plan (Department of Health (England), 2000) has set out specific objectives for service improvements (along with a promised financing package to provide the staff and infrastructure to deliver such improvements). As far as the supporting IT infrastructure is concerned, the timescale allowed to delivery the targets may be too ambitious (de Lusignan et al., 2000). Another difficult target may be the ‘care trusts’, the final destination of primary care groups, and designed to encompass health and social care. The revised information strategy for health (England) Building the Information Core (NHS Executive, 2001) examines (in Section 4 of the document) the fit between information and IT. Information services listed include NHS Direct Online, NHS Direct information points (touch screen information kiosks), nhs.uk (initial organisational directory), NeLH, and NHS Digital. Delivery channels include the call centres, online services, and telecare. Section 5 of the document considers the education and training required for health professionals, and signals the roll-out of the European Computer Driving Licence implementation to improve the basic computer skills of all NHS staff. A multi-professional standard for clinical education (Learning to Manage Health Information) (Severs and Pearson, 1999) stresses the importance of integrating health informatics into undergraduate, and postgraduate curricula, and the Ways of Working with Information programme (more details on the NHSSA Website http://www.nhsia.nhs.uk) is setting up the appropriate infrastructure to implement some of the recommendations.

For those delivering primary or community care there are advantages in working towards seamless care as that is what the patient or client needs, and the Local Implementation Strategies have to demonstrate co-operative working among a variety of health and social care agencies. There are difficulties, too. The provision of the support services whether in the IT hardware or the information systems and services may not be adequate.
Secondly, the insistence on standards with an apparently inquisitorial regime of inspection, league tables, and ‘traffic lights’ may encourage the blame culture at the expense of proper organisational learning (Artyris and Schon, 1996), which requires a more open and ‘forgiving’ culture, rather than one preoccupied with blame allocation.

1.7 National electronic Library for Health

The aims of the NeLH stated in the information strategy (NHS Executive, 1998) concerned improving access to clinical and other Evidence Based reference material, with local intranets being responsible for distributing their own agreed guidance and protocols. The library would have four ‘floors’: 1) for public and patient information; 2) knowledge skills programmes such as the critical appraisal skills programmes; 3) knowledge databases such as MEDLINE and Cochrane and 4) National Institute for Clinical Excellence guidelines and similar topics. Public access to NeLH was also to be made possible through the Internet, with NHS staff having access through NHSnet. Policy changes since 1998 include the development of virtual branch libraries for particular specialty areas, while the first floor of the virtual four ‘floor’ library devoted to patient and public information has effectively been hived off into NHS Direct Online. The NeLH has chosen to concentrate on Evidence-Based sources such as the Cochrane Library. The NeLH will not, at present, offer databases such as MEDLINE, CINAHL. These databases will be available to health professionals through their local library services, and most Regions are now involved in networking agreements with database providers. MEDLINE is unusual in this respect as it is already available free (in various formats) over the Internet.

1.7.1 NHS Direct

NHS Direct is an telephone advice line, using particular protocols to guide those answering the calls to provide the correct level of advice and information. Planning of NHS Direct follows studies such as that by the Henley Centre for BT Health (1997). That and other studies by the Henley Centre confirmed that customer satisfaction was governed by the three C’s:

- convenience (answered quickly, get straight through to someone who can help, informative queuing system, minimisation of transfers);
- cordiality (people answering the phone need to be helpful, professional, knowledgeable);
- consistency (do what they said they would – every time, same level of service next time, reliable and predictable).

Evaluation studies (Snell 1999, ScHARR 2000) are in progress, but show that this service is well used (three and a half million calls) and well liked. It has provided increased access to advice, information and reassurance but has not increased demand on other services. The unit is within the same framework as other NHS units. Each centre has a Lead Nurse and Medical Director who are responsible for clinical governance. Some integration with other services (such as out-of-hours services is anticipated).

1.8 Information needs of patients

1.8.1 Effect of the Internet

The potential impact of the Internet on the doctor-patient relationship is one that could concern a profession which has derived, consciously or unconsciously, some professional power from having clinical knowledge that was not easily available to the patient. The Value project, circa 1994, found that only 6% of the critical incidents of information
seeking by medical staff involved information for patient education (Urquhart and Hepworth, 1995a, p.54) Increasing consumerism and the rapid increase in Internet usage has probably changed that, though perhaps more slowly than often suggested. A 1998 survey (Nwosu and Cox, 2000) of 300 UK obstetricians and gynaecologists found that most thought that few of their own patients used the Internet, and nearly one third of the respondents did not themselves use the Internet more than once a month. The concern is often one of the quality of information available to patients, a valid concern but one which echoes some of the concerns of information professionals about being the true and proper guardians of quality information. On the other hand, there is evidence, old (e.g. Hayward, 1975) and more recent (e.g. Morris et al.1989, Osman et al. 1994) that well-informed patients have better outcomes than those who are not so well-informed.

1.8.2 Patient –professional interaction

A report (Jones et al., 2000) to the NHS Information Authority on patient-led learning used a transaction model of patient–professional interaction in the consultation, and this model includes the tools/means (i.e. provision of information), the rules governing the consultation (i.e. professional judgement on time available and the complexity of the information discusses), the division of labour, and the community (i.e. the professional practices of different disciplines, the non-professionals’ different educational, linguistic and racial characteristics). This framework allows for the shared learning which may occur and the situation in which the patient has areas of knowledge and experience which has to be learnt by the professional – and vice versa.

1.8.3 Developments in consumer health informatics

The provision of health information to consumers does not just involve the Internet and there has been considerable progress in the development of various means of public access systems (Jones et al., 2000), (e.g. touchscreen kiosks and library or healthpoint shops). Health libraries in the UK have not had the opportunity (or motivation) to develop services for the public in the same way as in North America (Hollander, 2000), and it seems that services such as NHS Direct, the telephone-based advice service and NHS Direct Online have overtaken any services that might be provided by the traditional hospital-based health libraries in the UK. In some respects this is a disadvantage as this pigeonholes the services provided by different providers. Consumer health information is seen to come in certain packets from certain providers, information for the professionals comes from a different source, under a different badge. This division of responsibilities meant that it was difficult to meet one of the objectives of the project as both sides – the People’s Network and the health libraries are only just beginning negotiations, often prompted through the aims expressed in the Local Implementation Strategies established under the aegis of Information for Health.

1.9 Navigation of this report

The methodology, and the detailed site evaluations mean that this report is structured in a different way from many other research reports. The report is divided into two parts:

- Part One providing the introduction and the overview of the methodology (Section 2), as well as an overview of the findings, discussion and conclusions. Section 3 considers the project management issues, Section 4 looks at the provision of health information to the public, the appropriateness of the qualitative approach taken to the study is discussed in Section 5 with discussion of the findings in Section 6 and the conclusion in Section 7.

- Part Two contains the detailed site reports.
2.0 Methodology

This Section provides an overview of the methodology used in the VIVOS project, and more details of the approach used at each site are provided in the site reports in Part Two of the report. Section 2.1 considers the general approach to design of the survey instruments, and Section 2.2 details the sampling approach used at each site.

2.1 Approach used

As indicated earlier (Section 1.2) the methods used in VIVOS were based on those developed for earlier research projects. The emphasis in VIVOS was on the collection of qualitative data, and ninety percent of the interviews were conducted face-to-face. This was the preferred method but in some cases it was necessary to conduct the interview by telephone when it proved impossible to arrange a convenient time to meet or when interviewees were forced to cancel the original slot.

The methods used in the surveys included:

- critical incident technique
- vignettes.

The aim in most sites was to target the less frequent, as well as the frequent user, of the database service and explore the ‘information use environment’, in order to identify the factors which might affect use of networked databases.

As mentioned earlier (Section 1.1.5) one objective of the project was concerned with public provision of health information. This objective was tackled in different ways at each site. Findings are synthesised and discussed in Section 6.

2.2 Sampling

The guiding principle was to use a stratified, randomised sample to avoid bias. The same job types were used at all sites, though this does not necessarily correlate to the initial job categories in the early stages of selection since concepts were refined and early categories were often based on systems within institutions. Details for each site are given in the following sections.

2.2.1 Leicester sample

A randomised and stratified sample was selected from NHS users who had registered between 1999 and 6 April 2000 (excluding any whose contract would have finished before the end of June 2000 when interviewing would be taking place).

The stratification was carried out according to job categories as given on the registration form itself and in the Trust's Annual Report, dividing the sample into:

- Medical and dental (included consultants/dentists/SHOs/Specialist registrars/PRHOs and other unspecified doctors)
- Nursing and midwifery
- PAMS (including pharmacists/theatre staff/technicians)
- Other trust staff (including admin/managers/ancilliary staff).
After discussion with librarian it was decided to make the sample representative of the numbers of each group subscribing to the service. The final 200 names were randomly selected to give a spread of:

- Medicine/dentistry: 32.25%
- Nurses/midwives: 36.31%
- PAMs: 24.14%
- Others: 7.3%

i.e.: 65 medical staff, 73 nurses, 49 PAMs and 15 other staff. (202 names in all)

Since the doctors/dentists section covered various levels the process was repeated within this section so that the final group contained 1 PRHO, 12 consultants, 22 specialist registrars, 23 SHOs, 1 community dentist and 7 unspecified doctors.

**Interviews**

It was decided that a sample of 80 potential interviewees should be contacted from the original sample of 202 names (6 other/20 PAMS/26 medicine and dentistry (5 consultants/9SPR/9SHO/1dentist/2 unknown)/28 nurses).

Of these nine had either left or would not agree to be interviewed. Of the remaining 71 it proved possible to arrange interviews with 35. Attempts to arrange interviews were abandoned after several (at least two, often more) unfruitful telephone calls. The 35 interviewees were:

- Senior clinical practitioner: 4
- Radiologist: 1
- Training grade clinician: 2
- Nurse: 11
- Scientific/technical: 2
- Physiotherapist: 5
- Speech therapist: 1
- Occupational therapist: 4
- Hospital-based management: 1
- Research manager: 1
- Midwife: 2
- Sonographer: 1

i.e. 9 clinical practitioners
13 nursing staff
11 PAMs
2 management staff

The interviews were carried out in two batches: mid-June 2000 and early August 2000.
Questionnaires

After a piloting process, 175 postal questionnaires were sent out in July 2000. Non-responders were chased in September. The questionnaires were sent to 80 of the original NHS sample who had not been contacted for interview plus 95 members of university staff stratified by job type (research staff/clinical research/academic) selected randomly from staff lists supplied by the University.

69 completed questionnaires were returned, giving an overall response rate of 39.4 per cent.

An attempt was made to survey 100 students by email questionnaire. Despite chasing up, the response rate was too poor to permit analysis (4%).

2.2.2 Salford and Trafford sample

Interviews

20 potential interviewees were selected at random (though stratified to include a spread of job roles and to include all participating practices except for one where trainees had been unable to attend the full 3-day course). At the request of the librarians, the selection also included four people who did not attend the training. Seventeen people agreed to be interviewed and the interviews were carried out in mid-June 2000.

Primary care clinician: 2
Community-based management: 3
District nurse: 4
Administrator: 3
Health visitor: 2
Community nurse: 3

i.e. 9 nursing staff
     3 administration staff
     2 clinical practitioners
     3 management

Questionnaires

Questionnaires were sent out to the remainder of the people who had attended the training course including those from the original interview sample that it had been impossible to contact. Forty-three questionnaires were sent out in July 2000 and (following a chasing-up letter to non-respondents in September) 19 replies were received. 2 people had moved from their posts.

Response rate

The overall response rate was therefore 46.3%.

2.2.3 Cornwall sample

Interviews

The process of fixing up the interviews was quite complex here. Initially 20 names were selected across four of the five main hospital sites: Helston, Stratton, Newquay and
Falmouth. Five names were selected from details of the people who had attended training courses, stratified to include different job types as far as possible but this information was not always available. At the suggestion of the librarians (because of the schedule for the training programme and other logistical issues) it was decided to leave Liskeard and the GP practices until a second round of interviews in September).

Once the initial random sample had been made, library staff arranged the interviews, selecting replacements as necessary based as much as possible on job type of people they were unable to contact from original sample. The first round of interviews took place in late July at Helston, Newquay, Falmouth. The Stratton interviews were postponed until the second round which also included Liskeard and three primary care practices/community clinics.

In all 26 interviews were conducted.

Nurse: 5
Community midwife: 2
Occupational therapist: 3
Physiotherapist: 4
Administrator: 3
District nurse: 2
Primary care clinician: 3
Community nurse: 2
Health visitor: 1
Community psychologist: 1

i.e. 12 nursing staff
   7 PAMs
   3 administration staff
   4 clinical practitioners

There were no questionnaire surveys at this site.

2.2.4 Bury St Edmunds sample

Interviews

Thirty-seven interviews were conducted in all. Twenty-three were randomly selected in the initial sample or contacted at random by researchers once they were on-site. The librarians were again involved in arranging the interviews and were asked to replace people they had difficulty contacting with others from similar job roles. Fourteen interviewees were either suggested by the librarians or were selected because of their job-roles (e.g. involvement in community health management) and can be classed as ‘expert’ interviewees. The interviews were conducted in August 2000.

Random sample:

Senior clinical practitioner: 1
Community nurse: 3
Primary care clinician: 1
Teaching post: 2
Nurse: 5
Speech therapist: 1
Community dietician: 1
Training grade clinician: 3
Health visitor: 2
Hospital-based social worker: 1
Administrator: 1
Nursery nurse: 1
District nurse: 1

'Expert' interviewees:
Senior clinical practitioner: 7
Nursing management: 1
Hospital-based pharmacist: 1
Primary care clinician: 2
Radiographer: 1
Community Health Management: 1
Hospital-based management: 1

In all therefore:
16 clinical practitioners
12 nursing staff
4 PAMs
2 teaching staff
2 management staff
1 administration staff

Questionnaires
Following a piloting process. One hundred questionnaires were sent out in November 2000 to a stratified sample of hospital and community staff (stratified to include 40 community staff, 26 hospital-based medical staff and 34 primary care practitioners). 35 replies were received, giving a 35 per cent response rate.

2.2.5 South Humber sample

Interviews
In South Humber, the interviewees were split into two sections to be asked about different topics: either their use of the bulletin !Evidence Matters! or their use of the CINAHL
database. The samples were drawn from lists of registered users of the services and names were selected at random whilst being stratified to cover the range of job roles present in the list.

Twenty-two interviews were conducted in all, 15 for !Evidence Matters! and seven for CINAHL.

!Evidence Matters!

Community-based management: 9
Health visitor: 2
Community nurse: 1
Primary care clinician: 1
Community pharmacist: 2

CINAHL

Health-related research officer: 2
Occupational therapist: 1
Health visitor: 1
District nurse: 1
Community nurse: 1
Senior clinical practitioner: 1

In all therefore:

9 management staff
6 nursing staff
4 clinical practitioners
2 health-related researchers
1 PAM

There were no questionnaires at this site.

2.2.6 Exeter sample

Questionnaires

In Exeter 200 questionnaires were sent out. Eighty-seven replies were received, giving a response rate of 43 per cent. The sample was randomly selected from a list of User numbers supplied by the librarian. It was stratified to include job categories of: doctor, nurse, PAM and Other identified from the lists supplied by the librarian. The representation of job types in the questionnaire sample reflects the representation of each type in the registration lists (88 doctors/30 nurses/26 PAMs/56 others)

There were no interviews at this site.
2.2.7 North Thames sample

A survey of registered users of Project Access was carried out in November 1998. A total of 121 questionnaires were returned, equating to 20 per cent of registered users.

In all, 137 interviews were conducted across the five original VIVOS sites. Details of the numbers of interviewees by individual job role are given in the Table below.

<table>
<thead>
<tr>
<th>Job Role of Interviewee</th>
<th>Number Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration staff (Practice Receptionists/Resource Officers/Clerical Officers/Secretaries/Information Officers/Ward Clerks/Team Clerks)</td>
<td>7</td>
</tr>
<tr>
<td>Clinical Practitioner (Speech Therapists/Pharmacists/Psychologists/Radiologists)</td>
<td>9</td>
</tr>
<tr>
<td>Community-Based Management (Practice Managers/PCG or PCT Managers)</td>
<td>12</td>
</tr>
<tr>
<td>Community-Health Management (Community Health Council representative)</td>
<td>1</td>
</tr>
<tr>
<td>Community Nurse (Practice Nurses)</td>
<td>10</td>
</tr>
<tr>
<td>District Nurse</td>
<td>8</td>
</tr>
<tr>
<td>Health-Related Research Officer</td>
<td>2</td>
</tr>
<tr>
<td>Health Visitor</td>
<td>8</td>
</tr>
<tr>
<td>Hospital-Based Management</td>
<td>2</td>
</tr>
<tr>
<td>Midwife</td>
<td>4</td>
</tr>
<tr>
<td>Nurse</td>
<td>21</td>
</tr>
<tr>
<td>Nursing Management</td>
<td>1</td>
</tr>
<tr>
<td>PAM (Physiotherapists/Occupational Therapists/Nursery Nurses/Hospital-Based Social Workers/Dietitians/Scientific and Technical Staff/Sonographers/Radiographers</td>
<td>22</td>
</tr>
<tr>
<td>Primary Care Clinician (General Practitioners)</td>
<td>9</td>
</tr>
<tr>
<td>Research Management</td>
<td>1</td>
</tr>
<tr>
<td>Senior Clinical Practitioner (Consultants/Dentists)</td>
<td>13</td>
</tr>
<tr>
<td>Teaching Post</td>
<td>2</td>
</tr>
<tr>
<td>Training-Grade Clinician (SHOs/SPRs/VTs/PRHOs)</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Interviews</strong></td>
<td><strong>137</strong></td>
</tr>
</tbody>
</table>

In the project reports, individual respondents are identified by job category to protect their identity. The authors feel, however that it is important to attribute job roles as this has a
bearing upon an individual's 'world view' of their work environment (Checkland and Scholes, 1990; Mason and Willcocks, 1994). The interviewees' job categories are shown in square brackets after quotes along with code-numbers or letters (depending on the style adopted in individual site reports) representing the practice or unit where the interview took place. Details of job categories and numbers of survey participants for each site are presented in the Appendices to the site reports. At all times the VIVOS research team were concerned with ensuring anonymity for the interviewees. At some sites it was decided that some interviewees would be easily recognisable and therefore their job roles were subsumed into broader categories, for example, community midwives were subsumed into the community nursing category at one site (see Appendices to site reports for details).

2.3 Response rates

Effort was concentrated on obtaining as large a number of interviews as possible, which meant that little time could be devoted to following up the questionnaire surveys. The lowest response obtained to the questionnaire survey was 4 per cent (an email survey of medical students). The response rates were generally over 33 per cent, but none exceeded 50%. The comparatively low response rate might be attributed to the length of the questionnaires, but this has to be balanced by the need to provide data that complemented that obtained in the interviews. It might be better to aim for a more focused questionnaire in future to try to increase response, and to concentrate more on factual questions which would provide some additional data, though not necessarily following the interview schedule.

2.4 Adapting the methodology

Two of the principal aims of the VIVOS project pertained to the functions conducted by health libraries. These include facilitating access to information resources for healthcare staff across primary and secondary healthcare sectors. Methodologies were therefore adapted to accommodate distinctions between community and hospital working environments. Whilst simultaneously, ensuring that the goals of the research could be accomplished. Differences in projects in operation at the five main sites were a main consideration in the design and administration of the survey instruments. Additionally, the methodology was tailored to suit the various types of healthcare professionals participating in the research and their engagement (or otherwise) in information projects at their specific site. A largely qualitative approach was employed for the reasons outlined below.

To maximise opportunities in retrieval of information from subjects, recognised research survey techniques were deployed. Primarily, there were relatively small numbers [n=137] of participants, which allowed for semi-structured, mainly face-to-face interviews, though a small percentage [9%] were conducted by telephone. This mode of interviewing has the advantage of an informal and open-ended style, which Burgess (1984, p.102 In Mason, 1996, p.38) coined as 'conversations with a purpose.' This more relaxed approach was considered to be appropriate for each site, and particularly so for more junior healthcare personnel who may be less accustomed to research interview situations. Qualitative interviews are a legitimate means of exploring people's experiences, attitudes, understanding, views, and interpretations of their social contexts (Mason, 1996, pp.39-40). The semi-structured format of the interview schedule permitted a 'flexible and sensitive' approach to handle the 'specific dynamics' of each individual interaction (Mason, 1996, p.40). In essence, each interview could be bespoked to individual participants, contexts, and a subject's unique means of articulating responses. Thus scheduled questions could be spontaneously modified, excluded or indeed generated to harmonise the flow and direction of conversation. Additionally, face-to-face, informal interviews facilitate probing on issues of particular interest to the researcher, whilst conversely accommodating more effusive respondents.
In accordance with each individual site project, relevant topics were planned for the interviews, though parallel veins ran through each site. Hence certain questions were common to all sites including satisfaction with information services, awareness of, and attitudes to public access to the Internet and the subsequent impacts for healthcare professionals. However, a delicate balancing act was necessary to incorporate the differences discussed above yet achieving comparability between sites. At sites where there were recognised themes such as the implementation of training programmes (e.g. Cornwall and Manchester) interview schedules had a mutual basis and were designed to facilitate cross-site comparison as far as possible. This was promoted via the use of the critical incident technique (CIT) (Chell, 1998 In Symon and Cassell), and vignettes (Urquhart and Crane, 1994). These instruments serve to encourage interviewees to expand upon their information behaviours in ways that enable wider discussion.

The CIT is used as an investigative tool and in this project was used in the generation of qualitative data within an interpretive model (Chell, 1998 In Symon and Cassell). Described by Chell, (1998, p.56) the CIT approach:

‘……..is a qualitative interview procedure which facilitates the investigation of significant occurrences (events, incidents, processes or issues) identified by the respondent, the way they are managed, and the outcomes in terms of perceived effects. The objective is to gain an understanding of the incident from the perspective of the individual, taking into account cognitive, affective and behavioural elements.’

An important disadvantage of the CIT is that the subjects’ ‘accounts are always retrospective’ (Chell, 1998, p.55 In Symon and Cassell). However, this is countered by the facts that incidents are critical to the participants’ and recall is expected to be strong. Equally, incidents recounted by the subject may be drawn from very recent events.

A vignette is a hypothetical scenario used to ascertain a respondent's approach to solving an information-seeking problem, which by other techniques may be difficult to obtain. From the data generated during vignettes, attitudes and perceptions may be inferred (Urquhart and Crane, 1994, p.239-240). These authors suggest that the aim of the vignette is to provide participants with a problem that is not too familiar to them, but is designed to have relevance to the interviewee's job role. For the VIVOS project, vignettes were used which reflected topics of current health issues including those raised in the mainstream medical press over the last year. Vignettes and CITs used during the project are provided in the Appendices.

2.5 Limitations

It is recognised that whilst a broad range of research methods and analysis were implemented, in the post fieldwork phase some pitfalls with the approaches were identified. A major issue throughout the research has been the tight turnaround time, which impacted on several important stages in the project not least in the delivery of draft reports to site librarians.

2.5.1 The sample

Whilst efforts were made to contact a reasonable number and range of healthcare professionals at each site, not all were available for interview either in person or by telephone. A poor level of return (4 per cent) was achieved through the electronic delivery of questionnaires to medical students. Future research may benefit from a closer identification of preferred times and techniques to improve responses from students. At the Salford and Trafford, and Leicester sites reluctant respondents to questionnaires were chased up. At Leicester there was a heavy representation of PAMs and nurses amongst the interviewees, this was due to the difficulties experienced by the researchers in contacting and securing, either telephone or face-to-face interviews with other health professionals at this site. Similarly, at the South Humber site there was an imbalance of a
particular job category (community-based-management) in relation to other healthcare professionals.

In Bury St Edmunds several of the interviewees were classed as 'selected-directed' in that their names were given to the researchers as interview candidates by the information professionals at the site. They were selected on the basis of their roles as pioneers of the Pink Book, or those who had a stake in the continuance of this information resource. In Cornwall, participants in the survey were contacted and interviews arranged by an information professional at the Treliske hospital library in Truro. Hence it can be argued that efforts to secure and maintain random sampling across the sites has been weakened by the mode of sampling techniques in the two areas identified.

2.5.2 Survey instrument

Some interviewees appeared to have rather vague ideas about the project at the start of the interview. This may have been the result of inadequate information provided in the introductory letter to the interviewee. At one site (Cornwall) several of those interviewed had only very recently received training and therefore had had limited opportunity to put their newly acquired information skills into practice. This posed obvious difficulties for the scheduled questions and data collected at the site. Ideally, subjects in this position should be filtered out where usage is the central point of the research. Conversely, there are problems with participants who were trained in the distant past but who have not had occasion or scope to utilise the skills gained in training.

To improve the quality and value of research, base-data and follow-up interviews (pre and post intervention) should be attained. The research data in VIVOS are snapshot data of one single point in time. In just one site (Leicester) was a health economist deployed to run a cost–benefit analysis of the training project being implemented. Due to time limitations the economist had very little input into the design of the survey instrument. In retrospect, it is considered that the greater involvement of this professional in the Leicester survey would have resulted in a more pertinent schedule and hence yielded more appropriate data for the economic analysis. Equally, the use of a health economist at other sites could have improved the validity and value of the research by providing a cost-effectiveness element to the other information projects.

2.5.3 Interviews

Interviews were conducted at the interviewee's workplace to ensure that participants experienced minimum. However, such venues are not always conducive to continuous conversation and privacy. Personal bleeps, telephones and interruption by colleagues, or patients and other background noise are disruptive to the train of thought and flow of dialogue. Disturbances can seriously impinge on the data revealed and quality of the data collected. Similarly, the audio-recordings are affected, which in turn renders an incomplete or fractured transcription of individual interviews. Not all participants [n=8%] consented to the recording of the interview, in these situations researchers took notes, however this method restricts verbatim quotations in the report and hinders continuous dialogue. Not all locations permitted an audio recording of the interview.

As has been shown some interviews were conducted by telephone, and in the main this yielded full and useful data however, caution should be applied when comparing data between different interview techniques. Whilst tape-recording is a preferred method (Hoinville and Jowell, et al., 1989, p.112), some interviewees may feel intimidated by the potential completeness, and permanency of this recording media due to fears of security and confidentiality. This may result in a reticence on their part to be completely overt about their views on specific or sensitive areas of health information. Following this series of interviews the researchers identified the need in any future research to be more exacting whilst questioning interviewees on information use. Interviewees tended to use
'patient care' as a catch-all response to questions on information use, when more specific uses may have been relevant.

2.5.4 Grounded theory

Qualitative data were analysed using a grounded theory approach wherein 'explanation and theory are fashioned directly from the emerging analysis of the data....using the constant comparative method' (Mason, 1996, p.142). This method refers to the use of each piece of data, its relevance to other categories is recorded, and each datum is then compared with other segments of data, which have been categorised in the same way. Thus the range and variation of any category are mapped and patterns in the data can be identified (Hammersley and Atkinson, 1989, p.180). Grounded theory is therefore the discovery of theory from data and illustrated using 'characteristic examples of data' (Glaser and Strauss, 1967, p.5). For the purposes of coding and analysing data the qualitative software package NUD*IST was used.

2.5.5 Coding issues

Two researchers participated in the NUD*IST coding process to foster consistency. However, it proved difficult to sustain the desired uniformity over the volume of interviews, and across the different sites. This problem was exacerbated by the very concentrated periods of time spent coding and the actual time available for this critical task.

2.5.6 Post-project workshop

A post-project workshop was held in March 2001. One of the central aims of this workshop was to secure input from the site librarians on the individual draft reports. Due to the tight turn around time on the project there was very limited opportunity for them to read and digest their individual site report before being asked to provide feedback at the post-project workshop. Regrettably, the absence of some of the information professionals at the workshop represents a considerable loss of potentially valuable input to the report.

3.0 Project management of virtual outreach services

3.1 Initial workshop at the start of the project

The main aims of the VIVOS workshop held at the Centennial Centre, Birmingham, 10 March 2000 were to:

- introduce site representatives to each other
- share experience
- agree a general approach to the research

The following sections list the main objectives agreed, together with the methods which should be used to meet the aims and objectives.

The workshop was a rare opportunity for librarians on such projects to meet together and share experience in a structured workshop. The following notes hardly do justice to the richness of the discussion at the workshop.

3.1.1 Patient information, consumer health and working with public libraries

The following discussion points explain the problems of meeting the objective concerned with assessing the impact of health information provided through the People's Network and what might be done in VIVOS.
• Impact of NeLH not yet clear

• NHS Direct – may have an impact on NHS funded service provision for patient information and support (e.g. one closure of a patient information centre sited at a hospital noted)

• Training for public librarians in use of evidence based sources likely to be necessary, but there is a gap in awareness of needs (public libraries not aware of the scope of health library work and vice versa)

• Many public libraries only just connected to the Internet

• Some possibilities of providing information to the public through the Health Authority pages (but problem of gaining clinicians’ agreement to some of this information being available to the general public)

• Health Action Zone model not very hopeful as there may be many problems there – working across community groups, patient support groups, social services and health authority, health trusts does seem to be problematic

3.1.2 General factors affecting provision of information services

The workshop participants identified these are the main areas where problems – and opportunities might arise.

• Centralisation of IT services – directorates of information as Trusts merge

• Some queries about the ‘place’ of the LIS within this model – IT or Education?

• Training gap for database searching, search strategy formulation, use of information in clinical practice, critical appraisal – immense, requiring creative solutions, help desk approaches (?) and evaluation of offerings from ‘commercial’ service/database providers such as New PubMed

• Need for good quality intranet page design and maintenance, to provide information that people really need (rather than what others think they should read)

3.1.3 Use of £2000 for research ‘assistance’

Participants discussed the ways in which the sum of £2000 allocated for research ‘assistance’ at each site might be used, either through a special project at the site, using site staff or by allocating more research assistant time for the central VIVOS team.

• Cornwall to use for extra time for part-time staff already involved in the project

• Leicester to investigate possible use of a health economist’s time for the costs/benefit assessment of her service

• Other sites to consider options.

3.1.4 Sampling and research methods

The following outline agreements were made:
• Cornwall – as agreed earlier, but can ask in the interviews about dissemination of information for patient education, provision of PILs and patient choices (e.g. of consultant)

• Leicester – will obtain a stratified sample (health professional groups plus medical students), using gatekeeper librarians as necessary – have registered users for Athens access, for example. Will include the medical student users.

• Salford & Trafford – have lists of names for each site c.60 in total – will sample across the list ensuring mix of health professionals is reasonably representative of the population

• South Humber – sample across the region

• Bury St Edmunds – to investigate the public librarian training

• Stages of project work – to start with Salford and Trafford, Leicester, Bury St Edmunds, Cornwall and South Humber to be studied later. Around four weeks for each site (but not as a block).

3.2 Post-project workshop

A meeting was arranged for the site participants and the research team to discuss the preliminary findings, to reflect back on their projects and to consider future developments. Participants from two sites were unable to attend, unfortunately, as it had proved impossible to find a date and time that suited everyone within the time allotted to writing up the report. Reports of the meeting and the conclusions of the workshop were circulated to them for comment.

3.2.1 Feedback on draft project reports

This is limited to the three sites who were represented at the workshop, and for whom draft reports had been prepared.

These were minor, mostly concerned with clarification of the team structure and context.

• Salford and Trafford noted that it was a Project Team of the Health Authority And Salford Trust and Trafford Trust – a team of three, plus IT and the Clinical Effectiveness representation.

• Bury St Edmunds reported no errors noted so far.

• Cornwall wanted change to Page 6, para 1.2 ‘library pages were AMONGST the first to appear’. Add word ‘amongst’. (Third line down).

3.2.2 Reflection on findings

The following points were made by the Salford and Trafford representative:

• useful information and interesting

• confirms what was expected, and strengthens the evidence for observations from other LMEC (Local Multidisciplinary Evidence Centres) sites in their Region concerning training. Cascading of training needs continued support to make it work properly.
• problems with IT and NHS-net are common, lack of time from staff to commit to ‘extra’ work may be difficult, and both human and material resources are required.

• the anonymity for users was preserved in the evaluation but the different perspectives of different professional groups was also clear

• the report showed what professionals are doing with patients and families, giving them information, and how information obtained from the service may contribute to patient care.

Bury St Edmunds noted that the report:

• highlights the IT problems, which they have had to meet by launching the Pink Book on the ‘Eastern Web’. The Pink Book that many users have is offline and therefore not up-to-date.

• focuses on issues of current concern, these at present include the fact that the Local Implementation Strategy does not reflect the contribution from the Library Service that it might.

• Bury St Edmunds had wanted to put the Pink Book on the Intranet of West Suffolk but as the Intranet is still not on people’s desks, they have had to go for Eastern Web. Bury St Edmunds creating new department web pages for information which will be available to patients too. Pink Book clinical guidelines will be on NHS-net and not available from the Internet. They are keen to have links from the html version of Pink Book to the Community Guidelines but there are IT problems, and so they will transfer the Guidelines across instead. The content is important, as aspects such as a current telephone directory of relevance to certain groups.

The Cornwall site representative noted that the report:

• had impressive substance, content and contextualised problems, with a surprising amount of interview quotes included

• provided welcome news on the usefulness of the training

Comments from the principal researcher included the observation that most people learn skills in an educational setting and would not use the service so much if they are not studying. The workshop participants agreed that education was a driver, but possibly the greater ease of access might permit the quick check on a clinical problem. There are common problems at all sites concerning access to the IT facilities themselves and the libraries.

Following a brief report on the Exeter findings, the Exeter representative commented that:

• the problem of distance to the library has been drawn out as a key problem for users, thus emphasising the need for the Internet service.

Other points about the Exeter findings are:
• the relatively high use, and expectations of use of electronic journals by users in the Exeter site. The purposes of use often concerned research, as might be expected. Many people heard about the service by personal contact.

Workshop participants agreed on the importance of personal contacts to provide:

• advice and guidance on new and existing information services
• training e.g. in database use, and also educational support in using the services to best advantage
• ‘help-desk’ support, particularly for infrequent users of the database services

3.3 Lessons learnt, and implications for future developments

All sites agreed that they appreciated being part of a wider evaluation, and not just involved in their own evaluation. The VIVOS project gave extra credibility to their project at local and regional level, as well as providing evidence for the need for future policy directions to be followed. Health professionals often needed to raise their expectations of the library and information services, and, similarly, library services need to promote their services continually.

The research staff noted that it would have been useful to interview more users, particularly more staff who had not undertaken training (and therefore the likely candidates for cascaded training) but such staff were often more difficult to identify and contact.

Specifically, Salford and Trafford intend to:

• continue training support, and this is now part of the Local Implementation Strategy employing someone to take over responsibility for database training.
• capitalise on the lessons learnt from working as a team of librarians on the project (this could help make the move towards partnership working easier)
• will be quote and use the report to show the evidence of their evaluation

Specifically, Bury St Edmunds hope to develop the project by, e.g.

• cancer referral guidelines on Pink Book, interactive referrals for GPs for linking primary and secondary care. This is still on the agenda.
• encouraging users to check their own details and passing on change (another site noted that in some sectors professionals are making changes themselves to information that is online).
• trying to resolve the problem of availability of clinical guidelines (other sites agreed that the fear of negligence appears to be behind the reluctance to make clinical guidelines publicly available).
Specifically, Cornwall are developing the work through:

- continuation of the training, as the need is still there. Training is important when people need and want it or else it loses its relevance. Cornwall found a huge increase in demand for training from Community Based staff, and they have now got two days a week for training in the library, and are also under pressure to extend services to General Practices.

- ensuring that access to the service is not password controlled, which might have the results of diminishing use of community hospital facilities by practice staff, for example. This was felt to be counterproductive.

Specifically, Exeter are developing the work through:

- developing access to electronic resources but not to the extent of becoming a virtual library only.

- supporting focused use of library services. For example, people do come to the library with print outs of what they have found online and are then pleased when they easily find what they need on the shelves.

The workshop participants discussed the different views of health professional groups on whether they should be expected to seek information in their own time, or whether such information seeking should be seen as part of the working day (with protected time for that). The complication is the long working hours of many doctors, compared to discrete shifts for some nursing staff.

3.4 Project management of virtual outreach projects

With the roll-out of the National electronic Library for Health, and networked databases, the way these projects have been managed and developed should be of interest to those starting out with new developments. Participants were invited to reflect on their initial assumptions, and how they coped with problems which arose.

3.4.1 Assumptions made at the start of the project

Most of the projects were entrepreneurial in the sense that the developers had ‘seen the future’ and found a suitable opportunity to test out and develop ideas. In that sense, some lacked the grand plan, but saw their work as the way they would have to develop in any case.

Specifically, Cornwall assumed that:

- training would be necessary to enable staff to use networked PCs. The way the money allocated was used was specified by senior management, but the scheme was novel in that very little training was generally offered with PC provision.

- evaluation would be necessary – the project staff had been able to say ‘we are evaluating the training within a national context’ which has been positive, established credibility and made the project valuable in the eyes of their stakeholders, who are now anxious to see the report.
the training dept would be evaluating training but they generally do not evaluate the effectiveness of their training (and the Training department was amazed at the results)

Specifically, Bury St Edmunds assumed that:

- that the format of the Pink Book would be easy to progress to html, within six months of sending out CD-ROMs
- continuation of working with community staff, progress was necessary (and because of IT problems have had to work hard to maintain confidence and consolidate links)

Specifically, Salford and Trafford assumed that:

- team working would be relatively smooth, and that goals would be shared
- the project would be a stop-gap, but a useful learning experience in preparing the ground for future services for primary care in particular
- IT would work (possibly a rather naive assumption in hindsight).

Specifically, Exeter assumed very little, as there was not an obvious project at the outset. However, they did assume that:

- location of the new hospital would make physical visits to the library more difficult
- need for electronic access would increase, and this was the way to go, given what the university (networked) knew about the library resources (lots) and what staff in hospital knew (little).
- widening access to resources would even out inequalities of access
- university would be prepared to host the site, though not necessarily helping them with construction of the site (not a problem as they are part of the University)

3.4.2 Identified risks and emergent problems

Unsurprisingly these concerned computers and human resource issues. The possible IT problems are hard to quantify, and similarly problems of organisational politics can often be hard to predict. All sites had experienced problems, some which had been expected, and others unexpected. Staff shortages are manageable in a routine working situation but can cripple the smooth running of a project, and the impacts spread beyond the project to the normal working environment.

Participants agreed that the identified risks are likely to involve:

- IT problems – connections, and ‘getting it all together’
- training and support needs of library staff, including those not directly involved in the project
- inter-departmental conflicts
• staff absence at key times

• unrealistic expectations of other stakeholders in the project.

Projects should plan for contingencies such as the above, and also allow for the amount of communication with users as service patterns change.

### 3.4.3 Reflection on changes throughout the project

The changes in policy direction at regional and national level were recognised and should be exploited to encourage change in the direction required. It seems to be more a case of adapting to the changes required for implementing clinical governance, for example.

### 3.4.4 Coping with technical problems

Exeter noted particular difficulties in the disparities of systems between the University environment (and the JANET network) and the IT systems at Trust level. The University facilities are so far ahead of the Trust that ensuring equity of access is very difficult.

Other sites note similar problems in trying to maintain a fair level of services to all users when IT sophistication is so unevenly distributed. Keeping users informed of developments is difficult when both print and electronic means may be necessary.

### 3.4.5 Coping with human resource issues

Project representatives agreed that key issues were:

• Training for staff in libraries, and ensuring that staff appreciated the benefits of any new system for themselves, as well as understanding the reasons for change.

• Involvement of staff in the change management process.

The approach to change and training (big bang versus slow evolution) was debated in relation to the observation that use of virtual library services might be infrequent at first.

Involvement of the library in the user education programme had the following advantages:

• user education leads to better information about the training needs of users.

• users need to use skills regularly in order to maintain skills (and hence may need ongoing support)

• working in partnership was better than working in competition on information skills education.

### 3.4.6 Coping with legal and regulatory issues

Project representatives agreed that:

• electronic ordering of inter-library loan requests would be ideal if copyright problems could be resolved

• electronic journals need to be made easily available
• working with two networks (e.g. JANET and NHS-net) could be difficult.

3.4.7 Coping with cultural factors

Comment from the project representatives focused on the way the ‘lifelong learning’ part of the quality framework fits alongside clinical governance. In government policy documents concerned with clinical governance, clinical governance is part of the ‘dependable local delivery’ supported by lifelong learning and professional self-regulation (Department of Health, 1998). Clear standards of service (e.g. National Service Frameworks, National Institute for Clinical Excellence) feed into clinical governance and final link in the loop is the monitoring of standards in service.

In theory, this seems wholly reasonable, but on the ground it seems that there are organisational structures which do not fit this schema. In particular, there is a conflict between training and education when it comes to ‘information skills’. Training is seen as something delivered as a discrete unit, which may not change over a period of three years a training department may plan its training. The library services are more inclined to view the acquisition of information skills as an educational process and teaching methods used need to be adapted to the circumstances and the group of learners.

Project representatives noted the following problems:

• clinical governance and critical appraisal agendas did not appear to fit well for the training programme (possibly this was because the concepts were unfamiliar to the participants in the programme at the time)

• IT departments tend to train, whereas the libraries both train and educate. Training for the libraries may best be viewed as part of an educational process.

• The libraries may be in the business of ‘lifelong’ learning, but sometimes their users view them narrowly in the context of formal education. It is hard to get people to appreciate how library and information services might help the process of informal education and reflective practice.

3.4.8 Barriers to be overcome

Mostly these concerned one or other aspect of ‘customer relationship management’. Identifying and maintaining relationships with customers/users was regarded as very important, and all representative agreed that a high library profile was regarded as essential though there was the danger of banging the drum so much that the immediate reaction was negative: ‘oh no, not the library again’.

Particular issues concerned:

• identification of users (a high turnover (e.g. students and junior staff on rotation) may mean that staff register and then leave shortly afterwards).

• recognition and building relationships (takes time to build good working relationship with GP practices, for example)

• finding the right balance for the users between training and education

• assessing which support tools are appropriate (e.g. can users handle the online tutorials?)

• politics (ensuring representation on the right committees in the Trust or Health Authority)
• promotion (always a problem – users do not always see what is advertised for them, need for continuous re-invention)

3.4.9 Factors which signal success

The indicators of success varied. Some sites observed an increased uptake of services, or at least a greater awareness of services offered, though the Exeter site noted that paradoxically external use of their Website was probably far greater than use within the Trust, which had been the aim of the work in the first place.

Site representatives agreed that demands for more training and support should be viewed as a positive sign of success. Satisfying such demands may be difficult when there are physical constraints (e.g. no dedicated training suite, geographical distance from the library) and online guides, or occasional drop-in sessions at remote sites are some of the methods that have been used to consolidate earlier training and support.

3.5 Lessons for collaboration and project management

In a comparison of primary care projects conducted at the same time as the GIVTS project, the problems of communication, collaboration and co-operation are recurrent themes. Two taxonomies (Hudson et al., 1997; Grosman and Larson, 1996) of ‘collaborative’ working were examined (Urquhart et al., 1999b, p.163). Both taxonomies move from poles of isolation (or don’t know = co-exist) to integration (or co-operation = know and care) at the other. One taxonomy (Hudson et al., 1997) considers the stages between as communication and collaboration, the latter stage characterised as a high trust stage, with formal and structured joint working. The other (Grosman and Larson, 1996) has only one stage between, termed ‘collaboration’ which features some shared awareness of responsibilities, but also some ‘turf protection’.

Quite clearly there are ‘turf wars’ problems, or the potential for such problems, in dealings between IT departments and health libraries. As greater awareness of shared responsibilities for training and education evolve, then it should be possible to move towards integration or co-operation. More joint working, on the same project, should help a shared awareness of the responsibilities and concerns of each group. As with any consultation process it has the potential to be a rewarding experience in itself:

“Consultation, whatever form is takes, should not be just a question of: How many dances to we need to dance before we do what we were going to do in the first place? It should be an enriching and improving process”

South Thames RHA (1994)

At the workshop the projects acknowledged that such developments as the NeLH might seem to overtake many of the developments that they had instigated, although the NeLH will not supply the databases such as MEDLINE and CINAHL which will be the responsibility of the Regional Library Units (largely). They agreed they had a head start over other libraries which had not been involved in pioneering efforts in the working relationships with the other stakeholders – IT departments, clinical effectiveness and clinical governance representatives and the users, the health professionals and other NHS staff.

The approach to running a successful ‘virtual outreach’ project appears to require:

• a ‘superordinate’ goal (Pinto et al., 1993) or what might be called the ‘vision thing’. This can be shared with other departments or units (as in Salford and
Trafford) or largely be the property of the library, but all these projects had a sense of what they were trying to achieve in the long term.

- willingness to prototype – a approach which follows the stages of testing, evaluation, taking stock, and moving on.

- flexibility in implementation. The IT situation may change with increased funding but the problem of lack of standards, delays in hardware and network implementation in the NHS mean that some 'Scenario B' plans are essential.

- continuous support for users. This is not the situation where a quick fix will work.

- consistent support for the library team at the home base, including those not directly involved in the project. Their awareness and training needs need to be identified and met

- recognition of the educational role of the project – and the library service. This is a 'lifelong learning' agenda with the users, not simply training.

4.0 Health information for the public

As explained above (Section 1.1.5) an additional objective was specifically requested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via The People's Network. Attempts were made to identify an appropriate approach but, following discussion with the VIVOS Project Advisory Board and contact with a representative from The People's Network, the research team concluded that the initiative had not yet reached a suitable stage to permit an effective evaluation.

It was therefore decided that the VIVOS project should investigate existing projects aimed at providing health information to the public via public libraries. Further research revealed that, although there is general interest in this area, there are few established projects of this type. The Information Network for Croydon Health (INCH) project was identified as being at the forefront of developments and was furthermore suggested by the representative from the People's Network. A researcher from VIVOS therefore made contact with the Information Services Manager at Croydon and arranged to visit the project.

In pursuit of further routes of investigation, the research team took advantage of opportunities presented at the research sites to contact organisations with an interest in facilitating the provision of health information to the public. It also proved possible to look at cross-sectoral collaboration in the form of a training session on using online Evidence-Based sources run for public librarians by the West Suffolk Hospital librarian.

Finally, through several of the survey instruments of the VIVOS project, the views of health professionals relating to increased patient-access to information (particularly via the Internet) were canvassed.

Many of the initiatives contacted and issues raised during this investigation would provide interesting subjects for future research.

4.1 The Croydon INCH Project

The visit to the Croydon INCH Project took place on 4 April 2000. The following is a summary of the information obtained during the visit, and the help of Heather Kirby, Information Services Manager, and Liz Moss, Community Information Librarian, is gratefully acknowledged.
The INCH (Information Network for Croydon Health) project is a collaborative initiative developed by a team of librarians from the health- and public-library sectors. The original team has now become a steering committee and includes other stakeholders.

INCH forms one part of a wider project to develop the network infrastructure for Croydon public libraries and to expand the Croydon Online service within the community. The health-information component of the project (i.e. INCH) aims to deliver a unified, authoritative source of information and provide gateways to sources of expertise and knowledge. The team intends the service to provide information that helps enable people to lead their normal lives, going beyond the traditional health provision boundaries, and providing a comprehensive health and social care information directory for Croydon.

4.1.1 History of the Croydon INCH Project

The idea initially came out of regular discussion between the librarian at Mayday Hospital, the Community Information Librarian the Information Services Manager which took place over a period of time early in 1997.

The team were looking at the medical field in Croydon and decided that there were gaps in the provision of information across the borough. There was lots of duplication and some poor quality information that was not regularly updated. They felt there was a need for a unified, current, easily updated, easily accessed source of information (at both a regional and national level).

They began by prioritising directory information because public libraries were often asked about this. Some of the information was in hardcopy and was difficult to extract when queries came in. This information could be drawn together from sources around the borough and presented in an electronic format. The aim was to make the information searchable and free to access. It was decided not to rebuild lists of General Practitioners but instead to put links into health authority. Initially this proved problematic since the project tended to be blamed for out-of-date information, etc., however now individuals and groups are increasingly happy to be on there because they can see that it works.

At this point an introductory paper was written, identifying needs and proposing to use Croydon Online as a vehicle to deliver the service since it didn't require to be in a closed network. This meant that the service would be able to run twenty-four hours a day seven days a week.

In summer 1998 an application for Wolfson funding (Public Libraries Challenge Fund) was made. It was a three-part project bid:

1. **Library infrastructure to be improved.** The team wanted to demonstrate the value of building that infrastructure and so planned to develop the INCH (at that point called CHIN) Website and outreach connections. The funding allowed them to employ a full-time person for 6 months.

2. **Connecting 14 housebound users and giving them training** This was intended to demonstrate that provision of a service to housebound users was rewarding and beneficial. It is part of social care to look after their intellectual needs. This was labour-intensive but worth doing. They were also able to connect some local voluntary organisations.

3. **Job mart**

The team feel that this was an innovative move at the time, ahead of the current enthusiasm for social inclusion.
4.1.2 Project management issues

*Maintaining currency of the information*

The information is kept up-to-date by collective memory. Considerable effort is needed to sustain this. It is important to make people aware of the project and its value and this is a labour-intensive process.

The team feel that there is pressure to demonstrate the worth of the service and to build loyalty across the community. They think the service would benefit from closer ties with other social initiatives such as lifelong learning.

The team have found that it can be difficult to ‘draw the line’ and define a clear ethos of what is covered by the term ‘health information’ – for example, some people assume that the term refers to statistics whereas the popular interpretation of ‘health in the community’ embraces issues as disparate as transport or happy education. Often potential contributors have asked to be included when the links to health are very tenuous. Defining the scope of the service is difficult since various issues must be grappled with, for example whether or not to include private healthcare services.

To encourage contributions and facilitate maintenance of the site, free templates are offered for any organisation that wants to use them. Several organisations have taken advantage of these templates.

*Successful teamworking*

The three core team-members were professional librarians with the same principles. As others became integrated into the project the original team were able to accommodate people with social concerns but who did not have the same familiarity with information skills. The librarian at the Mayday Hospital has left since the start of the project but her successor has shared the outlook and motivation of the INCH team. The INCH steering group meets regularly, roughly once a month.

An important factor is that the role of the public library was already established as very much part of the community. This meant that there was a foundation of goodwill and credibility within the community which has led people to be receptive to the initiative: ‘You can’t build a platform like that overnight, just because you have an idea’. The team feel that the development of INCH has strengthened this credibility even further.

Further advantages of the INCH project are that it has prompted library staff all round the area to become involved in Croydon Online and that it has been a learning experience for all those involved leading them to develop skills they never expected to acquire.

4.1.3 Evaluating the INCH project

The INCH team have found that it can be difficult to evaluate a project of this type. Good feedback has been received from library managers and from the housebound users who were supplied with Internet connections following the successful three-part bid for Wolfson funding. A questionnaire survey and a series of in-depth interviews provided data for the Croydon Online Community Network Project Report (1999) and for a seminar conducted in March 1999.

The team have also gauged success of the project through by the numbers of organisations actively approaching them wishing to participate. This now includes national organisations such as Age Concern and recently MIND. A further indicator of success is the fact that they are often being approached in time for them to work with the organisations to ensure details are provided in a way they can use effectively.
The project has succeeded in widening the popular view of the public library: people are 'beating a door to them now'. The team see this as a good thing for public libraries and hence as a good omen for the People's Network.

Another benefit of the project has been its cross-sectoral approach which has helped to forge links between health librarians and public librarians. At the time of the VIVOS visit the Information Services Manager had been invited to talk to group of health librarians about the project which a positive move towards building on these links and promoting similar collaboration in other areas of the country.

The team have plans for further expansion of the service and the ultimate aim is that it should be collaborative amongst the wider community. They recognise, however, that this may be a slow process: the forum is open but at the time of the VIVOS visit nobody in the wider community had FTP access.

4.2 Attempts at establishing links with appropriate community-oriented groups

4.2.1 Community Health Council, Bury St Edmunds

During the survey process at Bury St Edmunds the opportunity was taken to interview a representative from the Community Health Council (CHC). The discussion focused on how information is disseminated to the public through the CHC and the role of the CHC in contributing to the empowerment of patients by representing their views on local issues relating to the provision of healthcare services and helping them to articulate complaints. At the time of the survey the future of the CHCs was uncertain and a major part of the interviewee's role was one of change-management.

4.2.2 Health Action Zone, Leicester

In Leicester an attempt was made to establish whether it would be possible to make contact with the Health Action Zone. The initial contact was with a researcher based at a local library who had been in touch with the Health Action Zone. Based on this researcher's experience, it was decided that the Health Action Zone would be unlikely to wish to contribute to the VIVOS project and attempts were therefore abandoned.

Also in Leicester, the site librarian organised a meeting between a member of the VIVOS research team and two representatives from local consumer health initiatives with a view to establishing whether there was potential for involvement in the VIVOS project. The two initiatives were: Infolinks – a broadly-based community/council information system – and a project for setting up touch-screens for easy access to information by the public. After discussion with the representatives it was decided that the VIVOS project was not an appropriate vehicle for evaluating these initiatives. The Infolinks representative said that they were in the process of converting to a Web-based version and felt that the project would be requiring evaluation at a later date. The touch-screen project was already involved in an evaluation process. When asked about links with the health library, both representatives said that they expected to forge closer links in the future and were looking at ways of collaborating with the health librarian and were participating in the Local Implementation Strategy.

4.2.3 North Cumbria Health Authority

A researcher from the VIVOS project also made contact with the Project Manager for Information for Health at North Cumbria Health Authority. The Project Manager confirmed that a post has recently been created to develop a structured agenda around the provision of information for the public. It was agreed that once this post has become
established there would be potential for further research to be undertaken and that contact should be maintained with the VIVOS research team.

4.3 Collaborative projects: training in Evidence-Based resources for public librarians: Bury St Edmunds

The hands-on training session, which took place on 18 October 2000, was the second organised by the librarian at the West Suffolk Hospitals NHS Trust. There were three participants from a large public library in Suffolk, and the session was observed by two researchers from the VIVOS project. The session was also audio-taped. The tape was not transcribed because the quality was poor but it was used to enrich the researchers' written notes. The comments below are a brief summary of the content of the training session which took place in the computer room at West Suffolk hospital.

4.3.1 Resources covered in the training session

The health librarian began by explaining the remit of the course: finding good Evidence on the World Wide Web. She then showed the trainees the hospital Intranet but, since public librarians do not have access to this, focussed on the Internet site, explaining that it would be the public face of the hospital and that gradually more departments will have a presence on it. Discussion of the Internet site also included a look at the health library catalogue and at the links to key websites for health-related information. Specific links shown to the trainees were:

- OMNI (for links to free MEDLINE and other sites)
- The Cochrane Library database
- NICE (for clinical guidelines)
- A basic online medical dictionary
- Other related healthcare sites, e.g. ScHARR, the British Medical Journal and the Royal Colleges

For each of these sites the librarian gave guidance on how the information available through the site could be used in the context of the public librarians' role, stressing the value of accessing links to sites that have been reviewed, and used sample searches to demonstrate features and search techniques. Since none of the trainees had ever access Internet Grateful Med or PubMed, the health librarian explained about MeSH headings.

The trainees were given the opportunity to try out searches themselves and to ask for assistance or explanation.

4.3.2 Discussion with the public librarians

At the end of the session, the health librarian asked the trainees for feedback. All said that it was 'very impressive'. They felt that the BMJ site would have limited appeal to the public because they would need things in lay-terms and that medical students are unlikely to be looking for information in public libraries unless they were on holiday or doing courses specifically linked to care in the community. The discussion also covered the implications for librarians of the wide availability of health information on the Internet and the need for authentication of sites.

The VIVOS researchers took advantage of the post-session coffee-break to ask the public librarians how the provision of health information impacts on their current job-roles and
how they think this is likely to develop in the future. Their views and comments are included below:

Q1: How does provision of health information come into your current job?

- Often people come in because the doctor has 'mumbled something' and they are seeking clarification about an illness that they or a relative may have.
- The odd one or two are doing research, usually community-based healthcare topics, needed for courses. Or often government publications.
- When people come in they tend to look in medical dictionaries, dictionary of symptoms, and have some of the family health books. They also look on the Internet. If the symptoms are difficult then they ring the West Suffolk library.
- People can use the Internet in the library (all libraries have had Internet links for about two years though some got them earlier than others).
- Smaller branch libraries often encounter people asking about a particular illness that they or a relative suffer from. Sometimes it's a child or student needing information for a course/project but usually it's along the lines of 'I've been diagnosed with…'
- Also people often ask about tablets and what they have been prescribed for. People don't seem to ask in pharmacies (though would need checking). Often people are concerned about the side-effects of drugs.
- There are 13 libraries in the area. Staff from smaller branch libraries would refer questions on to the central library. However, this is happening less frequently because local staff are able to look things up on the Internet.
- A lot of people expect the librarians to find things for them.
- They feel that something like a book is more user-friendly and more anonymous. 'People know how to work a book'.

Q2: What role do you expect it to play in the future?

Some people collect all they can about their illness, becoming obsessive, and feel the doctor may be trying to hide something.

Q3: Any examples of a recent health information needs?

They have come across ethical problems and feel that they have a very caring staff because the population is quite elderly so a caring attitude has been fostered with an emphasis on providing support. 'However sympathetically you hand it over you can't just hand over information.'

Q4: What kind of questions are you asked or do you anticipate being asked in the future?

- They haven't noticed people coming in with more sophisticated health-related questions as a result of greater access to information. People have low expectations of libraries generally. It depends very much on the area and demography of the community.
- They don't find that people tend to connect with the news whether the news items are health-related or not.
Q5: How do you cope with getting the right balance between giving information and advice?

They are very good at saying 'we don't give advice'. It is the same situation as with legal questions. This is emphasised in staff training sessions.

Q6: How do you feel about the general issues surrounding public access to health information?

- They would look for sites with an organisation behind them and tell people to be careful. For example would use the BMA site.
- They point out the need for caution with sites originating in the US and independent sites

4.3.3 Collaboration between public libraries and health libraries

During the course of the VIVOS project, several health librarians have expressed an interest in forging links with public libraries in their local area. Some have been able to take the initial steps in this process. The librarian at the West Suffolk Hospital has developed a structured programme of training sessions aimed at introducing public librarians to the concepts of Evidence-Based Medicine and the online resources available to support it.

At the time of the VIVOS survey, the health librarian was conducting her second training session and hoped that more would follow as opportunities for promotion increase and as trainees spread awareness amongst colleagues. Though in its early stages, the project appears to be successful with interest from public librarians and the potential for a reciprocal training session at a public library for health staff. The participants also discussed the possibility of providing access to the health library for public librarians.

The potential benefits of collaboration between public libraries and health libraries is recognised in West Suffolk and the first steps towards closer involvement have been taken. Other health librarians have also acknowledged that they will be looking towards greater contact with public libraries as demands for provision of accurate and reliable health information for the public increase. In most cases however these steps are very tentative and further research would be necessary to gauge a full picture of the extent of and potential for cross-sectoral collaboration.

4.4 Health professionals' views on increased public-access to health information

During interviews at the main VIVOS sites, survey participants were encouraged to elaborate on their feelings about increased public access to health information, particularly via the Internet or online bibliographic databases such as MEDLINE or CINAHL. Since public access to, and perhaps interest in, such databases is less widespread than Internet-use a lot of the comments from interviewees related to the Internet. Most participants had views on, and often direct experience of, patients or their carers accessing health-related information via the Internet. Several key themes emerged from their comments.

4.4.1 Patient involvement in care-management

Interviewees at all sites where interviews took place practitioners were responsive to the participation of patients and their carers in active decision-making about treatment and care-management. This reflects the emphasis on the ‘informed patient’ and ‘patient involvement’ in government policy documents such as Information for health: an

'I think it is a further step for relatives, instead of being very passive in consultants’ interviews when they see the medics they feel, they are actually, feel they are part of that discussion.’ [CN: S&T]

'Well I think, I you know, I think it’s a good idea. I think people should be more informed and know more about their condition and the care they should be receiving.’ [CN: Corn]

'And actually that was quite positive actually, ’cos we talked about our aims and objectives and our goals for [therapy] and we had a lot more open discussion on that as a result of it.’ [PAM: Leics]

4.4.2 The healthcare practitioner as 'information mediator'

In order for patients to be able to participate effectively in these decisions they must have access to current and accurate information. Provision of good-quality patient-oriented information is a concern for health practitioners who are finding that a new role of ‘information mediator’ is increasingly becoming part of their daily practice. Several interviewees expressed concerns about the reliability of Internet sites and patients’ ability to contextualise and interpret the information contained in them. This is particularly of concern when patients or their carers access sites that are aimed at professionals and contain medical jargon or in cases where information comes from unauthenticated sources. This where the role of ‘information mediator’ appears as practitioners guide patients through the wealth of information available.

'And sometimes it’s like something that is put in a medical term can sound so much worse than what it actually is in, in normal speaking terms.’ [CBM: SH]

‘…and if they have landed on a Website that might be aimed at healthcare professionals then it may be in a language they don't understand and we have had cases where people have come in and asked me to help them interpret information that they've got, which is fine.’ [CP: SH]

'So you could end up with people getting hopes up or terribly, terribly misinformed under, about conditions just because some nutter has decided to put up a Website and put a load of rubbish on it.’ [TGC: Leics]

'If patients come to me with information they have gained from whatever source I am prepared to discuss it…and if it is something which is more rare, and they need specific access then I will make every effort to find it.’ [PCC: S&T]

'I want them to know about the good sites where they can get good balanced information, not where they come away with a very sided view of something.’ [CN: Corn]

4.4.3 Socio-economic factors

The socio-economic context of the environment is always a critical factor in social research. Health information-seeking behaviours by individuals or groups and interviewees’ perceptions of patients must be seen in their social context (Kuhlthau, 1998). Consideration was given to this aspect by some interviewees who reflected on the social composition of their practice and/or working area. This is an important factor in view of the issues identified above: if easy access to good-quality health information is imperative for full involvement of patients and their families in the decision-making process then some patients are better placed to for easy access to this information, especially if it is in an electronic format, than others:
‘...it’s probably because I mean a lot of clients are elderly and so they wouldn’t possess a computer. I think maybe that...the younger ones probably do access a computer, but none of them have ever said that they have.’ [CN: SH]

‘Not patients that I deal with no, because I tend to work with patients that are over seventy-five. So my patients wouldn’t have access, I don’t think and would have interest in searching on the Internet because of the age group.’ [PAM: Leics]

‘…it is quite a deprived area and we haven’t got an awful lot of patients that have access to the Internet.’ [AS: S&T]

‘A lot of my caseload is in an area that I wouldn’t expect people to have access to a computer anyway.....’ [HV: SH]

4.4.4 Implications for healthcare for professionals of increased patient-access to information

Most interviewees were favourable to the wider availability of health information and to the contribution this makes to patient-involvement in decision-making and hence empowerment. However, along with the increased emphasis this places on the role of guiding patients in their use of health information, participants identified the following further impacts on their working environment:

Time implications

‘But it means that there is more demand on us to, to explain our management...for patient care, and it’s more time-consuming.’ [SCP: WS]

‘So you can have to spend a lot of time trying to undo misinformation if you like.’ [TGC: Leics]

‘It is time-consuming from out point of view, however it can educate people about things, hopefully it will you know give them some...a little bit more ability to manage their own affairs.’[PCC: S&T]

Raised expectations

‘But I think it is just trying to control the amount they pull off really, and their expectations, ‘cos sometimes if they, if they read something they expect it to happen, well we might not necessarily have the resources to do what they expect...’ [DN: S&T]

‘...sometimes it can raise unrealistic expectations for people about their treatment, because America seem to be quite good at certain, certain treatments and they’re often not available in this country anyway.’ [PAM: SH]

‘They can get the wrong bias, and they can be led to expect things which are not appropriate to their case...They can therefore be disappointed or indeed argumentative.’ [PCC: Corn]

‘I think it is good but it makes my life harder...some of the information I think can give them false hope about their child or about the services that will be available to them.’ [PAM: Leics]

Pressure to keep up-to-date with developments

‘Yes, yeah, better informed than we are! Which is why, you know, which is why we’ve got to keep up with it really,’ [CN: Corn]
'I'm all for people finding out things and getting to know a bit. It makes more work for the doctor but I suppose that's what we're here for...I think it's a good thing, it keeps the professionals on their toes too.' [CP: SH]

**Re-definition of the traditional relationship between practitioner and patient**

'They got all the information they needed before they got a second opinion from their GP.' [N: Leics]

'I mean I do know of people, not necessarily patients but people that, including relatives, that try and catch you out because they'll read up about their problem and then ask you what you think and then compare notes.' [CN: SH]

'I believe in sharing information rather than professionals holding it all.' [CP Leics]

**5.0 Taking a qualitative approach**

**5.1 Appropriateness of methods and qualitative approach**

Although an informal, semi-structured strategy can foster openness and spontaneity of discussion some problem areas were identified in Section 2.5.3.

The nature of the individual projects already meant that four of the main sites (excluding West Suffolk) had existing data of numbers of subscribers to a particular service or of trainees on courses. What was lacking were the real reasons and motivations underpinning people’s use of services and information-seeking behaviours. To explore these reasons and motivations it was decided to employ a qualitative approach, which would allow for in-depth discussion and flexibility to meet different contexts and individual situations. Whilst there are similar problems which impinge on the daily working lives of health professionals each of the VIVOS sites had its own unique environment, and through the use of in-depth interviews researchers were able to investigate the issues at a micro level. Although this approach engenders certain limitations as discussed above, (see Sections 2.5.3 and 2.5.4), it is not too prescriptive and has the advantage of allowing the natural development of themes as they emerge throughout the interviewing process. This is in-keeping with the traditions of grounded theory (Glaser and Strauss, 1967). As the themes and concepts emerge questions could be refined and adapted to suit these situational experiences. The flexibility of the approach enables researcher sensitivity to the individual working environment which can only be acquired at the site, and often in the individual interview context.

The coding and analysis was done through the software program NUD*IST, this enables the complete saturation of data and facilitates the process of cutting data in many different way. In the process of using NUD*IST themes readily emerged across sites. In all 137 interviews were conducted and when transcribed they yielded significant amounts of data, which would have been very difficult to manage without the support of a dedicated software programme.

Questionnaires were used as a supporting instrument at several of the sites (Leicester, Bury St Edmunds, and Exeter) to broaden the scope of the research and increase the sample size. Quantifiable data were collected from the questionnaires about health information usage, and were analysed using the statistical software programme SPSS. Generally, simple descriptive frequencies and charts were generated. Though at Leicester a more sophisticated cost–benefit analysis was conducted by a health economist. The project has therefore demonstrated the usage of a triangulation of methods and procedures of analysis with which to validate the data collected. Other advantages of questionnaires are that they can promote a greater perception of
anonymity amongst participants potentially resulting in the more frank disclosure of information.

A triangulated methodology approach was followed to ensure internal validity since responses can be corroborated, for example, questionnaires and interviews covering the same topics on the same sites. Arguably, the use of vignettes and critical incident techniques used in interviews can provide a checking instrument as comments revealed during the use of these techniques can either confirm or contradict earlier statements given in response to more structured questioning. However, Smith (1997) points out that it is difficult to have different kinds of qualitative data that line up exactly to support a theory. In the current study, similar themes were identified through all survey methods and across all sites thereby supporting a consistency of theory.

5.2 The development of research and evaluation skills amongst information professionals

A stated objective of the VIVOS project was to promote the development of research and evaluation skills amongst information professionals through active involvement in the project. The research team made every effort to achieve this and participation of the site librarians, and in some cases other library staff, was encouraged at all stages of the project through:

- Consultation with site librarians about the utilisation of the £2000 per site for research assistance.
- Attendance at VIVOS project workshops.
- Representation at Advisory Board meetings.
- Input into the design of the survey instruments.
- Discussion and feedback relating to preliminary reports.
- Projected participant in dissemination process.

As described in Section 3.0, representatives from the sites were invited to participate in two project workshops: one held at the start of the project and the other during preparation of the final reports. Representatives from the five main sites attended the first workshop where they participated fully in discussions relating to planning the survey process and the approaches to be taken at each site. At this workshop they were given the opportunity to suggest how they would like to use the £2000 allocated to each site for ‘research assistance’.

At two sites (Salford and Trafford and South Humber) the librarians decided to use the money to fund extra research hours from the Aberystwyth team. The Leicester site librarian opted to commission the services of a health economist from ScHARR for a cost–benefit analysis on use of NISS Biomed. In Cornwall and Bury St Edmunds the money was used to pay for staff time so that library staff could participate in the survey process. At these sites library staff helped to organise interviews and suggested suitable groups for inclusion in the sampling process. In Bury St Edmunds the librarian conducted a few of the interviews herself.

At all sites (excluding North Thames where the VIVOS team were using data already collected through previous surveys) the site librarians were consulted during the design of the survey instruments (including the vignettes).

The Aberystwyth team kept the site representatives informed of progress and meetings were held at each site prior to the commencement of the survey process. There were two Advisory Board meetings held during the life of the project and all sites were invited to send representatives. At least one site was represented at each meeting.
The site librarians able to attend the post-project workshop were given copies of the appropriate preliminary reports prior to submission of this report and comments were invited. However, as noted in Section 2.5, pressures of time have meant that this process has been somewhat rushed.

It is anticipated that representatives from the individual sites will become involved in the dissemination process and participate in presentations and events.

6.0 Discussion of findings

6.1 Motivation

Across the five main sites, consistent themes of enthusiasm and motivation emerged amongst participants in the use of both electronic resources and personal and assisted development of information skills. This enthusiasm is evidenced in the attendance at organised training sessions, but also is seen where people acquired skills prior to attending courses. Motivation was also identified in situations where the IT infrastructure was incomplete and participants accessed electronic resources at home or by sharing colleagues' IT equipment. As the impacts of Evidence-Based Medicine and standardisation of care are felt by individual practitioners there is acknowledgement of the role of, and need for IT, and the fundamental benefits it can bring. The pervasive and high levels of motivation are reflected in the comments volunteered by interviewees.

'I am very interested in auditing the work we do. I am also keen to base our practice on good clinical evidence.' [CN: S&T]

'I personally feel the Internet is the best thing that has happened to this planet.' [HV: WS]

'I am quite happy to learn anything you know. I'd love to expand my expertise, you know, you've got to go with the flow you know. That's the way things are going.' [AS: Corn]

'I was offered it [training] through the surgery...there were four or five of us. I think everybody wanted to go.' [PCC: Corn]

'I am quite happy to fiddle around with it and I have learnt quite a lot myself.' [PAM: Corn]

'It all stemmed from my children going to school and I thought, this is becoming a digital world...so it sort of gave me initiative to go and buy my own computer and this is where it stemmed off, and through reading the manuals of installing my own computer I read about databases.' [N: Leics]

'You pick things up as you play around. I think if you are interested and you want to find out, you'll go and get it.' [HV: SH]

6.2 Training issues

Interviewees were keen to attend training sessions provided by the library and information services at the various sites. Some of these sessions were part of those being evaluated in VIVOS and others were instituted as part of day-to-day library services' provision. From across the sites consistent themes emerged appertaining to training and it was possible to identify five key areas, these are: preferences for hands-on computer and information skills' training, streaming training groups according to skills' level, need for continuing support post training, monitoring and promotion of cascading of skills, and the need for a co-ordinated training strategy.
6.2.1 Preferences for hands-on computer and information skills’ training

The e-STABLISH training in Salford and Trafford was unique amongst the sites surveyed in that it was a concentrated programme spanning three days. At the Cornish site the training sessions were of shorter duration although follow-up sessions were available. This mode of training is a closer reflection of conventional library IT training programmes.

In busy medical environments health professionals have a very limited window of opportunity to attend training and because of these limitations trainees need to attain maximum effectiveness from the training and time available. For this reason the respondents expressed widespread support for direct hands-on training. Some of the participants were starting off from a very low level of IT skills and required experience in using keyboards and basic computing concepts. These people appreciated the opportunities to overcome the initial hurdles of starting up a computer and fears associated with computers. For some respondents the benefits came through an introduction to the wide range of electronic resources available. Others appreciated the opportunity of being shown, and being able to practise more sophisticated literature searching and Internet techniques. The very nature of practical hands-on training gave people confidence to go away and test their new skills independent of a trainer.

‘The ones in actually using the computers was great.’ [HV: S&T]

‘Well, of course it was all useful to me because I hadn’t you know, I hadn’t done any of that before, so, for me the basics right through were useful.’ [CN: Corn]

‘We though it was really good for the Internet skills, what you want and where to find it.’ [AS: S&T]

‘What I found particularly useful was the critically appraising a paper, which…again it was a sort of hands-on experience.’ [PCC: S&T]

‘I think this was kind of, the course here was almost a stepping stone in that I then took it away, and kind of did more at home…I think it was kind of an initial building block from which I could start looking at things.’ [PAM: Corn]

6.2.2 Streaming training groups according to skills level

Although participants were positive about the training they had received, the issue of skills’ mix was raised by some respondents. Since there is a very diverse range of IT experience and information skills, information professionals need to come to grips with this issue to maximise efficiency during training sessions.

At the VIVOS sites where training was the main focus of the evaluation, two different approaches were followed. Through the use of questionnaires, trainers in Cornwall made efforts to identify people's IT experience prior to the training. However, in practice the logistics of providing training meant that it was difficult to match the variety of skills and the approach taken was one of sensitivity to the composition of each group at individual training sessions.

In Salford and Trafford the training was related to a structured roll-out of IT equipment for primary and community care practices. A multi-disciplinary team from each practice was invited to attend the training sessions. This resulted in a good forum for exchange of ideas and team-building but a wide range of skills’ levels and information needs. Whilst some respondents who had wider IT experience benefited from the opportunity to see how other people handle information problems, they however felt frustrated by the pace of the training session. Others with less experience would have preferred an approach more fitting to their needs in terms of content and speed of delivery.
...it's very difficult when you're doing that sort of training because you've got people there that are at different levels, you know, for somebody who's fairly computer-friendly you don't need to know how to log on and everything, you just want to get in and do a search don't you? But there's not time for that because time's spent with people who haven't held a mouse before..." [CN: Corn]

'I thought it developed close links between the different sources of where people came from because it was a skill mix of people.' [PCC: S&T]

'It is also nice to see how other people go about it...which is interesting because sometimes you don't think of it that way.' [CN: S&T]

'I said, "so you didn't find the course any use to you?" She said, "No, it was like over my head" and it was over mine really.' [CBM: S&T]

'So I think they had to do it the way they did it to address different members and different learning needs because there were a lot, a few in our group from our surgery, that had never done anything in research, so if they'd done the course to suit me it wouldn't have suited them.' [DN: S&T]

### 6.2.3 Need for continuing support post-training

Respondents in Salford and Trafford and Cornwall raised the problem of time-lag between undergoing training and the availability and full functioning of IT equipment in their place of work. Many people only perceive a need for IT training when participating a work-related or Continuing Professional Education course. However, the two rarely dovetail and if training is received prior to a course, acquired information skills are forgotten when the time comes to put them into practice. Both of these sets of people identify a similar issue, that of the need for ongoing information skills’ training courses. Equally, others mentioned the benefits having the opportunity to put skills into practice, then receiving refresher sessions to ask for guidance on specific issues identified during their independent use of resources. This reflects the problem of not knowing what you need until you need it!- termed the Anomalous State of Knowledge by Belkin (1980).

'...but then when we had the training we hadn't even got the computer...it was quite a bit further down the line after we'd had the training when it actually became useful to use the computer.' [CN: Corn]

'...when I did go on a course a few months later there was a lot I had forgotten.' [N: Corn]

'I think it would be more helpful to go and actually do the session, and then go away and practise and then come back, and then you can sort of say where your pitfalls are.' [CN: S&T]

### 6.2.4 Monitoring and promotion of cascading of skills

At Salford and Trafford it was incumbent on participants to cascade skills leaned in training to non-attenders from their units. In practice this was not as extensive as had been intended by the e-STABLISH team although some cascading was successfully achieved. The reasons given for not cascading were a lack of confidence, and logistical problems relating to a lack of equipment. In Cornwall there was no formal policy relating to cascading of training skills but five practitioners confirmed that they had been able to help colleagues search for information of pass on advice. To the reasons given for non-cascading by Salford and Trafford interviewees, those in Cornwall added lack of time, or absence of opportunity because training had only recently taken place. Where cascading
did take place in Cornwall it was often a question of helping individual colleagues carry out a search or as a consequence of practice involvement in Vocational Training. The lessons learned from this experience indicate that if trainers do intend a cascading process to take place they should monitor it and perhaps actively pump prime it in the initial stage. Continued support for those cascading skills would also be a benefit.

'Yes, I did a teaching session with the team.' [DN: S&T]

'I didn't, I wasn't confident or competent enough to train them after, you know finishing the training sessions.' [CBM: S&T]

'I think the other staff that have been trained within this system had been asked to cascade the information when this system is up and running. And, of course, in the meantime I think that there has been such a gap that things have been forgotten.' [HV: S&T]

'Yes, I mean locally I've been able to say "and this is how you get into this field".' [CN: Corn]

'I wouldn't feel proficient enough to do that to be honest.' [PAM: Corn]

'No, I'm supposed to [cascade training] but it was, I think it was last summer and we were short-staffed, and I haven't really had the chance to.' [AS: Corn]

'I'd need to do a refresher because…I hoped that we'd at least have that Internet up and running…my skills have decayed and basically now I need …to learn more skills or relearn skills.' [PCC: Corn]

6.2.5 Need for co-ordinated training strategy

'There are obviously needs for greater education in research skills and information technology skills. While this may be occurring for new recruits, there may be a need for continuing professional development to address these areas of concern.'

Upton, (1999)

It is hoped that the lessons learnt can be incorporated into future strategies for training since, as the above quote which refers to training needs amongst PAMs illustrates, there is a great need for training programmes, particularly amongst practitioners who were not able to benefit from training in research- and IT-skills as part of their original education. Trainees are appreciative of the training courses provided by libraries, and other interviewees who had not attended training courses were very keen to do so. Participants felt that maximum gains could be achieved through a fully co-ordinated approach with a structured post-training help service and possibly, refresher and upgrading sessions.

6.3 Benefits of outreach services in daily practice

It is difficult to draw comparisons between the six different sites, however all of the outreach services contribute to the transformation of information into Evidence-Based practice. This can be seen in the application of skills acquired through training and also in the use of actual information resources via outreach services.

As discussed in the methodology section, an advantage of the qualitative approach through in-depth interviews is that it allowed the researchers to piece together a comprehensive picture of the daily reality of people’s working lives. Health personnel are striving towards the implementation of Evidence-Based practice and standardised care. These innovations are fostered by teamwork and the production of guidelines and protocols, which are increasingly becoming a necessary feature of clinical practice.
Generally, the survey participants had a positive perspective towards these strategies. However, there are implications for working patterns in their comprehensive application.

The reality is that health professionals are under significant pressure from many different angles. The culture and expectations of the NHS and its personnel are constantly evolving, as medical technology improves so do patient expectations within an environment where resources are stretched. The challenge is to meet these expectations from within the constraints of available resources. A major implication of this is that every clinician's time must be used to its maximum efficiency.

The revolution in, and roll-out of IT offers instant accessibility to a wide range of information regardless of work location or rank. The benefits of this are manifold, not least the saving of an individual's time and effort. Another advantage is the potential for nurturing an interest in research amongst groups who have previously had less opportunity to develop these skills. Hitherto the professions allied to medicine have been dependent upon the mainstream medical and nursing resources for information.

"The professions allied to medicine have had a relatively late entry into the Evidence-Based practice and clinical effectiveness movement which can probably be traced back to the traditional view of therapy as skill rather than research based."

Upton and Lewis, (1998)

The PAMs are increasing their profile and visibility and are increasingly recognising the need to generate their own base of research upon which to inform their practice. In turn, the different arms of health and medicine are able to work together to achieve an integrated and one-stop approach to patient care.

The outreach services evaluated by the VIVOS project all contribute to the saving of individual's time. In Cornwall, and Salford and Trafford the VIVOS study focussed on the provision of training to primary care health professionals, this increased their information and research skills' base and provided the opportunity for cascading to non-trainees. Such training courses are important feature of moves towards integrating the use of Evidence-Based resources into daily practice. Attending the courses does take time out of direct patient care and does require individual motivation. However, ultimately the outcome of an individual's personal investment is a more effective and rewarding use of resources leading to time-saving and an increased quality of research and patient care.

The Bury St Edmunds and South Humber services provide locally focussed and easily digestible information to hospital and/or community practitioners. Participants identified the benefits of rapid access to information resources with this scope. These services are tailored to the needs of practitioners in these areas and make efforts to meet the needs of health professionals through monitoring topics of local interest and including practically useful features such as professional profiles of hospital consultants to facilitate patient referrals. This illustrates an added value of both these initiatives: the fostering of teamwork and promotion of inter-disciplinary communications.

At Leicester, North Thames and Exeter projects provided access to a range of electronic resources such as CINAHL, MEDLINE et cetera to health professionals who registered for passwords. The great advantage of this approach is that it enables twenty-four hour access to resources from Internet connected PCs. This gives practitioners flexibility to access resources at times that suit their working patterns and from convenient locations, even home.
6.4 Drivers of information use

It was seen that in most cases information-seeking is driven by specific needs. Precipitators of information-seeking identified by respondents across the VIVOS sites included:

- Educational requirements
- Patient care
- Research
- Review of practice procedures
- Preparation of guidelines and protocols
- Audit procedures

Provision of services in itself is not sufficient to stimulate use, health professionals have to be motivated by a particular need before information-seeking is triggered. In many cases this is closely related to lack of time, logistical issues such as the lack of an available and fully-functioning PCs, and personal confidence in IT skills. This is unfortunate, in that spasmodic use undermines confidence and can lead to further training needs as users forget the skills they initially acquired or find that interfaces have changed in intervals between use.

‘But if you don’t use something for a long time, you think you’ve got the hang of it whilst you and there and then suddenly you come back to it on your own and then it’s kind of, Oh my goodness, I don’t actually remember what I thought I did!’ [PAM: Corn]

6.5 Promotion of information services

The scope of the study did not allow for much investigation of non-users of services since interview and questionnaire samples in most cases drawn from registered users and trainees on IT- and information-skills courses. So participants are therefore not necessarily typical and may be from among the more active users of library services. This, may explain why in general awareness of library and information services was high amongst those surveyed.

Although most respondents were not routinely asked about their awareness of the information services available to them, perceptions about specific services became apparent during the study. From the data three categories of participants emerged: enthusiasts, discoverers, pre-germinators.

The enthusiasts displayed levels of high motivation and awareness of services. Some suggested that libraries should increase awareness of facilities amongst other practitioners whilst others have actively promoted services within their work environment.

‘I realised that there was a resource there that I could use, and I have used it again and again since then. But I needed just that one clip to find out that they can do something that other people can’t, and people need to know that. And I can’t go around other surgeries and spread the gospel…people need to be told somehow. That there is a resource there, it is a brilliant resource and it must cost the health authority thousands and thousands to keep it up-to-date, but do people use it? ….So I, I think they need to sell themselves a bit more, do a bit of a PR job themselves.’[CBM: S&T]

‘I found during the period of time in the last six months, six months to twelve months, I found that a lot of colleagues don’t actually know much about database. So what I did was, having been in touch with the library and having used it myself, I have in turn sort of
spoken to my senior manager and I think it came to light to her that not many people
...know how to use, and she has in turn initiated group sessions...of going to the library
and people being trained up to a standard.' [N: Leics]

The discoverers identified that exposure to the outreach services had significantly
widened their horizons in terms of both actual resources available and the expansion of
personal contact-networks.

'In fact, I was absolutely floored that there was so much information that I could actually
then access onto the computer, you know, which at times is brilliant. [CP: Corn]

'...until we had that training, I had no idea that the resources were available...I happened
to come across it through my training.' [CN: Corn]

'One of the things I have gained from the course I suppose that wasn't the main agenda is
that I have met the librarians and I know who they are. And, for example, with me having
students I have...been able to ring [librarian]...and say "Is it OK if this student comes up
and introduce them so that they can use the system"...and I didn't know anybody before
we did the training and so I might not have felt quite so...confident in doing that.' [CN:
S&T]

The pre-germinators were unaware of available services, or in some cases did not realise
they were entitled to access them. This is not necessarily because they have no
information needs, and it is possible that wider promotion of information services by
library staff could stimulate growth in their awareness and motivation. An unanticipated
outcome of the VIVOS study was that it in some cases it helped awaken interest in some
of the resources.

'No, I haven't personally looked at it, but if my admin manager was here she'd probably
have hit me by now and said "we have go the Pink Book, it's by the front desk and we use
it all the time, and it's only out of ignorance that you don't".' [CN: WS]

'I think they need to raise their profile with community staff, because I think people are
under the impression that unless you are actually working in the hospital you can't access
it.' [CN: Corn]

'Never been made aware of it.' [Questionnaire respondent: Leics]

6.6 Information support

Across the VIVOS sites there was strong support for the work of health libraries and
heavy reliance on library staff for assistance with literature searching. Respondents
expressed appreciation of the support given by librarians, who were generally considered
helpful and approachable:

'...the staff there are really really friendly, they're very, excellent. I think they're brilliant
librarians.' [CP: Corn]

'Well, if I have got a query I always ring [librarian] and she is always extremely helpful and
very efficient...[CBM: S&T]

'I have found them very helpful...whenever I have asked anything they have always been
fine and they have always given the information by a set date.' [CP: Leics]

'There's always somebody there to teach you what to do.' [N: WS]
'I have actually rung other people to actually do the literature searches for me….and [library staff member] is very very good.' [CN: SH]

Several interviewees mentioned that they felt more confident after training sessions knowing that they could turn to librarians for further guidance. The concept of continued post-course support has been identified as a key feature of a successful training programme and emerged as an important theme as survey participants revealed their feelings about levels of information support. Encouraged to expand on these feelings and to think about how existing services could be improved, respondents made many suggestions, often specific to the environment at individual sites. Certain recurring themes did emerge however to form a 'wish list', though unfortunately many of the issues raised on the list are beyond the direct control of librarians:

**Immediate access to support at the time problems occur**

'...if I have a problem with finding something, and I think it must be out there then I would like to be able to phone up a librarian, and say at least, "what am I doing wrong, can you help with this?".' [PCC: S&T]

'...maybe a trouble-shooter...even a telephone-access trouble-shooter while you are actually at the computer as opposed to somebody, you know, after the event has happened.' [PAM: Leics]

'...face-to-face support initially, perhaps email and telephone later...when I am more confident.' [DN: S&T]

**Improved IT facilities**

'If you haven't got the equipment then there's no point in having the training.' [CN: SH]

'We would like kit that works!' [CN: S&T]

'Nothing's useful unless we have got the technology in the office.' [CN: Corn]

'I'd have to go to the computer room...when you can get in there, it's just full all the time, it's a problem really.' [TP: WS]

**Increased access to full-text documents**

'More full-text please.' [Questionnaire respondent: Leics]

'It would be really lovely if they had full text.' [PAM: SH]

**Easy-to-follow instructions for using electronic resources**

'An onscreen “idiots” guide...exploding trees don't mean anything to me!' [RM: Leics]

'I think now we've got the computer here it would be nice to have all the information on how to do all the searches because we haven't got it. The computer's arrived with all it's manuals all wrapped up in cellophane there, but apart from that we haven't got anything on any of the icons that are on the desktop, nothing, so yes, it would be useful to have a pack, or whatever it would take, on how to search, use Library services and what have you. I know how to do it but none of the others do. Because they haven't had the training, and even if they had they wouldn't, it would have been that long ago they wouldn't have remembered I don't think.' [CN: Corn]
Quicker access to the articles themselves

'Links to be able to order articles not available locally.’ [Questionnaire respondent: Leics]

'It's a slow process you know, because then they have to get the relevant articles and if they haven't got them they have to send to other libraries for them. So it can take a couple of weeks or even longer to get the material you want.' [CN: Corn]

Easier access to materials for particular specialisms (sometimes the casualties of strategic reorganisation as collections are moved to other libraries)

‘...a lot of the medical stuff is, and nursing and midwifery, is down at the [town] library…and unless you're actually doing a course you can't access that.' [CN: Corn]

'I think from the medical side of things it is probably very good, but for my specialty in particular I think it is limited.' [SCP: Leics]

7.0 Conclusions

The VIVOS study used a qualitative approach to explore outreach services provided by health libraries at six different sites. In-depth interviews and questionnaires were used to survey health professionals from a range of job types from both hospital and community environments. The study focused on specific aspects of each outreach service under investigation and there were two main areas, the evaluation of training provision and the use of Evidence-Based resources. Although many of the findings have specific relevance for each of the sites (see Part Two for individual site reports), common themes have been identified and a broad picture of health professionals’ attitudes and information needs emerges.

There is widespread motivation amongst health practitioners for implementing Evidence-Based practice and the role of information resources in facilitating this. The benefits of instant access to easily digestible, relevant and timely sources of information have been shown to be appreciated by many of the participants throughout the study. There is particular support for information resources that can offer a combination of the following attributes:

- Easy access to full-text documents
- Access to information sources at any time from work or home
- Easily accessible IT and information support
- A structured training programme with regular updating/refresher sessions
- Targeted information to meet local needs or those of specific professional groups
- Preference for a topical and focused yet newsy approach in hardcopy health information bulletins

In the current environment healthcare practitioners are under considerable pressure and at risk of being inundated with information. Outreach services such as those surveyed here have an important contribution to make in equipping practitioners with the necessary skills to critically appraise and exploit the resources available, whilst simultaneously providing access to timely, relevant and topical information with a sound Evidence base.

However, the provision of these services can be a considerable challenge and require significant investment by libraries in terms of time and resources spent to ensure:

- Seamless and structured training
- Constant monitoring of user needs
- Maintenance of content for topicality, timeliness and relevance
- Success in keeping ahead of the field
- Active promotion of services and training programmes
- Adequate IT infrastructure to support the electronic information resources

As the benefits of outreach services become more apparent and necessary, more and more health libraries will have to grapple with the challenges identified above. The shared experience of the sites in the VIVOS study suggest that the following factors are critical to the successful implementation and running of outreach projects of this type.

- a ‘superordinate’ goal (Pinto et al., 1993) or ‘vision thing’, which can be shared with other departments or units or be largely the property of the library.

- willingness to prototype – a approach which follows the stages of testing, evaluation, taking stock, and moving on.

- flexibility in implementation. The IT situation may change with increased funding but the problem of lack of standards, delays in hardware and network implementation in the NHS mean that some ‘Scenario B’ plans are essential.

- continuous support for users.

- consistent support for the library team at the home base, including those not directly involved in the project. Their awareness and training needs should be identified and met.

- recognition of the educational role of the project – and the library service. This is a ‘lifelong learning’ agenda with the users, not simply training.

- communication, collaboration, and co-operation (Urquhart et al. 1999), between all project managers, library and computing staff, as well as the information users are key elements in the successful implementation and continuation of any project.

The essence of the outreach projects is to ensure that health professionals have access to the information they require at the point of need, and to guarantee that they have the necessary research skills to locate, appraise and apply this information in practice. The success of the projects rests with the ability of librarians to extend these services to personnel from all backgrounds and job categories. For a fully integrated delivery of healthcare provision it is necessary for everyone to play a part in the moves towards Evidence-Based practice. This can be an empowering and rewarding experience for practitioners as encapsulated in the comment below.

'And for me it was such a great achievement, to roll all that together just seemed like something that I would never ever, ever be able to do……Because I am a doer, I am not a writer or a thinker, I am a hands on person really, so it was a great achievement really.'
[N: Leics]
References to Part One


South Thames Regional Health Authority (1994) *Journey into the unknown: health care change and public involvement*. London: South Thames Regional Health Authority (NHS Executive South Thames).


Bibliography


PART TWO: Individual site reports
Preliminary Report for Salford and Trafford Site

Value and Impact of Virtual Outreach Services (VIVOS) Project

February 2001
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Abstract

The e-STABLISH project (1998-2000), run by Salford and Trafford Health Authority, Salford Trust and Trafford Trust, is one of six projects investigated by the Value and Impact of Virtual Outreach Services (VIVOS) project. The aim of this research is to evaluate existing health information outreach projects. It will use the findings and the cumulative experience of information professionals at the research sites to inform project management guidelines for the successful implementation and application of future programmes. A range of research methods was adopted with a view to identifying those that are most appropriate to evaluations of this nature. At the Salford and Trafford site, research was focused on a three-day IT and health information skills training course for community health practices participating in the wider e-STABLISH project.

A triangulation of methods was achieved through semi-structured interviews, vignettes, and a postal questionnaire. A mix of community health professionals from all participating practices were surveyed. Qualitative data methodology was the preferred approach because in-depth analysis was required and data handling was facilitated by the use of the NUD*IST 4 software programme. The structure of the report parallels the themes drawn out during data analysis.

At this preliminary stage the main findings indicate overall satisfaction from trainees, with particular appreciation of the practical sessions offered. However, at times the trainees found that the successful consolidation of skills was compromised afterwards by logistical barriers. Motivation and enthusiasm amongst health professionals at the practices were found to be high. Many respondents expressed a desire for an expansion of the training provided by e-STABLISH. There was general agreement that the skills developed during the training were valuable in the progression towards EBM and lifelong learning.

Acknowledgements

The VIVOS research team is grateful to all the Salford and Trafford staff who participated in the evaluation of the e-STABLISH project. Without their participation in the survey work there would be no evaluation. The e-STABLISH team provided invaluable advice and support, which is gratefully acknowledged. The team is indebted to Re:source for funding the VIVOS project.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AS</td>
<td>Administrative Staff</td>
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<tr>
<td>CBM</td>
<td>Community-Based-Management</td>
</tr>
<tr>
<td>CN</td>
<td>Community Nurse</td>
</tr>
<tr>
<td>CS</td>
<td>Community Staff</td>
</tr>
<tr>
<td>DN</td>
<td>District Nurse</td>
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<tr>
<td>EBM</td>
<td>Evidence-Based-Medicine</td>
</tr>
<tr>
<td>HV</td>
<td>Health Visitor</td>
</tr>
<tr>
<td>ISDN</td>
<td>Integrated Services Digital Network</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
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<tr>
<td>PAM</td>
<td>Professions Allied to Medicine</td>
</tr>
<tr>
<td>PCC</td>
<td>Primary Care Clinician</td>
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<tr>
<td>PHCT</td>
<td>Primary Health Care Team</td>
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<tr>
<td>RCT</td>
<td>Randomised Control Trial</td>
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<td>VIVOS</td>
<td>Value and Impact of Virtual Outreach Services</td>
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1 Introduction

1.1 VIVOS aims / objectives

VIVOS was a one-year project running from February 2000 to the end of January 2001. It was conducted by the Department of Information and Library Studies, The University of Wales Aberystwyth, and received funding from Re:source - the Council for Museums Archives and Libraries. The research team was based at Aberystwyth and collaborated with information professionals from Cornwall, Suffolk, Leicester, South Humber, Devon, North Thames and Salford and Trafford to assess the Value and Impact of Virtual Outreach Services based from health library services.

The project had three main aims. The first two related to work carried out by health libraries to promote ease of access to information sources, particularly amongst primary-care and community staff. Outreach services should promote access to information resources for all healthcare staff and it is therefore important to establish a toolkit of methods for assessing the effectiveness of the services themselves and of associated training programmes. The VIVOS definition of ‘Virtual Outreach Services’ was fairly broad and covered any services that enable healthcare professionals to access pertinent information without physically coming into the library premises. In most cases this equates to electronic information sources but at one of the VIVOS research sites it involves the dissemination of a hardcopy digest of topical evidence-based issues.

The third aim of the project was suggested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via the People's Network. This proved challenging since the People's Network is not yet established enough for an evaluation of its role in supplying health information to the public. The project team therefore decided to concentrate on locating schemes that are currently operating and on investigating healthcare professionals' attitudes to provision of health information on the Internet. The researchers also looked at links established between the librarian at one of the VIVOS research sites and local public-library staff and observed training sessions on using evidence-based sources.

The five original sites selected for participation in the VIVOS study were chosen because their outreach services were already established. This had the advantage that a certain amount of baseline data was already available but also gave the opportunity to investigate how to maintain the momentum of projects beyond the initial enthusiasm. The sites were also selected because they provided a variety of project types and environments. Two additional sites were included once the project was underway. A specific aspect of each project was identified for evaluation by VIVOS:

- **Salford and Trafford** A three-day training programme, for the e-STABLISH project.
- **Cornwall** A database training programme run for community staff by Cornwall Library Services.
- **Leicester** A feature of the Trent Futures project giving remote access to NISS Biomed databases through the issue of Athens passwords.
- **Bury St Edmunds** The Pink Book developed by library staff at the West Suffolk Hospitals' NHS Trust, originally as a directory of information for primary care clinicians.
- **South Humber** The bulletin 'evidence matters!', a regular digest sent out to local primary-care and community staff alerting them to topical issues in clinical effectiveness and evidence-based practice. This investigation also looked at access to the CINAHL database and the information-related problems faced by nursing staff.
- **Exeter** The Website set up by Exeter Medical Library.
- **North Thames** Additional data analysis for an existing database access project.
This report is part of a set of preliminary reports produced for each of the participating sites, primarily to give an early indication of the results of each site evaluation. Work is still continuing on the data analysis and the full project-report will discuss common themes and issues raised across the site evaluations. The final report will draw upon the collective experience of the information professionals from the sites, along with the observations of the research team, to produce a set of guidelines to help other information professionals wishing to develop their own services. The results of the investigation into attitudes towards health information on the Internet and provision of health information to the public will also be presented at a later stage.

1.2 VIVOS and the e-STABLISH training programme

During the e-STABLISH training programme, groups from primary-care practices attended a three-day training session designed to introduce them to the principles of evidence-based healthcare. A list of topics covered in the sessions can be found in the Appendices. The VIVOS evaluation has attempted to ascertain whether trainees found the course appropriate and useful, whether they have put what they learned into practice, and whether the training has been cascaded to other members of the practice.

The training programme was developed to supplement a two-year pilot project (1998-2000) run across the Salford and Trafford district with the aim of providing primary-care and community healthcare staff with access to evidence-based sources from their practices. The project encompassed the installation of PCs at the 12 selected sites along with ISDN lines and routers. Access to the evidence-based sources was via an active desktop. (Farrell et al., 1999) The project team consisted of library representatives from the Health Authority, Salford Trust and Trafford Trust, with further representation from the IT and Clinical Effectiveness units.

Suitable practices for inclusion in the project were identified following a survey of practices in the region which judged prospective sites against criteria including proven enthusiasm for evidence-based practice, and involvement in other local initiatives.

2 Methodology

2.1 Sampling

Twenty potential interviewees were selected at random, though the sample was stratified to ensure a spread of job roles and to include all participating practices (with the exception of one where representatives were unable to complete the training programme). Prospective interviewees were contacted by the research staff with a view to arranging an appointment and, in all, 17 people agreed to be interviewed – ensuring a cross-section of job roles and encompassing all eligible practices apart from one where the representatives asked to receive postal questionnaires instead (Appendix 2).

Where possible, face-to-face interviews were conducted, and telephone interviews were held when it proved impossible to arrange a mutually agreeable time.

At the request of site librarians, four interviews were conducted with health professionals who did not attend the e-STABLISH Training Programme, to determine the extent to which training might be cascaded by attendees. Since there was no list of non-attendees it was more difficult to identify potential interviewees and hence a larger percentage of interviews for this sample was conducted by telephone. It is acknowledged that this latter technique is not always as comprehensive as a face-to-face interview.

Postal questionnaires were sent to people who had attended the training programme but who were not selected for the interview sample, or were unavailable for interview when approached. Forty-three questionnaires were sent out, 19 replies were received, but two
of the 43 attendees were found to have moved from the area. The response rate was therefore 46% (19/41).

2.2 Methods employed

A qualitative approach was followed using semi-structured interview schedules and these were administered at the interviewees' place of work. Where appropriate, (and where time permitted) the interviews were supplemented with vignettes (Chell 1998, in Symon and Cassell). A vignette is a hypothetical scenario used to ascertain a respondent's approach to solving an information-seeking problem. As far as possible the vignettes were designed to have relevance to the interviewees' job roles and to reflect topics of current health interest, for example issues raised in the mainstream medical press over the last year. The interviews and questionnaires were designed in consultation with the site librarian at Salford and Trafford Health Authority. Copies of all survey instruments are included in the Appendices.

2.3 Chronology of site survey

In-depth interviews were conducted throughout June 2000. Forty-three questionnaires were despatched in July and non-respondents were reminded during September 2000. The tasks of transcription and analysis were carried out between September 2000 and January 2001. Textual analysis was completed using NUD*IST 4 software.

2.4 Navigation of report

For the purpose of this report, the sites where interviews took place have been randomly allocated a unique identifying number between one and twelve. Individual respondents are identified by job category to protect their identity. The authors feel, however that it is important to attribute job type as this has a bearing upon an individual's 'world view' of their work environment (Checkland and Scholes, 1990; Mason and Willcocks, 1994). Details of job categories and numbers of survey participants are presented in the Appendices. Both interview and questionnaire responses have been integrated for the purposes of this discussion. This is justified as the questions asked in the interview schedule, and those asked in the questionnaire were very similar ensuring comparability of data [see Appendix for complete schedules]. Quotes that are used are verbatim.

The Results and Discussion Section corresponds to the emerging categories and themes from this process following the 'grounded theory' approach developed by Glaser and Strauss (1967). These concepts are used as a framework for this report, rather than simply listing responses to the questions. The sub-heading structure is designed to facilitate ease of reference to specific issues and themes.

Following this interim report there will be a formal discussion of the preliminary results with the site librarians to further validate the findings prior to preparation of the final report.

3 Pre-training and work environment

The problem situation concerned the effectiveness of the training and the impact, if any, on clinical practice. From qualitative analysis of the interviews and questionnaire, the following categories emerged as a framework which encompassed the possible factors which affected both the effectiveness of training and its impact.

- Work environment
• Barriers to successful information-seeking

• Motivation and enthusiasm

3.1 Work environment

3.1.1 Resource limitations

Respondents identified pressures relating to resource and funding issues as one of the primary influences on their working day, forcing work to be done in the evenings at home and this is reflected in the following comments:

'Because you've got to run a service at the end of the day ........ at the moment everything comes down to staff levels and resources.' [Site 8-DN]

'Mm, solely because we've found we don't have the time in working hours, with the best will in the world because of dashing, resources et cetera. We do still get the information but we've continued to do it at home.' [Site 8-DN]

Time costs and prioritisation is recognised as a common problem:

'And finding the time to find that person to do it. But it is time with everybody, isn't it?' [Site 12-DN]

3.1.2 The trend towards patient and family involvement in decision making

'Probably half of my time in clients' houses is explaining, you know what's wrong with them, what are the implications of that, you know what the possible treatments are et cetera so that they can make an informed decision.' [Site 8-DN]

As the above comment shows practitioners' time is consumed by the increasing need to involve patients and their carers in active decision-making about treatment and care management. This reflects the emphasis on the 'informed patient', and 'patient involvement' in government policy documents such as Information for health: an information strategy for the modern NHS 1998-2005 (Department of Health, NHS Executive, 1998). Practitioners' comments reflect these concerns:

'I think looking at a different aspect as well, the carers' perception of healthcare and knowledge is very important. I think it helps me to look at healthcare in a different way, and I think if we want to know how you know, carers' perception of healthcare, I think it is quite important as I say that we do encourage them.' [Site 12-DN]

'If they can find out information, information is everything isn't it? The more information the client has, the more he can come to terms with his condition and be able to sort of adapt, accordingly.' [Site 4-HV]

'.....I think it is a further step for relatives, instead of being very passive in consultants' interviews when they see the medics they feel, they are actually, feel they are part of that discussion.' [Site 4-CN]

However, it has ramifications for their daily practice, and their responsibility as an information mediator in setting time aside for this discussion, to give patients time to learn and take on responsibility for informed decision making.
‘...it is time consuming from our point of view, however it can educate people about things, hopefully it will you know give them some ………uh what shall I say, a little bit more ability to manage their own affairs if you like.’ [Site 10-PCC]

‘...absolutely, I have no divine right to information they don't have, and then I am quite happy to sit down with them and discuss it if there is stuff they don't understand, or terminology they don't understand.’ [Site 11-CN]

‘If patients, if patients come to me with information they have gained from whatever source I am prepared to discuss it........and if it is something which is more rare, and they need specific access then I will make every effort to find it.’ [Site 12-PCC]

However, encouraging patients to be better informed can seem hard to control at times – lifting the lid on unmet expectations:

‘But I think it is just trying to control the amount that they pull off really, and their expectations, ‘cos sometimes if they, if they read something they expect it to happen, well we might not necessarily have the resources to do what they expect. So, it is just trying to rationalise everything that they have read and put it into their context really.’ [Site 2-DN]

3.1.3 Increased burdens resulting from care in the community

‘So now the emphasis is on getting them home. The first day that they are admitted the discharge is planned so the emphasis is always on getting them home.’ [Site 2-DN]

Clearly the last decade has seen greater emphasis on care provided at home, rather than hospital (Evans 1990, in Savage and Robins), but that care needs to be orchestrated, with communication with social services increasingly important:

‘Well, visits are taking longer anyway because the dependency levels are very different now to what they were maybe even two years ago. Um people...hands-on care is dealt a lot with social services now, um we tend to do sort of like wound care and things like that and anybody who has got a high dependency level. And so we may not be doing as much hands-on care, but we certainly are supporting out there and that takes longer, you can’t just pop-in and say to somebody, you know, how are you today?’ [Site 2-DN]

3.1.4 Integrated and standardised care

Moves towards community care by necessity demand greater team-working, and a more uniform interpretation and delivery of treatment and care (Campbell et al., 1998):

‘We are quite a multi-disciplinary team.’ [Site 5-AS]

‘Yes, social services are very good they interact very well. We have shared care, we have some care where we go in and do whatever nursing tasks there are…and social services go in and do the personal care, and that works very well.’ [Site 2-DN]

This is mirrored in the contemporary emphasis on professional accountability and standardised documentation of treatment interventions and management of care:

‘Well, we spend quite a lot of time developing protocols and looking at evidence-based practice...we do practice that on a fairly regular basis.’ [Site 11-CN]

‘Um, all the things more like the effects of implementation, clinical governance there is a lot of that around at the moment.’ [Site 7-HV]
The principles of clinical governance outlined in *A first class service* (Department of Health, England 1998) emphasise the process of improving the quality of care, through ensuring local practice is in line with recommended standards, and taking appropriate steps to remedy any deficiencies through appropriate supervision and professional development.

### 3.1.5 Evidence-based-medicine

Patient care needs to be effective, and treatment choices seen to be underpinned by the best research evidence available:

>'As NHS clinicians address the obligation continually to review and improve personal effectiveness through evidence-based-practice and clinical audit' (Department of Health, NHS Executive, 1998).

>'Because all our work is supposed to be research based now.' [Site 2-DN]

For some practitioners, a reliance on the evidence (e.g. in the Cochrane database) seems an accepted part of professional practice:

>'We've always done evidence-based practice within our team.' [Site 8-DN]

>'It has been done by a lot of people and we, it would be impractical for GPs to, or nurses for that matter to go and look up every bit of information in terms of starting from their own you know starting from square one on their own, it has been done by others.' [Site 10-PCC]

Yet, the realities of scarce resources, funding and greater patient-expectations challenge the vision of practice informed by evidence-based research:

>'Some felt, well, this doesn't concern me, you know, I don't need evidence-based-practice and the GP was, well, you know it's good but having found the evidence would we be able to put it into practice with cost of medication et cetera you know all the things that we do worry about in practice. Because that's the difficulty isn't it? You can know the evidence-based healthcare but can it be introduced?' [Site 8-DN]

### 3.2 Barriers to successful information-seeking

More than ever before, practitioners require timely and accurate information but, ironically, seem to face even more constraints on meeting that goal. Various information barriers were identified by the participants in the e-STABLISH survey. Some were general problems (information overload, quality of information), some were organisational (information skills training), and others were concerned with the technical problems, which aggravate the problems of juggling priorities for patient care and personal development.

#### 3.2.1 Information saturation

>'I think that just we are getting flooded with information, and you, what's happening is that you just happen upon, uh you're lucky if you just happen upon some good stuff. There is some wonderful information out there, but you know just by chance you might get it. There is some very poor information that is very widely advertised, and it seems to rise to the top of the search engines though, for other reasons.' [Site 10-PCC]

>'One of the things that concerns me right the way through the NHS is that in primary care circulars come down and if somebody doesn't grab a hold of it, or the subject of the circular grabs a hold of them, it gets ignored. And it doesn't get taken up, it is only when you have actually got to reply to something that something gets done. [Site 6-CBM]
3.2.2 Skills deficit

'I find my students have more IT knowledge than me.' [Site 5-DN]

'I don’t know how to do that because I have been waiting for somebody to show me how to do it.' [Site 12-DN]

‘…if I come across a condition, or I want to find out what theory, what research has been done on any aspect of my work I would find it very difficult to locate it on any database…my inexperience, and my lack of knowledge about, you know, accessing information. I mean I would presume, I don’t know how other people overcome it.’ [Site 4-HV]

3.2.3 Infrequent use

‘But the thing is, if you’re not using something all the time you forget it.’ [Site 3-DN]

3.2.4 IT jargon

‘…and for people who are not highly skilled in IT I think that it is just jargon you become so frustrated that you can’t understand, you give up very quickly.’ [Site 4-CN]

3.2.5 Problems with IT facilities

'We have got the machine but there has been a problem with the modem, routers and no-one has been able to fix it.' [Site 11-AS]

‘…we did have a problem that the computer we had access to got stolen.’ [Site 7-HV]

'I think there was a difficulty because of the length of time between the training and the actual input of the e-STABLISH system in the unit.' [Site 4-HV]

3.2.6 Lack of organisational support

'The support is in as much as from managers to allow us time within work time to find the evidence…and the acceptance that that is part of our role and so we should, it’s as important to find out the evidence prior to going to the patient as it is to actually go and care for the patient and I don’t know whether that’s, the lip service is there but I don’t know whether it’s always… in practice shall I say!’ [Site 8-DN]

3.2.7 Lack of personal support

'I am such a novice and it takes me so long just to get through to Medline if you like; I find it too time-consuming and there is nobody around to help you.' [Site 4-CN]

3.2.8 Time and logistics

'Just to get on line because it’s other people’s equipment that we are using. They are looking at improving the stuff at the Trust but we can’t access it easily, it is a journey and I have to park my car, and it’s not easy to park my car.’ [Site 7-HV]

'But we are having to just do it off the four clinical terminals …which means that the nurses will have to either use a vacant surgery ‘cos during the day the surgeries aren’t full all the time….or use mine.’ [Site 6-CBM]
...we end up basically, end up looking for the information at night at home just as we always have done. Which we were hoping to do in work time because of this [i.e. e-STABLISH project] but we just haven't the time and resources and we also found that a lot of the time we go to use it you can't get through very well.' [Site 8-DN]

3.3 Motivation and enthusiasm

In spite of the obvious stresses of the daily working environment and the need to battle against information barriers the researchers discovered evidence from across the sites to support personal enthusiasm and motivation amongst participants. Frequently, this motivation pervaded the culture of the practice, and it was possible to identify the following list of eight key criteria relating to the phenomenon, which the researchers termed 'go-ahead practices.'

- Early up-take of IT
- Enthusiasm for training
- Webpage and email prescription service
- Adoption of EBM and protocols
- Patient access to information
- Involvement in training others
- Structured dissemination of EBM within practice
- Personal motivation in IT

The personal enthusiasm evidenced by the respondents’ acquisition of new information skills is illustrated in responses to questions three and four of the questionnaire and interview schedules i.e. Q.3: Why do you think your name was put forward for the training? / Had you expressed an interest in training? Q.4: Before you went what benefits did you perceive you would obtain from the training? For question three, the responses reflecting personal enthusiasm included the following reasons:

- Personal motivation (i.e. work-related or involvement in educational research)
- Team-working (including intention to cascade training)
- Future participation in evidence-based health activities

These direct quotes were taken from responses to question three:

'PHCT solidarity!' [Site 12-CS]

'I am very interested in auditing the work we do. I am also keen to base our practice on good clinical evidence.' [Site 6-CN]

'I am a graduate who has a keen interest in teaching therefore able to cascade relevant knowledge.' [Site 11-DN]
For question four, the respondents gave these reasons:

- Learning to use the Internet
- Improving research skills
- Searching medical databases
- Cascading training to others
- Improvement in IT skills and increased familiarity with IT jargon
- Critical appraisal and evidence-based healthcare
- Confidence in IT use

These quotes were extracted from responses to question four:

‘How to obtain up-to-date health and medical information quickly and on site.’ [Site 1-CS]

‘I felt I would become more confident with IT and the language used.’ [Site 5-DN]

‘How the Internet could be used for research.’ [Site 12-CN]

3.4 Continuing professional education

The requirements of formal professional education make information seeking a priority. In the EVINCE study (Davies et al 1997: 88) of the value of information to nursing continuing education, those doing course work tended to ascribe a greater value to the information provided. This is possibly a halo effect of the entire educational process aimed at greater clinical competence.

‘I have done in the past when I was doing my degree, I had reason then.’ [Site 12-DN]

‘I am doing a degree at the moment so it has been helpful to me.’ [Site 3-CBM]

‘Not as yet, I mean it probably will come because one of my colleagues is doing a degree course and she will need to be able to use the computer.’ [Site 3-DN]

‘I mean I am interested in doing a couple of courses which, I think I will find it really helpful, you know some things like the searching and things.’ [Site 7-CN]

4 The e-STABLISH training: Results and discussion

This section examines the comments, perceptions and feelings arising from respondents' attendance at the three-day e-STABLISH training programme.

4.1 Positive views and comments about the training

Many respondents described a range of personal and team-working benefits from participating in the training.
4.1.1 Practical nature of the e-STABLISH training course

Over fifty per cent of respondents gave positive feedback about the practical sessions, particularly appreciative comments were those relating to 'hands-on' computer experience:

'The ones in actually using the computers was great'. [Site 7-HV]

'We thought it was really good for the Internet skills, what you want and where to find it.' [Site 5-AS]

'Enjoyed them and found the practical sessions very useful.' [Site 5-PAM]

'Well-informed.' [Site 3-CN]

'Good, but too short.' [Site 5-PAM]

'I would have liked more of the practical.' And later, 'just that they weren't, it just wasn't long enough really, it was a good environment, we had good support, it was just that we obviously weren't asking the right question.' [Site 11-CN]

These latter comments referring to the brevity of the training sessions were echoed by many other participants. Participants highlighted the value of the practical sessions, but commented that technical and logistical difficulties prevented them from being as effective as they could have been. Earlier statements in Section 3.2 regarding poor IT skills and lack of confidence, though not of motivation, support the need for expanded programmes of IT training as indicated in the comments above. The practical session for critical appraisal was rated highly:

'What I found particularly useful was the critically appraising paper, which ... again it was a sort of hands-on experience.' [Site 12-PCC]

'I found the identifying of a problem, difficult in the first place, therefore that session helped me; to identify a problem before a problem arises is the difficulty.' [Site 6-CBM]

'I really enjoyed the paper appraising because we had plenty of time, and it done in a, you know separate groups and then we all had a discussion...it was really useful, so you know some of the more, more orthodox sessions were very useful.' [Site 12-PCC]

'Critically appraising a paper was illuminating and very helpful.' [Site 12-CN]

'I think the format they gave us for the appraising a paper, I think that was very good if you like, I mean I've done it but not in such a structured way myself. So I think that structure ...was good for people who may not be au fait with it..I found I can work through it in a logical way. So I think that was excellent.' [Site 8-DN]

4.1.2 Improving research skills

The e-STABLISH skills training assisted all levels of health practitioner in developing and refining their research skills. In turn, this corresponds with professional and educational demands and expectations such as life-long learning.

'Increased knowledge re: research and data analysis.' [Site 11-DN]

'Possibly a little, yes a little more conscious of who the papers have been written by and which population they have actually taken the information from.' [Site 11-AS]
‘There was two district nurses who found it very useful for their research and development.’ [Site 5-AS]

‘I know the nurse… uh, used it for her study as well, the practice nurse.’ [Site 3-CBM]

4.1.3 Improving personal networks

Less direct, but still beneficial outcomes from the course emerged as improvements to team-working. Comments let slip during interviews reveal that some bridge-building is always necessary, for example:

‘The community tend to be a little bit of a law unto themselves.’ [Site 6-CBM]

Positive references to team-building include:

‘I thought it developed close links between the different sources of where people came from because it was a skill mix of people,’ and ‘but it was nice to meet the other members of the other groups.’ [Site 12-PCC]

‘It is also nice to see how other people go about it because even though you know everybody goes about it a different way. Which is quite interesting because sometimes you don’t think of it that way.’ [Site 7-CN]

Furthermore, the training provided a good opportunity for the e-STABLISH team to make direct contact with the community health staff and promote Salford and Trafford information services:

‘One of the things I have gained from the course I suppose that wasn’t the main agenda, is that I have met the librarians and I know who they are. And for example, with me having students I have needed to send students who have got a piece of work to do and been able to ring [the librarian], or ring somebody and say, is it OK if this student comes up and introduce them so that they can use the system. ‘Cos, they may not be local and we get visitors from all over the country so to be able get them into, and I didn’t know anybody before we did the training and so I may not have felt quite so…confident in doing that.’ [Site 11-CN]

4.1.4 Timeliness and convenience of the training

Respondents mentioned the timeliness of the training because of their commitments to education, or their involvement in research within their practice:

‘In fact you know, in fact the e-STABLISH training came just at the right time because we were doing our literature search there and then, so it certainly helped then.’ [Site 12-PCC]

‘Databases - introduction to searching. Because I did some literature searching as part of my assessment for my asthma course.’ [Site 12-CN]

One participant commented on the benefits of holding training away from their usual place of work:

‘Plus the fact of going away from practice to do it means that you’re more focused on it, you know you’re not thinking oh! the next patient’s due in an hour, do you understand me? So you can focus on it better.’ [Site 8-DN]
4.1.5 Increasing uptake

There is an obvious perception for the need for widespread and comprehensive training as highlighted by this district nurse:

'A lot more needs to go on it, they'll have to go it!' [Site 8-DN]

5 Issues stemming from the logistics and delivery of the training

5.1 Inappropriate selection of course trainees

In the discussion after one recorded interview there were indications that one interviewee felt that inappropriate people had attended the e-STABLISH training programme, and that they would be unable to cascade the training skills due to temporal and logistical constraints within the practice. This person felt particularly strongly about this issue, although other respondents also raised it. The intention behind the training was to ensure that a range of people attended from each practice, but in at least one case the selection of participants seems to have been based on who was available rather than on who might benefit the most:

'Apparently it was at the discretion of the centre manager, and she choose the people she felt most appropriate and at no point were we asked whether we wanted to go or not, …..but in fairness to the management there were limited places...[and the interviewee continued], the people that I know that attended the training were the clerks... I mean both the clerks we have access to are part-time and they predominately work the morning and they also have other responsibilities within their role... both of them queried why they went on it…They didn't quite understand why they were selected.’ [Site 4-CN]

Of the four non-attendees, three said that they would have liked to participate in the course had they been given the opportunity or been available.

5.2 Skills mix and group dynamics

The decision was taken by the e-STABLISH team to organise groups by unit and to represent a variety of roles within each unit. The groups attending the course were therefore not streamed according to previous IT and research experience and interests. Though this has advantages, in that participants learned from one another [see comments in Section 4.1.3], there were indications that this approach also has its limitations: participants were starting off from different levels and hence the pace of training whilst appropriate for some left others either bored, or unable to keep up. Respondents did acknowledge the difficulties in providing training to suit a range of skills and job orientations. Nonetheless, some felt that the composition of the groups inhibited opportunities for individuals to attain the maximum benefits from the course.

'I said, so you didn't find the course of any use to you? She said, no, it was like over my head...And it was over mine, really.' [Site 8-CBM]

'So I think they had to do it the way they did it to address different members and different learning needs because there were a lot, a few in our group from our surgery that had never done anything in research so if they'd done the course to suit me it wouldn't have suited them…It's not a criticism of the course but I did find that a lot of it was repetitious, you know for me.' [Site 8-DN]

'It was very medically based, or doctor based, rather than community practitioner based.' [Site 7-HV]
Because the critical appraisal was done on a paper chosen by, I don't know it was [e-STABLISH team] or somebody within the group and it wasn't a relevant paper for a lot of people in the group. And you are always more interested to appraise something if it concerns you.’ [Site 8-DN]

The same practitioner suggested that the hierarchical tendencies prevalent in the daily work environment continued in the training situation because of the policy of retaining groups in their units.

‘Yes, in our situation it was very much [senior colleague] who had found the paper and would appraise and would present it, there wasn't very much teamwork.’ [Site 8-DN]

5.3 Trainees' expectations of the e-STABLISH course

On the whole trainees were motivated to attend the course and had a range of ideas about the skills the course would provide them with [refer to Section 3.3 for illustrative comments]. Obviously, the course could not match the diversity of expectations of the group members. Possibly, individual participants could have achieved greater satisfaction had a detailed pre-course syllabus been disseminated to them.

[Referring to hands-on computer experience] ‘I thought we were going to be doing more of that.’ [Site 4-AS]

‘It was just the criticism was to really, to sort of understand how this could work for us a lot better and to see, actually see it in operation, and I think that was lacking.’ [Site 11-AS]

5.4 Allocation of time to training sessions

Comments from respondents indicated that specific training sessions i.e. hands-on computing were too brief, but that too much emphasis was placed on the last day assigned to the delivery of presentations. When asked whether there were any sessions they would have liked extending, half of the respondents said they would have liked more practical computing sessions, and offered the following:

‘Definitely. The practical session on the databases.’ [Site 5-PAM]

‘Practical searches of databases could have been prolonged.’ [Site 3-PCC]

‘I think I would like to have more on the practical sessions.’ [Site 7-CN]

‘I think perhaps more, more time actually when we were in the university library searching.’ [Site 5-AS]

‘Yes. Databases - intro to searching and databases - practical session.’ [Site 1-CS]

‘More opportunity for searching databases.’ [Site 5-PAM]

The desire to have longer practical sessions also extended to the critical appraisal skills’ sessions and those dealing with statistics as expressed by these respondents:

‘Yes! Statistics I have always found very difficult.’ [Site 3-PCC]

‘I think I would quite like another one of the day three agenda,….. the statistical one.’ [Site 12-PCC]
I think really the critically appraising a paper was a lot to take on just in that short time. I think I would have liked more practice, it was quite a whistle stop tour of appraising the paper.’ [Site 2-DN]

‘Critically appraising different types of paper (i.e. not just RCT).’ [Site 12-PCC]

However, some respondents indicated a duplication of existing skills particularly with reference to day three:

‘Day three, I felt was too long’. [And later this respondent said,] ‘The impression that I got was that other people felt that it was a little bit of a wasted day.’ [Site 6-CBM]

‘I think those people there are quite happy giving presentations and felt that was probably a bit of a waste of time. Although, it is nice to see what the people had done. Yes, but as far as actually presenting I think, most GPs and nurses and managers probably do that, not on day-to-day basis but on a regular basis.’ [Site 3-CBM]

5.5 Style of delivery of training

After the initial training some trainees expressed the need to have an opportunity to practise and then have their skills consolidated and reinforced with a tutor at a later stage once they had identified gaps or weaknesses in their skills' base. This point is neatly encapsulated by one respondent:

‘I think I would like to have more on the practical sessions. I think it would be more helpful to go and actually do the session, and then go away and practise and then come back, and then you can sort of say where your pitfalls are,…because it all seems you know, whilst they are showing you actually on the day it all seems quite clear, but once you are on your own…’ [Site 7-CN]

5.6 Logistical and technical difficulties

Clearly, without a dedicated training suite based within the library the training had to be located externally. The trainers and trainees were therefore vulnerable to problems arising from availability and reliability of equipment plus logistical factors such as transport.

‘….because really a lot of us had problems with machines, the machines were crashing. By the time we got started and somebody had shown us, you only had an hour or so before it was time to finish anyway and still many of the machines crashed.’ [Site 4-AS]

‘We had a morning at one venue then we had to go to the university, OK it might not be, that because it couldn't be helped, but it was quite a lot of time wasting having to drive, park, move to a different venue and then we couldn't actually get into MEDLINE because the person that was supposed to come and do the teaching was delayed. So eventually he came late, so he had the password, eventually someone obtained a different password but basically we wasted so much time, and in a way when we came to the hands-on experience, it was so short….’ [Site 12-PCC]

‘I found the practical sessions the least helpful because there were some problems with the terminals and also because the lecturer turned up very late, therefore not enough time to cover work.’ [Site 12-CN]
6 Putting skills into practice

In response to the question, 'Have you consulted the handouts since the course?' well over half of those asked in the postal survey said, yes. Simultaneously, several of the interviewees mentioned their use of the handouts since the training, though often it was in the context of cascading training down to others. Respondents were equally positive when asked whether they had put skills into practice. Research and education (learning and teaching) seem powerful drivers (Figure 1).
Figure 1: Putting skills into practice: categories of use
6.1 Need for further training and support

Given the course participants’ comments on training as cited above, many indicated that further training is desired. All of the four non-attendees expressed a strong wish to attend the course, recognising the need to attend an IT and health information skills' training programme. Currently, many participants and non-attendees alike depend on colleagues and in some cases family members as well for support in information seeking.

'As I say, I couldn't do it but I mean one of my colleagues I am sure would do it for me if I needed or get me in at least and leave me to it...I can ask them and they're very helpful but if I needed a lot of work doing I would definitely need a course.' [Site 3-DN]

'I have done it with other people showing me or, as I say we have been promised that we are going to have some more training, but as I say it has not been forthcoming at the moment.' [Site 12-DN]

'Information, well my husband is very useful, he is, we actually do have the Internet at home which the kids get it for me, I know I should do it myself, or my husband does it. And then I will look up like question and answer centres, and quite often not so much since we have had it available at home, but at work he would pull off stuff for me. So I pull off stuff that I think is going to be useful for families and conditions....' [Site 7-HV]

Comments from the interviews (and some from people who had not attended training), and questionnaires revealed a need for further training in critical appraisal and the associated skills of literature searching and statistics (Figure 2).

6.2 Cascading training

The e-STABLISH team intended that course participants would disseminate the skills learned during training onto their colleagues. There was no organised plan for how this would be executed, the responsibility lay with individual practices to develop their own strategy. In practice, it seems to have been implemented on an informal basis, and the exceptions were those practices that support vocational training for GPs or students in other health-related areas. Example statements, endorsed by other respondents are:

'I have helped out some of the district nurses to do searches, and shown them how to do the searches using the handouts.' [Site 5-AS]

'Yes, I did a teaching session with the team.' [Site 8-DN]

'Due to workload I have been unable to use the materials, but now I have a new working colleague whom I can help with training by use of e-STABLISH.' [Site 3-CN]

'And we were able to use the system to its full for the students, and then we taught the students how to use it themselves and they were able to do research off their own bat as part of their training'.....'Because we wanted to become a good quality student / registrars' practice here and that was the kind of facility that they used it for.' [Site 6-CBM]

A number of people - including those who did not attend training, said that cascading did not take place consistently even within practices. The reasons given for this were a lack of confidence, and logistical problems relating to a lack of equipment. Just under half the questionnaire respondents affirmed this to be the case.
Figure 2 Expressed training needs
'I didn’t, I wasn’t confident or competent enough to train them after, you know finishing the training sessions.’ [Site 8-CBM]

'I don’t know anything about them [the handouts].’ [Site 12-DN]

'No, I have not had any access to these handouts, I have not seen any of them to be honest with you….I think the other staff that have been trained within this system have been asked to cascade the information when this system is up and running. And, of course in the meantime I think that there has been such a gap that things have been forgotten.’ [Site 4-HV]

'The nurse that came with me has passed on some of that information. But I don’t think they have formally been sitting down and reading through that, through the handout information. As I said, if we could, if we were properly networked we would spend time then getting them familiar with using it from their own nurses’ desks.’ [Site 6-CBM]

6.3 Steps required

Generally trainees expressed very positive opinions about the training programme itself. Despite the efforts of the e-STABLISH team and the obvious strengths of the project, some barriers (Sections 3.2.1 - 3.2.9) could inhibit further progress. The problems of IT co-ordination and provision of equipment are soluble, given time and money, but sustaining training support will be necessary to consolidate confidence and competence. The findings support the objectives of the education and training policy document Working together with health information (Department of Health NHS Executive 1999) designed to support the information strategy, and pinpoint the particular areas of most concern locally.

7 The broader picture of information use

The semi-structured nature of the interviews allowed respondents to expand upon their use of information and their approach to information-seeking. In some interviews this was fostered by the use of vignettes [see Section 2.2 for details of this technique]. This helps to see the change in information seeking behaviour in a broader perspective. Planning for future developments needs to take that broader perspective into account.

7.1 Continued use of traditional sources

In spite of the increasing availability of information accessible through electronic media many participants referred to the use of more traditional forms of information resources from their daily work practice. Examples of traditional sources used to locate health information are supplied below. Though as the first quote illustrates, professionals’ comments reflect considerable motivation to use electronic forms of information-seeking.

7.1.1 Referral to professional journals and other hardcopy sources

'As I say, at the moment we do a lot of reading you know we get our, it sounds old fashioned now doesn't it, we get professional magazines and things and we get a lot of research papers and things in there.'………..’But as I say, I think the way forward is to access the computer, get print-outs and take it away, isn't it.’[Site 3-DN]

'I would look in your professional magazines, they have a lot of professional magazines where things are printed with what everyone you know is doing in your profession.’ [Site 12-DN]
'We do have a community directory which is categorised under elderly say or young people and so they quite often give a directory of who's doing what ...... they're bound copies. Also usually the Directory of Nursing etc.' [Site 8-DN]

Participants also referred to their personal journal collections that have been established over time as a knowledge-base within their units.

'We have looked at fairly common areas. So therefore the journals that we normally get have covered those areas, so I have tended to go back and review our own journals. There has been a fairly substantial amount of those.' [Site 11-CN]

7.1.2 Personal networks

'So, ......is our clinical effectiveness co-ordinator, she is actually a [PAM] by profession, she is very, if she can help you she will. She is very, very helpful.' [Site 7-HV]

'When you go to conferences, different meetings, you are always networking and it is always very interesting what other people are doing, and the you set up that network don't you to go and speak to them, perhaps to go and work with them for a day.' [Site 12-DN]

'...you usually hear via grapevines on regional care executives...... And you can always use the resources of the Trust.' [Site 8-DN]

'...I mean we go through the reps a lot of the time, and get them to come in and they find the information for us.' [Site 7-CN]

'But we've developed knowledge together, like I've passed on what I've done, if they go on a course and they see something useful then they'll bring it back to a team meeting.' [Site 8-DN]

'Oh yes, other practice nurses, you know from other surgeries and things if we have not got the relevant data then we can ring them.' [Site 7-CN]

These comments support the earlier work, for example Urquhart and Crane (1994 p241):

"This pattern of use of informal sources confirms the accepted thinking that nurses will, unsurprisingly perhaps, use local colleagues as a source of information. Reliance is also placed on local specialists, whether nursing or allied health."

7.1.3 Use of professional organisations’ libraries and local health libraries

Some of the health professionals stated that they used other organisations as information services these include, The King's Fund library and that provided by the Community Practitioners' Heath Visitors' Association.

When asked about their views on local information support services, participants of the survey gave positive comments. There was overwhelming support for the library staff and appreciative comments about the information services provided in Salford and Trafford. These are illustrated as follows:

'Well, if I have got a query I always ring [library staff member] and she is always extremely helpful and very efficient.' [Site 3-CBM]

'The library at Trafford General is actually very helpful,.........I've never heard any complaints, and they, they are always willing to help you access the computer there.' [Site 2-DN]
‘But I would think that university libraries and health authority libraries are very good at providing information…and they are very helpful.’ [Site 4-HV]

‘The fact that the library lets us have full text, that is great.’ [Site 8-DN]

‘Also there’s quite a good newsy sort of, there was some newsy sort of stuff that was from the e-STABLISH project as well.’ [Site 10-PCC]

One respondent clearly thought that libraries would become superfluous. However, this interviewee’s experience shows that despite the advances of electronic media, the unpredictability of technology means that libraries still have an essential role as information providers

‘You don’t need a library if you have got that, the system…. Which was the way I was looking at it. I was trying desperately to go to the library for good books, and then we have got that on a plate - available. …..As I say, to start with and when we moved buildings, we wanted to move the system, we weren’t able to move the system.’ [Site 6-CBM]

7.2 Views on future developments

When asked whether they saw a role for a continued library-run information service the questionnaire respondents unanimously said, yes. Formats for the service requested, in ascending order were: telephone, email and face-to-face.

Interviewees were equally supportive, and their suggestions for possible developments included:

‘I would like to have available all the databases that are currently available. What might be useful is if ………some kind of front-end of e-STABLISH could be developed, a kind of link…that we would get more links to other stuff…..maybe more keeping abreast with modern developments, news items, …….the Medical Officer of Health Bulletins. Also to have some kind of local network where you would have access to common knowledge as it were within the, the things that were more relevant to PCGs.’ [Site 10-PCC]

‘I have noticed that they have got the set-up for sharing sites and things like that, I noticed that it is not barely up and running yet. I know that we have a few links in with other health centres, district nurses, etc. that are doing the same courses, so to have their sites up and sites that they have found useful…. And also literature from the library with new sites that they have found, I mean they are doing searches all the time the librarians. New magazines and articles that have come in that would be really useful…I think email would be fine, the way we use it there is somebody in there more or less weekly so emails would be picked up quite often.’ [Site 5-AS]

‘A more personal approach, I think.’[Site 11-AS]

‘…if I have a problem with finding something, and I think it must be out there then I would like to be able to phone up a librarian, and say at least what am I doing wrong, can you help with this. [Site 12-PCC]

‘…something very approachable, something simple so you can actually, I mean it would be handy to have like a database. But, I mean we would like to have more, or like just our topics you know the actual nursing side..rather than, having to start because that is the big bugbear isn’t it, having to start sieving through to find exactly what you want….I would probably like a newsletter sort of thing you know.’ [Site 7-CN]

‘…continue to let us have the full texts if they are relevant.’ [Site 8-DN]
'I think the facilities that the library have already got are more than sufficient. But, people need to be able to know that they are there to get them. I don't think they necessarily use the library facility itself to the best extent because they don't necessarily know how much it has got there...if somebody is going to be emailing them and getting onto that basis, then they are going to know what they have got in the first place. It needs to be other than that, they need an element of a resource folder...actually out in the practice to show people what is available.' [Site 6-CBM ]

'From the literature point of view I would actually like to see something that is written in plain English!' ....And later....'And I think flowcharts rather than loads of written information, just simple stage flowcharts almost like to work a piece of equipment......that sort of level, I know it is probably very basic but I suspect people like me require very basic.' And continues....'......email is a different language to me, I mean I wouldn't even know how to access email..........I certainly think information should be accessible in basic folders in writing......so, you know as people become more skilled they can access it through email, or whatever.' [Site 4-CN]

'I think that it is very difficult to talk to someone on the telephone because you can't actually explain to them in any detail, if you wish to access something it needs to be sort of someone sitting with you just to get some basic training.' [Site 4-HV]

Another interviewee mentioned information support through training, stating that it needs to be ongoing and that her preferred delivery of support would be:

'....face-to-face support initially, perhaps email and telephone later.......when I am more confident.'[Site 12-DN]

8 Conclusions

In keeping with the format and the ethnographic approach employed (grounded theory), we have allowed the respondents' comments to formulate the themes and thereby shape the report. To conclude, we are therefore reviewing the suggestions and opinions that have emerged from the overall responses. These can be grouped into two sections, those associated with the library services in general and those relating to the e-STABLISH training programme.

8.1 Library services

Support for the librarians and an appreciation of their easy accessibility and general willingness to help emerged strongly from the interviewees in this evaluation. Most clinical staff appeared to have a good awareness of library services, nonetheless from statements given by some managers, there is a clear indication that the library could promote its services more widely:

'I didn't know there was a library until this course!' [Site 8-CBM]

'....so once that happened to me, I realised that there was a resource there that I could use, and I have used it again and again since then. But I needed just that one clip to find out that they can do something that other people can't, and people need to know that. And I can't go around other surgeries and spread the gospel...people need to be told somehow. That there is a resource there, it is a brilliant resource and it must cost the health authority thousands and thousands to keep it up-to-date, but do people use it? ....So I, I think they need to sell themselves a bit more, do a bit of a PR job themselves.' [Site 6-CBM]

Some staff are disseminating awareness of the library to their colleagues:
‘...I did speak to [e-STABLISH team member] yesterday about trying to make people more aware,......we have got a new team working upstairs now. But, so she is going to approach them because they need to come to me to book the room.’ [Site 4-AS]
8.2 Moving forward together

Summarising the findings above, together with the views expressed by the health professionals (Section 7.2) the main concerns are for a support network, which has several layers – practice, health authority, and professional body. Perhaps the work being done on Regional Learning Networks (Ballard and Pacey, 2000) would provide some further ideas on the best way forward.

The health authority needs to provide:

- Dissemination of current health issues via an electronic alerting service
- Increased inter-practice sharing of information via electronic links
- Interactive support for database searching

At practice level, staff require:

- Advertisement of library services for quick reference at practices
- Basic guidance in IT use in written form at practices
- One-to-one training in IT and information skills
- Continued post-training support via telephone, email or face-to-face interaction (a choice of options seems desirable though in the questionnaire survey over 50 per cent of those surveyed mentioned telephone as a desired option)

Professional support or recommendations are valued in the form of:

- Discipline-specific database or newsletters

8.3 e-STABLISH training programme

Out of the themes that emerged from the responses, the researchers identified a rich collection of views about the training. On the whole the views were very positive. People were particularly keen on hands-on IT and practical critical appraisal skills. However, the comments suggest that the efforts of the e-STABLISH team, and therefore the smooth running of the training were at times frustrated by IT failures and other logistical obstacles. Post-training IT problems, which in turn create logistical difficulties, continue to hinder the complete and successful application of the skills acquired during training. Due to the time lapse between training and full implementation of the system in practices, many people feel they need reinforcement of aspects of the training and updating sessions. Efforts have been made to cascade training at some practices, but this has not been comprehensive and all the non-attendees acknowledged that they would benefit from direct training themselves. With few exceptions motivation and enthusiasm for IT were high. There was general agreement that the fundamental skills acquired on the course could be used to help support the progression towards EBM and the changing culture within the NHS. As this district nurse, when asked if she thought her colleagues would be interested in similar training, opined:

‘….yes definitely, I think it's important that all nurses should go on it, if we're going to practise evidence-based practice. You can't ask for that without giving the training!’
References


Appendix 1: List of topics covered in the e-STABLISH training sessions

Day 1
Evidence based health care
Critically appraising a paper
Identifying a problem that is relevant to investigate

Day 2
Evidence health care and introduction to statistics used in critical appraisal
Databases – introduction to searching
Databases – practical session

Day 3
Preparation of presentations
Implementation of research into practice
Appendix 2: Details of job categories and numbers of survey participants

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</table>
Appendix 3 Interview schedule when training attended

INTERVIEW SCHEDULE SALFORD & TRAFFORD (TRAINING ATTENDED)

1. Please confirm that you attended all three days of training run by the e-STABLISH project.

2. Could you briefly outline any previous IT training you have received.

3. Had you expressed an interest in the training?
   [PROMPT: If volunteered, why do you think you were ‘volunteered’?]

4. Before you went, what benefits did you perceive you would obtain from the training?

5. The topics covered in the training were [SHOWCARD OF TOPICS]

6. Was there anything in the course that you found immediately useful?

7. What do you think other members of your group gained from the course?

8. Have you consulted any of the handouts since you did the course?
   [SHOWCARD OF HANDOUTS]

9. Are you aware of any occasions when you used the materials to help with training or mentoring someone else?
   [IF YES GET DETAILS]

10. (A) Which sessions would you have liked extended – or
    (B) which require a top-up?

11. Which session(s) consolidated information and skills you already had?

12. What are your views on the practical sessions?
13. Do you think you have practised some of the skills and knowledge gained since then?  
[PROBE If so, get full details of occasion – which/when/why?]

14. [Perceptions of information service support]

   (A) What do sort of information service support would you like to see?

   (B) How should this support be provided?  
   [PROMPT: email/telephone/face-to-face sessions]

15. Are you aware of any of your patients or clients having used the Internet to obtain health information?

16. How does this come into the consultation?

17. What do you think patients should have access to?  
   [PROMPT, e.g. Cochrane?]
Appendix 4 Interview schedule when training not attended

INTERVIEW SCHEDULE SALFORD & TRAFFORD (TRAINING NOT ATTENDED)

1. Please confirm that you did not attend any of the three training days run by the e-STABLISH project.

2. Could you briefly outline any IT training you have received in the past.

3. Would you have liked to attend the e-STABLISH training days?

4. What were the reasons for you not receiving the training?

5. What benefits do you think you might have gained from the training?

6. The topics covered in the training were [SHOWCARD OF TOPICS]

7. Is there any topic in the list for which you feel you might need some additional support?

8. What do you think other members of staff gained from attending the training?

9. Have you consulted any of their handouts since they did the course? [SHOWCARD OF HANDOUTS]

10. Which sessions would you most like to attend? [SHOWCARD OF TOPICS AGAIN]

11. Which sessions would be least useful to you?

12. Do you perceive the need for practical hands-on searching skills help yourself?
13. *Perceptions of information service support*

   (A) What do sort of information service support would you like to see?

   (B) How should this support be provided?
   [PROMPT: email/telephone/face-to-face sessions]

14. Are you aware of any of your patients or clients having used the Internet to obtain health information?

15. How does this come into the consultation?

16. What do you think patients should have access to?
   [PROMPT, e.g. Cochrane?]
Appendix 5 Showcards of topics covered in the e-STABLISH training and handouts
(given to trainees)

Topics:

Day 1
Evidence based health care
Critically appraising a paper
Identifying a problem that is relevant to investigate

Day 2
Evidence health care and introduction to statistics used in critical appraisal
Databases – introduction to searching
Databases – practical session

Day 3
Preparation of presentations
Implementation of research into practice

Handouts from training sessions:

- Carrying out a literature search
- Literature searching using thesauri
- Searching the Internet
- Handout of slides from the Evidence-based healthcare session
- Handout of slides from the Healthcare Statistics session (including CARE handout on NNTs – numbers needed to treat)
- Handout on Effective Implementation
- CASP – 10 questions to help you make sense of a review
Appendix 6 Vignettes used during interview

*Primary care clinician vignette 1:*
You have a colleague who is interested in finding out whether there are alternatives to the use of antibiotics in treating acute otitis media in young children. She wants to know whether there have been clinical trials to test the effectiveness of antibiotics compared to other treatments for this condition. How would you advise her to go about looking for information on this topic?

*Primary care clinician vignette 2:*
A colleague is to give a lecture on 'responding to death and bereavement' to a group of trainees. How would you advise him to search for existing research into GPs' attitudes to the death of a patient?

*Practice managers vignette:*
You have a colleague who is Practice Manager. He has been asked to investigate why hospital admission rates are much higher from some general practices than from others. How would you advise him to look for any existing research into this issue?

*Community nurses vignette 1:*
You have a colleague who works as a nurse in a primary care practice. To develop her role your colleague is hoping to take on more responsibility for treating minor illnesses. Before presenting her idea to the practice she would like to find information on other practices where nurses have set up a similar service. She is interested in how patients reacted to these services and whether GPs' time was saved. How would you advise her to go about looking for this information?

*Community nurses vignette 2:*
You have a colleague who has been asked to participate in a trial relating to the provision of out-of-hours consultation through a nurse-run telephone service. The service would operate in the evenings and at weekends and would cover a group of primary care practices. Your friend would like to know about any research into similar projects to find out about training and support given to nurses involved. How would you help him to find information and advice?

*Community staff vignette 1:*
You have a colleague who has been asked to investigate whether it would be beneficial to develop a structured system of preventive home visits to elderly people living in the community. She needs to find out whether studies have been conducted to assess the effectiveness of preventive visits in terms of improving functionality in daily activities and in terms of the elderly people's self-perceptions of their health status. How would you help her to locate any information or advice?

*Community staff vignette 2:*
A colleague has been asked to give first-aid training to new parents as part of an awareness campaign about child-safety in the home. She wants to find out whether there has been any research into the effectiveness of child-safety advice. How would you advise her to go about looking for any information?
Appendix 7 Postal questionnaire  
(changes have been made to the format for presentation in this report)

Evaluation questionnaire on the training sessions run by the e-STABLISH project

PLEASE COMPLETE THE QUESTIONNAIRE BY TICKING THE BOXES AND ADDING COMMENTS WHERE APPROPRIATE

1. Please confirm that you attended all three days of training run by the e-STABLISH project.

   YES          [ ]
   NO          [ ]

If NO, why were you unable to complete the full training?

   …………………………………………………………………………………
   …………………………………………………………………………………

2. Could you briefly outline any previous IT training you have received.

   …………………………………………………………………………………
   …………………………………………………………………………………
   …………………………………………………………………………………

3. Why do you think your name was put forward for the training?

   …………………………………………………………………………………
   …………………………………………………………………………………
   …………………………………………………………………………………

4. Before you went, what benefits did you perceive you would obtain from the training?

   …………………………………………………………………………………
   …………………………………………………………………………………

The topics covered in the training were:

   **Day 1**
   Evidence based health care  
   Critically appraising a paper  
   Identifying a problem that is relevant to investigate

   **Day 2**
   Evidence health care and introduction to statistics used in critical appraisal  
   Databases – introduction to searching  
   Databases – practical session

   **Day 3**
   Preparation of presentations  
   Implementation of research into practice

5. Was there anything in the course that you found immediately useful?

   …………………………………………………………………………………

6. What do you think other members of your group gained from the course?

   …………………………………………………………………………………
   …………………………………………………………………………………
7. Have you consulted any of the handouts since you did the course?
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8. Please give details of any occasions when you used the materials to help with training or mentoring someone else.
………………………………………………………………………………
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9. Are there any sessions that you would have liked extended or topped-up?
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10. Which session(s) consolidated information and skills you already had?
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11. What are your views on the practical sessions?
………………………………………………………………………………
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12. Do you think you have practised some of the skills and knowledge gained since then? If so, please give details of one occasion when you put the skills into use.
………………………………………………………………………………
………………………………………………………………………………

13. Would you like to see a library-run information support service? 
YES [ ] 
NO [ ] 
If YES, how should this support be provided? (e.g. by email/telephone/face-to-face sessions)
………………………………………………………………………………
………………………………………………………………………………

The following questions are related to patient-use of electronic information sources:

14. Are you aware of any of your patients or clients having used the Internet to obtain health information? 
YES [ ] 
NO [ ]

15. If YES, how does this come into the consultation?
………………………………………………………………………………
………………………………………………………………………………

16. What do you think patients should have access to? (e.g. Cochrane/Medline?)
………………………………………………………………………………
Preliminary Report for West Suffolk Site

Value and Impact of Virtual Outreach Services (VIVOS) Project

February 2001
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Abstract

The Pink Book, developed by a team at the West Suffolk hospital, Bury St Edmunds is one of six projects investigated by the Value and Impact of Virtual Outreach Services (VIVOS) project. The aim of this research is to evaluate existing health information outreach projects. It will use the findings and the cumulative experience of information professionals at the research sites to inform project management guidelines for the successful implementation and application of future programmes. A range of research methods was adopted with a view to identifying those that are most appropriate to evaluations of this nature. At the West Suffolk site, research focused on existing patterns of use of and potential development of the Pink Book. In order to identify possible areas for development of the Pink Book, the VIVOS researchers investigated the information needs of practitioners in the West Suffolk region and canvassed their ideas about the forthcoming Web-based version.

A triangulation of methods was achieved through semi-structured interviews which incorporated the Critical Incident Technique (Abad-Garcia et al., 1999; Chell, 1998), and a postal questionnaire. A mix of hospital- and community-based health professionals from the area were surveyed. Qualitative data methodology was the preferred approach because in-depth analysis was required and data handling was facilitated by the use of the NUD*IST 4 software program. The structure of the report parallels the themes drawn out during data analysis. Statistical analysis was conducted on some of the data using SPSS software.

Findings show that the original ethos of the Pink Book retains widespread support. However, current usage is limited by restricted access to its Web-based format. Increased demands on healthcare professionals in a dynamic environment mean that now more than ever, ease of access to useful, timely and appropriate information is paramount. The concerns for the Pink Book’s development team are to satisfy the information needs of its users and to keep that information up-to-date. In the near future there may be the opportunity to completely “re-launch” the Pink Book in its Web-based format. In turn, this could act as a catalyst to reawaken awareness amongst health professionals and possibly widen its appeal via dissemination to patients as health information consumers.

Acknowledgements

The VIVOS research team is grateful to all the West Suffolk staff who participated in the evaluation of the Pink Book. Without their participation in the survey work there would be no evaluation. The Pink Book team provided invaluable advice and support, which is gratefully acknowledged. The team is indebted to Re:source for funding the VIVOS project.
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1 Introduction

1.1 VIVOS aims / objectives

VIVOS was a one-year project running from February 2000 to the end of January 2001. It was conducted by the Department of Information and Library Studies, The University of Wales Aberystwyth and received funding from Re:source - the Council for Museums Archives and Libraries. The research team was based at Aberystwyth and collaborated with information professionals from Cornwall, Suffolk, Leicester, South Humber, Devon, North Thames and Salford and Trafford to assess the Value and Impact of Virtual Outreach Services. Development of research skills by the information professionals was seen as an integral part of the project.

The project had three main aims. The first two related to work carried out by health libraries to promote ease of access to information sources, particularly amongst primary-care and community staff. Outreach services should promote access to information resources for all healthcare staff and it is therefore important to establish a toolkit of methods for assessing the effectiveness of the services themselves and of associated training programmes. The VIVOS definition of 'Virtual Outreach Services' was fairly broad and covered any services that enable healthcare professionals to access pertinent information without physically coming into the library premises. In most cases this equates to electronic information sources, but at one of the VIVOS research sites it involves the dissemination of a hardcopy digest of topical evidence-based issues.

The third aim of the project was suggested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via the People's Network. This proved challenging since the People's Network is not yet established enough for an evaluation of its role in supplying health information to the public. The project team therefore decided to concentrate on locating schemes that are currently operating and on investigating healthcare professionals' attitudes to provision of health information on the Internet. The researchers also looked at links established between the librarian at Bury St Edmunds and local public-library staff and observed a training session on using evidence-based sources.

The five original sites selected for participation in the VIVOS study were chosen because their outreach services were already established. This had the advantage that a certain amount of baseline data were already available but also gave the opportunity to investigate how to maintain the momentum of projects beyond the initial enthusiasm. The sites were also selected because they provided a variety of project types and environments. Two additional sites were included once the project was underway. A specific aspect of each project was identified for evaluation by VIVOS:

- **Bury St Edmunds**: The Pink Book developed by library staff at the West Suffolk Hospitals' NHS Trust, originally as a directory of information for primary care clinicians.
- **Salford and Trafford**: A three-day training programme to accompany the e-STABLISH project.
- **Cornwall**: A database-training programme run for community staff by Cornwall Library Services.
- **Leicester**: A feature of the Trent Futures project giving remote access to NISS Biomed databases through the issue of Athens passwords.
- **South Humber**: The bulletin *Evidence Matters!* a regular digest sent out to local primary-care and community staff alerting them to topical issues in clinical effectiveness and evidence-based practice. This investigation also looked at access to the CINAHL database and the information-related problems faced by nursing staff in community settings.
This report is part of a set of preliminary reports produced for each of the participating sites, primarily to give an early indication of the results of each site evaluation. Work is still continuing on the data analysis and the full project-report will discuss common themes and issues raised across the site evaluations. The final report will draw upon the collective experience of the information professionals from the sites, along with the observations of the research team, to produce a set of guidelines to help other information professionals wishing to develop their own services. The results of the investigation into attitudes towards health information on the Internet and provision of health information to the public will also be presented at a later stage.

1.2 VIVOS and the Pink Book

The Pink Book in West Suffolk is a well-established and award-winning directory of local information. It began life in 1991 as a hardcopy directory aimed at providing GPs with information to help them with referrals to hospital and with identifying useful local agencies. Over time the Pink Book has expanded and now contains other information such as local clinical guidelines (Hunter and Lockyer, 1999). The format has become electronic with the aim of alleviating the problems of maintenance in an environment where information frequently changes (Hunter et al., 1998). There is currently a CD-ROM version and the Pink Book team are working on a Web-based version to appear on the West Suffolk Hospital Intranet site.

The VIVOS evaluation aimed to investigate who currently uses the Pink Book, what they use it for, how would they like to use it, and to gauge opinion about the forthcoming Web-based version. The evaluation was widened to encompass issues related to information needs of the health professionals and their patients in an attempt to establish the types of information that would be most useful to potential users of the Pink Book.

2 Methodology

2.1 Population surveyed

Twenty potential interviewees were selected at random, though the sample was stratified to ensure a spread of job roles across primary care, community, and mental-health staff from the West Suffolk region. Prospective interviewees were contacted by the library staff at West Suffolk Hospital with a view to arranging an interview. When they were unable to arrange a convenient time with potential interviewees from the original sample, the library staff extended the sample to include other staff from similar job roles. Some interviews were also conducted with staff selected at random from library users at the West Suffolk Hospital. In all, 23 interviews were conducted with health professionals from the original sample or from library users.

A further fourteen interviewees were either suggested by the librarian or were selected by the researchers because of their job-roles (e.g. involvement in community management). In this report these interviewees are classed as 'selected/directed'.

The total number of interviews was therefore 37. Where possible, face-to-face interviews were conducted, and telephone interviews were held when it proved impossible to arrange a mutually agreeable time. Across all of the VIVOS sites, 90 per cent of the interviews were face-to-face. The librarian at this site participated actively in the research process by carrying out some of the interviews herself.

Following a piloting process, 100 questionnaires were sent out to a stratified sample of hospital and community staff in the West Suffolk region. A total of 35 replies were
received, giving a response rate of 35 per cent. Through the use of the Critical Incident technique (Abad-Garcia et al., 1999; Chell, 1998) the questionnaire explored the broad information needs and information-seeking behaviour of the health professionals, and attempted to identify areas of their work in which they have specific problems locating pertinent information. The Critical Incident Technique asks respondents to describe a specific occasion when they had an information need and how they attempted to meet that need. It is hoped that respondents will find it easier to recall a specific incident and will therefore give a more expansive answer. Another potential advantage is that respondents can be asked to confirm how they used the information acquired.

For the purpose of this report, individual respondents are identified by job category to protect their identity. The authors feel, however, that it is important to attribute job type as this has a bearing upon an individual's 'world view' of their work environment (Checkland and Scholes, 1990; Mason and Willcocks, 1994). Details of job categories and numbers of survey participants are presented in the Appendices. Quotes that are used are verbatim. Where quotes are taken from questionnaire responses or from interviews with members of the 'selected/directed' group this is indicated by the use of 'Q' or 'S/D'.

2.2 Methods employed

A qualitative approach was followed using semi-structured interview schedules and these were administered at the interviewees' place of work. The interviews and questionnaires were designed in consultation with the site librarian at the West Suffolk Hospital. Copies of all survey instruments are included in the Appendices.

2.3 Chronology of site survey

In-depth interviews were conducted in August 2000. The 100 questionnaires were despatched in November 2000. The tasks of transcription and analysis were carried out between September 2000 and January 2001. Textual analysis was completed using NUD*IST 4 software and statistical analysis using SPSS.

2.4 Navigation of report

The structuring of the report corresponds to the emerging categories and themes from this process following the 'grounded theory' approach developed by Glaser and Strauss (1967). These concepts are used as a framework for this report, rather than simply listing responses to the questions. The sub-heading structure is designed to facilitate ease of reference to specific issues and themes.

Following this interim report, there will be formal discussion of the preliminary results with the site librarians to further validate the findings prior to preparation of the final report.

3 Work environment

The following sections illustrate people's daily work environments and the factors that impact on them. Themes and categories emerged from the responses to the questionnaire and through spontaneous discourse with interviewees. This spontaneity was facilitated by the semi-structured approach to the interviews.

3.1 Current approaches to electronic media

3.2 Improving standards of care

3.3 Barriers to successful information seeking
3.1 Current approaches to electronic media

The existing picture reveals a high level of motivation for IT and an enthusiastic uptake of electronic media, particularly the Internet. Respondents promoted the organisation of electronic information skills for others.

'I would be extremely grateful to actually have access to erm, to the Pink Book from the machine that I normally use ........ I'd be very pleased to do that, ......because I'm, I'm keen to try new things. I am keen to try new things.' [PAM]

'.......it's actually very rewarding to suddenly find a few days later something pops up on the computer, you know that they've added a new page, a new screen, some kind of information, some way of doing something, and it's very nice. Very rewarding, really.' [PAM]

'I personally feel the Internet is the best thing that has happened to this planet.' [HV]

'......so you've got this oracle sitting on your desk.....it's just sitting there so you just, I mean perhaps it's a bit too easy and you can just sort of whizz up there open Internet Explorer and in comes the data, so it's too easy really.' [SCP: S/D]

'.....if you've got a computer on your desk and you know where the Website is or whatever......you can flick the screen round and you can actually show people what you're looking through.....so you don't sort of lose them when you're off playing with your bit of hi-tech.' [SCP: S/D]

'.....books and things are often out-of-date and there are some superb sites which are written in clear English specifically for you know patients as well as doctors. I mean we all use the same sites and I think that is something that is particularly well done.' [SCP: S/D]

'I think it's going to be training more with the new staff and encouraging them to use it, instead of ....they go hunting for a bit of paper. ....and one of the ways of doing that is free basic computer training for three hours at West Suffolk College....I am going to be sending them a memo and trying to get them to book themselves. Just to learn how to switch on the machine!' [AS]

'.....you can see the advantages of having a Web page that you can update things more readily, and you know the whole thing is a lot more flexible and if you have a sudden urge to design or you need to, well something like the PCGs merging and things like that, it's much easier to alter things.' [CHM: S/D]

One clinician reiterates this view in the context of people's changing behaviours in contraceptive practices in response to new research from an international health organisation.

'Whereas if something changes, you have, for instance the emergency contraception has had a complete change around when we all started using progesterone only, as a result of a piece of research published by WHO, and suddenly the entire.... nation changed practically, this would have meant throwing away a whole leaflet, but of course if you've got it on the Web you can just change it straight away.' [SCP: S/D]
The themes that emerged from the above comments reflect the importance placed on currency and convenient access to information by health professionals. In addition to the obvious use of the Internet many people cited Medline, Cochrane and the West Suffolk library site as popular information resources. Increasingly, electronic media are being used as dissemination tools for the distribution of public information. This medium is especially appropriate for targeting certain age groups in society.

'...I use the Internet a lot...for information so I am always on the library site for example.' [SCP: S/D]

'I thinks it's just become, well if you don't know what you're doing, go to the Cochrane, or if you need to find something out go to Cochrane. There's also the Royal College of Psychiatrists have a database that's used and I think the RCN have one as well.' [CN]

'I mean I could, if I couldn't find it in the Pink Book usually I go for the Medline.' [TGC]

'Regarding information then I will use conventional literature searches. I will use Cochrane or Medline.' [TP]

'We are becoming more accustomed now to using some of the other electronic material that is available to us, so we are now for instance using Cochrane Library.' [PCC: S/D]

'......we certainly need some means of getting information about the services we offer to teenagers......most teenagers I think have access to the Web now, even if it's only at school.' [SCP: S/D]

Clinicians recognise that, with the advent of integrated electronic patient records and clinical management systems, the momentum and influence of electronic media will increasingly impact upon their daily work environment.

'...but I am sure you're right in the end everybody will have electronic records.' [SCP: S/D]

It was noted that whilst West Suffolk has achieved significant progress in IT networking there is still work to be done, before electronic harmonisation can be achieved and the following issues require attention:

3.1.1 Training needs

'......I am not computer literate really. So someone will have to do something for me, like train me, or something.' [N]

'One of my big things really is to become computer literate in the proper sense of the word, so that I can use Windows and that I can use the Internet or the Website. Because often you know the information comes from government or from any part of the world, it's there, it's immediate, and that's what I find I am missing out on.' [HV]
3.1.2 Maintenance of information content

'I think, if you're going to set yourself up as a provider of information to the public, there is an instant obligation, whether it's more ethical or whatever, what you're providing has got to be up-to-date. Because I think one of the most dangerous things you can do is be out-of-date … and I think if things are out-of-date I'd rather not bother.' [CHM: S/D]

The quote below demonstrates the need for maintenance in every aspect of information, particularly given the dynamism of Evidence-Based-Medicine, [see Section 3.2.1]

'……definitely people when they do audits we have to review every article from time to time and we have to put up about the deadlines saying that article is going to be there for a year and then it should be reviewed again……this is the whole thing rather than having a rigid article there and that's it.' [TGC]

3.1.3 Strategic support

'So I think health information, public access, professional access stuff has got massive, massive, massive, massive potential, enormous, will definitely be of the future, no question. I can see advantages of it happening within the NHS infrastructure in the UK but there's huge things to consider, and really the NHS has got to prioritise, say in getting the information across is something we have got to spend a lot of money on because it's going to save us things medium term.' [SCP: S/D]

'I don't think the NHS has yet grasped what it ought to be doing with IT, it thinks it's a management tool and, as with anything else really, and actually it ought to be a clinical tool.' [SCP: S/D]

3.1.4 Funding issues

'……and then we had our IT budget cut by half.' [CHM: S/D]

'……certainly everybody…..has got the ISDN lines as far as the wall of the surgery, it's a question of whether or not they pay to connect……which makes forward progress quite difficult obviously because you haven't got, you know, you're developing electronic patient records or you're developing fully booked systems for our patients,…..you need them to be connected.' [HBM: S/D]

3.1.5 Psychological constraints in approaches to IT

Overall the researchers found support for IT, though the perceptions of some staff towards others suggest there is still some way to go:

'I think, especially in general practice, actually nurses are very reluctant to, to, go into computers………. ' [PCC: S/D]

At the other end of the spectrum there is a danger of IT enthusiasm challenging the traditional patient–doctor relationship.

'……one of my patients told me today “he's a lovely doctor, so and so, but he's always got his back to you, tapping on his computer”.' [SCP: S/D]
3.2 Improving standards of care

3.2.1 Evidence-Based-Medicine

‘Evidence-based health care (EBH) is a concept of growing popularity because it offers the promise of clinical effectiveness and optimal resource use. This appeals to both clinicians and managers.’ (Clemence, 1998 p.257).

‘As NHS clinicians address the obligation continually to review and improve personal effectiveness through evidence-based-practice and clinical audit’ (Department of Health, NHS Executive, 1998).

The mutually appealing imperatives of effectiveness and efficiency demand the employment of Evidence-Based-Medicine to underpin treatments. There is a culture of nurturing Evidence-Based practice within the region as shown below –

‘I try to reflect what is written in the Pink Book….we tell them [students] about the Pink Book, how helpful it is and they should go for it and see how things are going because we don't want them to go outside Evidence–Based practice.’ [TGC]

Health professionals are actively drawing upon Evidence-Based research in their healthcare decisions and using the Cochrane Library [see Section 3.1] to support these activities.

‘I think that certainly from a user’s perspective, as professionals now we are expected to be looking towards more sort of helping carers and users more, and any validated research or data that we get access to would help.’ [CN]

3.2.2 Accountability, guidelines and protocols

The contemporary emphasis on professional accountability increasingly imposes on clinicians’ working practices.

‘I don’t think this proliferation of paper is actually increasing, improving the standards. I think it makes, some of the paper that we’re producing at the moment, enables us to demonstrate what we’re doing a bit better.’ [SCP: S/D]

‘…..at the moment information technology strategy within this health authority and probably everywhere else seems focused on better ways of measuring how much we do.’ [SCP: S/D]

As an implication of the moves towards professional accountability health authorities are seeking to standardise documentation of treatment interventions and management of care. This is facilitated through the use of guidelines and protocols.

‘Clinical guidelines based on the systematically analysed results of research and carefully introduced to doctors can improve clinical practice and outcomes’ (Feder, 1994 p.1457).

‘……it’s often quite nice if you are looking just to refresh your memory when you are seeing somebody of what the hospital want to do as a protocol. What you might expect an SHO in casualty to be going to say to the patient secondly, we often produce our own material so even if we are not with a patient, if we want to be looking to see if we can perhaps produce our own handout we want to make sure that it dovetails with the advice they have given.’ [PCC: S/D]
'I mean our, our nurses who are seeing the sort of minor head injury need to have, you know, a good foundation are using exactly the sort of thing and we, we are moving more to sort of protocol-driven care from the nursing point of view, and then guidelines more from the doctors.' [PCC: S/D]

To be effective, guidelines must be up-to-date and maintained, examples of these processes were identified in West Suffolk.

'My updates to the guidelines will come on a regular basis..... about every two months.' [NM: S/D]

'We have protocols for all sorts of things, I have to say the things I have to spend most time on are the xxxx for the nurses to use ..... That's something we have to annually update and now I have to reference them all as well and I have just been through that process again, and that's for every procedure that you would be happy for nurses to be doing unsupervised.' [SCP: S/D]

The above demonstrate the positive sides of guidelines and protocols, however they cannot be viewed as a substitute for medical expertise in treating patients as individuals. A further consequence is that the autonomy of practitioners may be challenged –

'I think these protocols can become handcuffs.' [SCP: S/D]

'So the nurse has perhaps less freedom to move from a list of things to do.' [PCC: S/D]

'Well, I think in all honesty medicine is not about protocols, medicine is not about guidelines. So I think protocols and guidelines are only there to guide people and to make sure that they don't sort of...make a gross mistake, but you have to look around protocols and guidelines often to tailor the treatment to patients.' [TGC]

As this last practitioner pointed out 'a human being is not a Ford Focus or Ford Escort for that matter and changing the carburettor, it is a human being, it is a complicated machine.' Another potential problem is the sheer volume of guidelines, and obviously a co-ordinated approach will be necessary long-term to avoid duplication.

'And the other thing is that two maybe three years ago, they went, the protocols were coming out.....and I got five in the course of a month, five protocols on the treatment of [specific condition] .....So, rather tongue in cheek, I wrote off to Suffolk Health who were the last one to send me one saying thank you for your guidelines.....they are the fifth that I received this month and I must catalogue which one takes precedence because they are all slightly different so which one takes precedence, or do I chose whichever one I want? If I chose whichever one I want then everybody is re-inventing the wheel and everybody is writing their own guidelines on this.' [SCP: S/D]

### 3.2.3 A team approach

The trend towards standardised interventions necessitates a more cohesive team approach across and between professionals in practice. Evidence of this at West Suffolk is provided in the following comments:

'We are more and more you know working with social services.' [CN]

'I mean generally they are working towards in the NHS better communication between you know departments and this sort of thing, shared records.' [CN]
‘……the concept of everyone singing off the same hymn sheet, if we are going to have multi-professional patient care everyone has got to be doing the same thing, that is you have all got to fit.’ [TP]

It engenders a more holistic style of working as this clinician noted,

‘……although, you know, the consultant is nominally in charge it is not necessarily them, it might be somebody else in the team and they all have their own role. I mean the health visitor has got much better counselling skills than I have so I think the whole of medicine should be going down that route, and I think the focus should be, it all sounds a bit politically correct and trite, sort of patient centred rather than any professional group centred, which would involve everybody.’ [SCP: S/D]

The integrated approach is facilitated by resources such as the Pink Book, which has the potential to foster networks and the dissemination of information across a broad range of professionals and sites.

‘I suppose a Web–based version of the Pink Book, if everybody was doing it would allow you to compare how you practise with colleagues in different parts of the regions and different parts of the country. It would allow sort of inter–change of ideas I suppose.’ [SCP: S/D]

‘……all these things actually play a very vital role in bringing, or bridging the gaps between medical, nursing and OT and PT professions.’ [TGC]

‘……more people have got access to the Pink Book and to the information about management of certain people, certain conditions you know the better it is going to be for patient care in the long run.’ [SCP: S/D]

‘I think there’s quite a lot of difficulties between professional groups and I don’t think, you know, I am happy in my isolation thank you very much! But there’s going to be a lot of scenarios that don’t work cohesively and, well I think you know any degree of collaboration whether it be writing the bits for the Pink Book or whatever has to improve that.’ [SCP: S/D]

Despite the fluidity identified between some specialisms and departments there were examples of culture clashes amongst others and problems between non-coterminous departments.

‘……people who work in child protection have a different system, again on confidential …you can’t cross over and they can’t cross over there. So what I would then have to do if I wanted that information is ring somebody up……and they’d get back to me on that.’ [PAM]

‘…………all our referrals are pooled now…..we allocate within the team who gets it, doesn't matter who it’s addressed to…..we are way ahead in that sense. Where it’s awkward is between say health visitors and community nurses 'cos health visitors aren't on the team, child protection workers and mental teams because they have different agendas et cetera.’ [SCP: S/D]
'We are going to be networked here for very much that same sort of reasons and we consider this a good move to come out here, for our disability work. But obviously, it ought to be still a restricted access. We will basically get things here like, you know who else is seeing the patient, the client……and then you can actually, you know perhaps arrange joint sessions.' [PAM]

However, in a study by Hudson et al. (2000), which looked at an advanced stage of this process – the physical locating of a social-worker in primary care practices – revealed that:

'One of the key issues raised by a move towards integrated teams whose membership spans different organisations is that of a potential clash of interest between loyalty to team objectives and the different demands that may arise from the employing organisations.' (Hudson et al. 2000 p.72).

3.2.4 Patient involvement in care management

'The current climate in medical care has shifted the responsibility for many health care decisions to the patient, while at the same time providing little basis upon which these decisions can knowledgeably be made.' (Honig and Calvano, in Calvano and Needham, 1996 p.255).

The increasing need to involve patients and their carers in active decision-making about treatment and care management impacts directly on the working patterns of practitioners. This is directly related to the trend towards patients as consumers of healthcare in government directives such as Information for health: an information strategy for the modern NHS 1998-2005 (Department of Health, NHS Executive, 1998). Practitioners are responsive to this approach and feel that patients should have the information necessary for them to participate competently in the decision-making process:

'I think they are entitled to get any information that they can. I think they are also entitled to have it explained to them….I think the sort of people who are willing and able to do that are often people who wish to take responsibility for their own illnesses, as you have said, patient-centred….and the more information, usually the better able they are to make a decision about what they want to do.' [SCP: S/D]

However, it has ramifications for their daily practice since time must be devoted both to involving the patient in the intended care programme:

'But it means that there is more demand on us to, to explain our management……for patient care, and it's more time-consuming.' [SCP: S/D]

and to guiding the patient through the information available about their condition and treatments. This has engendered an additional responsibility in new roles for practitioners, such as that of information mediator. This is particularly evident because new technologies are increasing ease of access to medical information, giving patients and their families the opportunity to bring quantities of information to the consultation.

'There's a lot of misinformation on the Net, or particularly on medical matters I think, and in many ways it makes my heart sink because I know that loads of it is going to be rubbish. And I'll have to spend, you know, precious minutes of an appointment they've waited months for, disabusing them of all that lot so that we can actually get down to talking about what we need to talk about.'[SCP: S/D]

'Now you can't blame people for going and looking about, and you can't, but you do have to take the time to explain to them.' [PCC S/D]
'I think it's just, I think clinicians will have to be very careful, you know, educating them.' [AS]

Many practitioners have positive views about the public's ability to distinguish superior-quality information from inferior, or are happy to accept the role of information mediator and acknowledge that they can gain from the experience too:

'People who use the Internet I think realise that a lot of the sites are absolutely worthless, not qualified, so I think most people who use it realise that the quality of information is very variable. I think people know that, I don't think you have to be told. If you look through a site they look absolutely ridiculous, and if you believed all that you'd have to be very simple I think.' [PCC]

'…one occasion I had actually seen that research on the Royal College of Psychiatry, so I was getting exactly the same info, information as the patient. Which was quite empowering for the patient.' [CN]

'…in one of my cases I was talking about a particular therapy that had been pioneered in Australia…and I was suggesting that we use this particular therapy with this parent's child and the parent said "Oh yes, yes I have , I have got that information off the Internet" and she had, she had got the thing, so that was excellent. Because, then all I had to do was, I didn't have to explain the rationale, I said "well, are you happy to read through that and then we will talk about it later" so it was actually quite good.' [CP]

'I have now had three or four people who've come along with quite sophisticated diagnoses that they're telling me they've got a, they've got it off the Net and they've been correct.' [SCP: S/D]

'Yes, it is a positive thing for the patient, but for us it is more, it complicates, although I must say it has positive sides, because there might be some answers we did not know. One can't know everything.' [TGC]

However, as indicated in this British Medical Journal editorial,

In countries where patients can participate in the choice of treatment the Internet could potentially be a rich source of information on treatment options, but meeting patients' expectation and managing their requests presents an important challenge for providers of health care. (BMJ, 1996 p. 3)

there are implications beyond the time factor, and several respondents referred to issues relating to raised public expectations and potential conflict during consultations:

'Saturation, sometimes, especially on some of the American Web sites, raises expectation, which the NHS is unable to meet……But then it makes them much more sophisticated customers, consumers, which is not a bad thing.' [PCC: S/D]

'…and I don't think the average patient, even if they are quite educated people, it's, it's not in layman's language, so again could be very dangerous, and unrealistic expectations and all the things that go with it.' [PAM]

'…they usually come in with ideas…"I need this and I should be treated with it", because the information that they get is not, you know it's biased. If it's a Web site that is produced by a drug company…the drug company Web sites you can get access to fairly easily, and they just deal with the drugs that they are promoting. And in America of course there is nothing against the law to promote new medicines. So you start getting confidence tricks: tell your physician to prescribe this.' [CP: S/D]
‘...we don't need to be in conflict with patients who have got bad information. So that the more good, high quality information patients have access to the better.’ [PCC: S/D]

‘They listen to what you say first, and if you are talking the same language as their Internet papers are talking then that’s fine, they let it go with the flow. I think the minute you start saying “well, you know it’s, I don’t think so”, and that’s when they start asking and that’s when you start knowing so, they can become confrontational...’ [TGC]

3.3 Barriers to successful information seeking

‘The results of this study suggest that significant barriers to evidence based practice exist within current NHS, professional and trust structures and cultures. Furthermore, it suggests that these barriers are the product of a complex dynamic interaction of social, organizational, political, economic and cultural factors.’ (Newman et al. 1998 p.16)

The dynamic and challenging environment in which healthcare practitioners function impinges on the effective use of information to underpin practice. More than ever before practitioners require timely and accurate information but, ironically, these needs are subverted by the constraints which may be engendered through the very environment in which people work. The following information barriers were identified by the participants in the survey:

3.3.1 Problems with IT facilities

‘I have got a very old machine, which apparently is not compatible...and they say, we will change it, but they haven’t changed it.’ [SCP: S/D]

‘No, no we have only got one [computer] between us, there is, there’s fourteen of us if we all turn up in there......and we have just got the one.’ [CN]

‘...but it's [a computer in the department] not connected to the system. It's one of the drawbacks. We’re trying to get one connected to the system, but it's in the hands of the IT department at the moment.’ [TGC]

‘It's waiting for, they are trying, they are putting, they are looking to put a system online...and we are waiting for that and when we get that up and running, which isn’t at the moment for some obscure reason, then they will show me how to use it.’ [N]

‘I think they’re probably fed up with waiting, 'cos technology has been there for years but quite slowly, the Internet and even our local net information hasn't necessarily been available.’ [NM]

‘I'd have to go to the computer room...when you can get in there, it's just full all the time, it's a problem really.’ [TP]

3.3.2 Skills deficit

‘I don't use it at all, 'cos I don't know how to.’ [N]

‘I do use the Internet a bit, and I mean the term a bit, but I have to say that it's a struggle.’ [SCP: S/D]

‘I'm not very good at using those.’ [HV]
...to start with I found it a little difficult, I was clicking on the wrong buttons, but that's just my computer technique. I'm, I grew up before computers existed, it's a sort of learning exercise for me.' [SCP S/D]

### 3.3.3 Organisational barriers

'...spending time in the library is outside what I would normally do in my work if you see what I mean... so, if I was actually to say, well I'm going to the library, I don't have to ask anybody what I'm going to do but basically one tells people where you're going in case you're needed and if I were to actually be saying "I'm going to be spending the next half an hour in the library" when I'm not doing any courses, I'm not doing any research or anything like that, I personally would feel that I would need to explain what I was doing.' [PAM]

### 3.3.4 Failure to qualify for access

'I don't, we are not allowed on the Internet... you have to register...not everybody has just open access as such. So I think if people had that access...I think we might be able to use it.' [DN]

'Well, I have found with a lot of them you need a password to get on them. And you have to provide a subscription, so I think it would be difficult to get on...I think it's about five hundred pounds a year for one of them...’ [AS]

### 3.3.5 Accessibility of information

'I haven't had the opportunity because very often it's, presents as an abstract form...so I can't evaluate it because I don't have the whole dissertation.'[CN]

### 4 Information needs

Our main findings in this section come from responses to the questionnaire, see Appendix. Respondents were asked about their information needs regarding appropriate organisations, useful sources of information for patients, and guidelines and protocols. It was hoped that the responses would point towards the potential direction and content for the Pink Book based on the users' needs.

#### 4.1 Organisations and experts as points of contact

Answers to this are recorded in a chart, see Figure 1.

Where respondents expressed a need for contact with social services, voluntary organisations or community trusts, they were asked to provide specific details of the department or agency concerned. A breakdown of the responses is located in the Appendix.

#### 4.1.1 Problems encountered

Sixteen out of 35 respondents stated that they experienced problems when trying to contact organisations or experts. Six people mentioned social workers or social services. Three people gave support agencies, specifically Cruse, Relate and Children in Divorce and Separation. Two people mentioned consultants, and each of the following were offered by just one person: voluntary organisations, local health partnerships, local
Answers to Question 1: In your work, which sorts of organisations and experts do you need to contact?

Figure 1
Number of cases

- GPs
- Local consultants
- Social Services
- PCGs
- Non local Consultants
- Voluntary Organisations
- Community Trusts
- Health Authority
- National Centres
- Other
- CHCs
personnel in various agencies, continence advisers, and primary care group members. The following comments identify the types of problems encountered:

'Social services can be difficult to find their phone numbers because of recent re-optimisation.' [SCP: Q]

'Cruse – do they cover Thetford in Norfolk?' [PCH: Q]

'Normally individuals in large organisations i.e. social services, health.' [CN: Q]

4.2 Information sought

The answers in this and the following two sections refer to the critical incident format described in Section 2.1. Respondents were asked to think back to a specific occasion when they needed to find information from other health professionals and / or organisations. When asked to indicate the type of information they were looking for, their replies are illustrated in Figure 2. Examples of types of required information not listed included medical papers on ultrasound, information needed to ensure one’s remedial activities are totally appropriate, and other local professional for local information. The information was needed for:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient care</td>
</tr>
<tr>
<td>Guidelines</td>
</tr>
<tr>
<td>Child-related issues</td>
</tr>
<tr>
<td>Coursework</td>
</tr>
<tr>
<td>General services</td>
</tr>
<tr>
<td>Legal &amp; ethics</td>
</tr>
<tr>
<td>Management</td>
</tr>
<tr>
<td>Complaint</td>
</tr>
</tbody>
</table>

4.3 Locating information

When asked about where information was obtained from, respondents indicated the following as sources:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal contact</td>
</tr>
<tr>
<td>(including telephone enquiries)</td>
</tr>
<tr>
<td>Internet</td>
</tr>
<tr>
<td>Hardcopy</td>
</tr>
<tr>
<td>Pink Book</td>
</tr>
<tr>
<td>Bibliographic databases</td>
</tr>
<tr>
<td>Guidelines</td>
</tr>
<tr>
<td>Hospital library</td>
</tr>
<tr>
<td>Support agency</td>
</tr>
<tr>
<td>Social Services</td>
</tr>
<tr>
<td>Hospital department</td>
</tr>
<tr>
<td>Education establishment</td>
</tr>
</tbody>
</table>
When asked whether their quest involved asking anybody else for assistance and why, examples given of the people approached included:

- Diabetes Nurse Specialists – Have always found them extremely helpful and reliable.
- Yes, lots of people – Started with people and organisations I had heard about and contact them, led on to more contacts.
- Social Services – They had in-depth knowledge of family/child.
- Yes, hospital based OT – Know they have the resources.
- West Suffolk hospital librarian – Benefit of her knowledge
- Often ask colleagues at work – Seem most appropriate or convenient

4.4 Use of information

Figure 3 shows that the majority of people were successful in locating the desired information. When asked how they used the information the responses are illustrated in Figure 4. Where people selected "other uses" these included: education, development of role, students, referrals, GPs.

4.5 Information needs of patients

As seen in Figure 4 around one third of respondents to the questionnaire stated that the information they located on one specific occasion was passed onto patients. It has been indicated in Section 3.1 that the provision of information for patients' consumption is now an important part of a practitioner's daily life. The initial scope of the study was broadened through the questionnaire and during conversation with interviewees to explore how appropriate patient-information is disseminated and how patients locate information independently. A range of information contexts emerged and are illustrated by data from the questionnaire and quotes from the interviews.

4.5.1 Reassuring patients about hospital procedures

'I suppose sometimes patients do ask us what the wait is……you know the length of wait for their initial appointment.' [CP]

‘……where patients are coming in and having their blood pressure taken and talked through what will happen to them, those sorts of things will, they do reduce the anxiety, and it seems evidence-based, that if you can reduce their anxiety you will also reduce their need for analgesic post-op, all sorts of things, and they go out quicker if they know what is expected…’ [HBM: S/D]

'I believe that the children’s ward have a little booklet don’t they… to prepare children to come into hospital, and I would ask parents to contact the ward clerk for it.' [HV]
Figure 2
Type of information required

- Protocols & guidelines: 30 cases
- Contact details: 20 cases
- Detail consultant interest: 10 cases
- Referral procedure: 0 cases
- Admissions procedure: 0 cases
- Other: 0 cases
- Clinic times: 0 cases

Number of cases
Figure 3
Did respondents find the information they required?
Figure 4
How respondents used the information they had found

Number of cases

- Kept Information
- Pass to Patient
- Pass to other Health Professional
- Pass to Ward/Dept
- Other Stated
- Pass to PCT
- Pass to Carers
- Pass to Social Services
- Pass to Vol Organisations
- Pass to Community Care Organisations

Number of cases: 20
In the questionnaire, practitioners were asked where their patients currently obtain pre-admission guidance.

<table>
<thead>
<tr>
<th>Source</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Ward</td>
<td>11</td>
</tr>
<tr>
<td>PCT</td>
<td>5</td>
</tr>
<tr>
<td>Hospital pamphlet</td>
<td>2</td>
</tr>
<tr>
<td>Hard copy information</td>
<td>2</td>
</tr>
<tr>
<td>Social Services</td>
<td>1</td>
</tr>
<tr>
<td>Clinic Web site</td>
<td>1</td>
</tr>
<tr>
<td>Helpline</td>
<td>1</td>
</tr>
</tbody>
</table>

The cited responses imply that verbal sources are most widely used.

4.5.2 Fostering independence in patients

'I believe in sort of getting people to help themselves to a certain extent so I mean we point them in the right direction…….' [CN]

'….they can use the, there’s a computer health line, they can use you know, anyone can use in the reception here in the hospital.' [CN]

'I think the more information that you can give people the better…they will know more about their conditions.' [SCP: S/D]

4.5.3 Lifestyle information

'So they often, very often they ask me for information and it's very varied really. Sometimes they might be, side effects of the medication, or they might want to know more about benefits, some of the benefits that they are on……or even information about some of their pastimes and interests and that's quite a large section of my job really.' [CN]

4.5.4 Inter-organisational networks

'I mean about sixty per cent of our patients self-refer, so they must be getting information about us from somewhere else……so their contacts will have given them information and we, you know if the contact has, we will have sent them out with leaflets et cetera, et cetera. Other sources, I mean there are some people who come because the health adviser gives out information in schools, and also magazines.' [SCP: S/D]

'….but we give information material, there's leaflets, general leaflets and then we give the leaflets to the patients that they might call help-lines, asthma help-lines or counselling help-lines, and they can call there. Or tinnitus, there’s a special number for Great Britain.' [TGC]

'Well, they used an information line here. Health-line, it was called I think. And I think there still is an access number which takes them to Ipswich I think. So I would encourage them to use that or the Citizen's Advice Bureau or their own GP.' [N]

'…in the last ten years we’ve had a huge expansion in psychiatry self-help type organisations. A lot of them which are on the computer, on the Internet. We tend to have the local contact details….' [CN]
‘... we have the telephone number of all sorts of headquarters for self-help support groups and I usually have a copy of that, and then I give them the headquarters contact number so that they can access the local line, but if I feel as a family they won't be able to do it or they don't have the confidence, then I'll ring them back and give it to them after having rung the headquarters, so it's really linking in isn't it.’ [HV]

In the questionnaire practitioners were also asked about peripheral care services i.e. external agencies and support services.

External agencies

<table>
<thead>
<tr>
<th>Service</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Services &amp; Local Authority</td>
<td>6</td>
</tr>
<tr>
<td>Voluntary groups</td>
<td>4</td>
</tr>
<tr>
<td>Mediated contact</td>
<td>4</td>
</tr>
<tr>
<td>PCT</td>
<td>3</td>
</tr>
<tr>
<td>Hard copy information</td>
<td>2</td>
</tr>
<tr>
<td>Private agencies</td>
<td>1</td>
</tr>
<tr>
<td>Administration staff</td>
<td>1</td>
</tr>
<tr>
<td>Yellow Pages</td>
<td>1</td>
</tr>
<tr>
<td>Other health professionals</td>
<td>1</td>
</tr>
<tr>
<td>Health Information Points</td>
<td>1</td>
</tr>
<tr>
<td>Internet</td>
<td>1</td>
</tr>
<tr>
<td>Telephone</td>
<td>1</td>
</tr>
<tr>
<td>Self-help associations</td>
<td>1</td>
</tr>
<tr>
<td>Pink Book</td>
<td>1</td>
</tr>
<tr>
<td>Hospital</td>
<td>1</td>
</tr>
</tbody>
</table>

Support services

<table>
<thead>
<tr>
<th>Service</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCTs</td>
<td>8</td>
</tr>
<tr>
<td>Social Services</td>
<td>6</td>
</tr>
<tr>
<td>Mediated contact</td>
<td>4</td>
</tr>
<tr>
<td>Voluntary groups</td>
<td>3</td>
</tr>
<tr>
<td>Hard copy information</td>
<td>3</td>
</tr>
<tr>
<td>Community clinic</td>
<td>2</td>
</tr>
<tr>
<td>Helpline</td>
<td>1</td>
</tr>
<tr>
<td>Libraries</td>
<td>1</td>
</tr>
<tr>
<td>Care co-ordinator</td>
<td>1</td>
</tr>
<tr>
<td>Other health professionals</td>
<td>1</td>
</tr>
<tr>
<td>Internet</td>
<td>1</td>
</tr>
<tr>
<td>Pink Book</td>
<td>1</td>
</tr>
<tr>
<td>Hospital</td>
<td>1</td>
</tr>
<tr>
<td>College / nursery students</td>
<td>1</td>
</tr>
</tbody>
</table>

Respondents acknowledge that the public does still get health information from a variety of sources including the popular media and peers.

‘……but there’s an awful lot of information actually comes out, especially in women’s magazines…..you can think of people saying, well I've got a problem with me.... and I saw on the front of such and such, “SHE”, it had an article on…….’[CHM: S/D]

Indeed in some cases, in this instance amongst teenage girls, figures of traditional authority are a low priority.
"Yes, they get a lot of information from their friends, mostly inaccurate, and they get a lot of information from magazines. Those are the two I think prime areas, I mean there are obviously others like the media, I mean, the media in more like radio and television......as opposed to magazines.......friends come top of the list. The media comes next, and schools, parents and doctors come pretty low down the list!" [SCP: S/D]

5 Current attitudes to and role of the Pink Book

5.1 Awareness of the Pink Book

Over fifty per cent of people interviewed said that they used the Pink Book, though many of those who stated that they were not users expressed an awareness of it. However, some people looked at the Pink Book out of curiosity rather than being driven by specific information need. Some respondents thought that the Pink Book would benefit from wider promotion.

'I do know a bit about it, a little bit.....by a sort of process of osmosis I suppose. I seem to have always known it since I have been here, but I've never been specifically sent any information.' [PAM]

'I had heard about the Pink Book and my perception is that it's aimed mainly at general practice, and we, I looked at it so that I knew the sort of things that were covered there and what it was being used for.' [TP]

'Initially, I was just looking, checking out because I wasn't familiar with the system, out of curiosity I just wanted to know what there was on the system. Basically having a look at it, and then when I saw it was, that it was more for local services then that's the sort of thing I am interested in...' [CN]

'I know about but, haven't used it....I heard about the last time in the introductory day of the hospital, and before hand I had been in GP. So it is very unknown in the GP practice of the use of the Pink Book.' [TGC]

'We probably don't know fully what's on it actually.' [CP]

'I think another, another thing is, is publicising it to, lack of awareness I would think. I think maybe making nurses a bit more aware of it.' [PCC: S/D]

'It would be quite useful actually to be sent a résumé of what is on the Pink Book and then we'd know whether we'd use it, and we'd then be saying OK we need such and such.' [PAM]

'When I was aware that it was available, it was literally to have a look and see what it was about.' [CN]

'No, not until you sent me the letter, but prior to that I hadn't heard of it.' [N]

'No, I haven't personally looked at it, but if my admin manager was here she'd probably have hit me by now and said, we have got the Pink Book, it's by the front desk and we use it all the time, and it's only out of ignorance that you don't.' [CN]

'What do you mean the Pink Book?' [N]
5.2 Physical access to the Pink Book

Of the people who said they had used the Pink Book at some point, the majority (10) said they accessed it from their office. The other answers given were as follows:

- Library: 3
- Community health centre: 2
- Training room: 1
- GP practice: 1
- Hospital department: 1
- Home: 1
- Ask librarians for help: 1

Understandably, people expressed a preference for access to the Pink Book from their desk, and several of those who had to go elsewhere were naturally frustrated by this. These problems are illustrated below.

'I think the problem of access is, is getting to it from my desk basically. I wish the system could be incorporated into the computer on my desk, now I've got to go to another room to another computer.' [PCC: S/D]

'At the moment as far as I know I can only access the Intranet in the library. There are a few departments.....but it's in the office and that's hardly the place to put it if you are having a Pink Book. Should put it in the area of work I think.' [TGC]

'We haven't actually, are not accessed to it in these offices so I only use it if I go up to the department at the West Suffolk hospital and I am part of their team. And later......if we actually had it in this office I think I would use it quite a lot.' [PAM]

'......so if it was more available and it was there as an icon I could click on I am sure I would.' [use the Pink Book] [SCP: S/D]

'In fact there has been a paper copy for many years......because of the availability [of IT equipment] on our wards we've had to maintain a paper copy on the wards....so that it's available to all members of staff.' [NM: S/D]

5.3 Ease of use of the Pink Book

Where possible, those interviewees who had used the Pink Book at some point were asked to expand on how easy they found it to use. Some practitioners were very positive —

'Very easy, the Book is very simple for me to use and I don't have any difficulty at all in accessing the Pink Book.' [CP: S/D]

'Yeah, it's very easy. It's got a menu you just follow it, I didn't find it difficult at all.' [TP]

'Actually, it's actually not difficult to use, no. Providing you um just take it quietly.' [SCP: S/D]

'Yeah, yeah it's quite well set out.' [SCP: S/D]

However, some people were more cautious in their evaluation, which may be due to a lack of confidence in IT use generally, or lack of familiarity with the Pink Book.
'Well, personally I know how to get into it, but some people do find difficulty, to get into it, I think that's perhaps lack of…..general lack of use of how to use it.' [DN]

'Well, I think the first time I went into it there were certain, things weren't necessarily where I thought they would be, but I soon sorted out where they were and yes I think it would be easy to use, if you had accessed it several times.' [PAM]

'Probably not at that time because I wasn't particularly computer literate. I don't consider myself, you know very computer literate you have to use it often.' [CP]

'…..to start with I found it a little difficult, a little um, I was clicking on the wrong buttons, but that's just my computer technique.' [SCP: S/D]

5.4 Frequency of use

When interviewees had stated that they used the Pink Book, efforts were made to ascertain frequency of use:
- Occasionally (<6 months) 10
- At least once a week 3
- At least once a month 3
- Every few months 1

However, on closer scrutiny, others said that they had glanced at it, or had seen it in a previous job role.

5.5 Use of the Pink Book as a resource

The practitioners came from a variety of environments and job roles, yet their current use of the Pink Book tended to conform to one of the following categories.
- Teaching and training
- Guidelines and protocols
- Checking personal / unit entry
- Personal use as directory

5.5.1 Teaching and training

'I try to see if they've read it or not, and what is the feedback. So just to close the assessment part of it. Do they read it? Do they absorb it? Do they apply it to their daily work or not?' [TGC]

'But I thought it was important that I knew what sort of things the Pink Book did……so I could actually say to somebody……because my role is teaching people……It may be something just generally, I may be able to point somebody in a better direction or give them a bit more depth.' [TP]

'We are a training practice so we issued it to all our trainees as being a useful source of information.' [PCC: S/D]

'I do tell the student nurses about it. They know it's around and they know they can find out information about the hospital.' [TP]
5.5.2 Guidelines and protocols

‘The sort of information that I would be looking for is, protocols on, on treatment of certain conditions, guidelines….’ [SCP: S/D]

‘I do use the Pink Book because we have stored on the Pink Book available for use our policies and practices, it’s the guidelines mainly for our nurses.’ [NM: S/D]

‘Used it to look up protocols for referral to hospitals, specialist services…..contact information, consultants’ specialities and consultants’ sub-specialities actually.’ [PCC: S/D]

‘We are searching for things like protocols mainly, medically related, and also sometimes to keep up-to-date of what’s happening in the trust really.’ [TGC]

5.5.3 Checking personal / unit entry

‘I was just checking, rechecking the details of our service, ’cos we have had quite a lot of changes within the last four years and to make sure that our details were correct….’ [AS]

‘I mean it was basically when I was reviewing what information I had on the Pink Book and comparing it to see if, to other sort of people who have put information on, to see if you know what else would be appropriate and how else I could actually use it to put the information across….’ [SCP: S/D]

‘I was asked to update our information so I got, I thought, Oh let’s see what’s on, what’s on there and I just looked up our bit on it.’ [CP]

‘Well, I have been……in a sort of checking thing because we have been putting our labour ward and maternity protocols into it, and I have been really only looking at it to review those protocols that are in there to check that they are OK and….one checks one’s own details and one's colleagues’ details.’ [SCP: S/D]

5.5.4 Personal use as directory

‘……sometimes availability of people and you know where they are at each particular place.’ [SCP: S/D]

‘To find out mainly consultants’ clinics’ times and places, that sort of thing you know. The days they run clinics, ’cos obviously we work in a different area so…….also sometimes I think it's useful to know about the people working within the trust as well, you know contact numbers.’ [DN]

‘……looking for a location and whether the service was held there.’ [PAM]

‘Yes, when I was a GP I used it when I wanted to access hospital consultants, and one of the useful things it had on the original paper version and I don’t know if it still does on the electronic version was the times and places that they were happy to take phone calls. And I found that incredibly useful.’ [SCP: S/D]

‘…..I work across different trusts…….I am looking for contacts. What I do changes so much as I sort of progress along through the year, then I need lots of different types of contacts and I find that I lift information from the Pink Book rather than go trawling somewhere else.’ [HBM: S/D]
5.6 Positive perceptions of the Pink Book

Whatever the main focus of the interviewees’ use of the Pink Book the primary benefits emerge as: immediacy of knowledge and local relevance. Practitioners were particularly enthusiastic about the links between primary and secondary care which are facilitated by the Pink Book and which have the potential to improve the referral processes.

‘…and of course the more you use it the more you realise that there are now clinical protocols and that is often quite useful to make sure the advice we have is lying in with the hospital.’ [PCC: S/D]

‘……being able to know immediately who I want to go to, you know to the community or whatever, primary healthcare services are fairly……easy, because it’s nice to use the you know, I can home in fairly quickly …..the format is nice I think.’ And later……’……the advantage is that it’s local, you know it’s about local services.’ [CN]

‘…who’s who and providing the services and what level of services they provide as well, so people looking outside of the trust can see quite quickly…..I definitely think that’s very good for patients and GPs to see what’s going on.’ [NM: S/D]

‘I think that the Pink Book and the way it is designed, the front page is particularly helpful.’ [CP: S/D]

‘And that sort of thing is, is really useful to be able to look up and see that somebody has this particular interest, expertise. And so on, and that would actually then save a referral and somebody coming to see the patient, say after two days then say, it’s not my speciality.’ [SCP: S/D]

‘Once it is fully updated I think it will be extremely useful.’ [SCP: S/D]

‘……it was nice to know that the GPs had the access to the information about the rehab service. It was very nice to know. And also that the GPs had access to who they could refer patients to medically because the consultants’ names were all on there and their specialities, and what their qualifications were and all that so, that was quite nice because otherwise I might have got quite a lot of calls from GPs saying, who do I refer this patient to?’ [TP]

The Pink Book has the capability to increase efficiency by providing organised and filtered information through a single resource, as illustrated in the following comments

‘…..you are going to have to read through a dozen research papers and you may not come up with the same simple answer that you will get with, just by looking at something like the Pink Book.’ [PCC: S/D]

‘Rather like having the soup, and the Pink Book is going to look round the grocery to buy the ingredients!……it’s excellent, it’s excellent.’ [TGC]

5.7 Factors that inhibit use of the Pink Book

Current issues that were raised fall into two main themes, firstly, practical and navigational aspects. Secondly, several interviewees raised the problem of currency of information on the Pink Book in its existing form. However, this may be rectified in the near future as information becomes increasingly available via an on-line version of the Pink Book.
‘It’s very user-friendly if you are used to it. With anything you first go into, does this fit into community services? Does it fit into hospital services? And that can just take a bit of time to know……. Yes, some services aren’t quite where you think they are.’ [PAM]

‘Yeah, I mean I found it quite, quite easy to use. You have to scroll down quite a lot, which, I mean I have to say is just a personal preference, I found that irritating after a while.’ [SCP: S/D]

Another person who was interviewed noted thought that the Pink Book was "attractive, but confusing."

‘…quite a lot of the information hasn't come on-line yet, so you find that it's not up and running yet.’ [CN]

‘It has to be updated.’ [TP]

‘The problem at the moment is, it is like a dead book. The version that I have got on my screen is not the live version that is up and running, and I can’t wait for that to be here so that I can be certain that the information that I have got is, is up-to-date.’ [CP: S/D]

‘I would like to know that it was updated frequently, at the moment I think we wait a bit for updates.’ [PCC: S/D]

‘I don’t know whether the Pink Book is updated and sent out on CDs, ‘cos that’s the other thing I've never had a new CD either so, perhaps it’s me, I could perhaps run backwards and forwards and say, please can I have new CDs as they’re available, but if I felt is was an updated information course I would certainly use it a lot more than a static CD-based information source.’ [SCP: S/D]

‘Yes, I, it’s in some places it wasn't up-to-date, so that was un-useful really.’ [PAM]

‘…I think my copy of it may be out-of-date, that's the only thing I'd say.’ [HBM: S/D]

‘…the printed word goes out-of-date very quickly doesn't it, I mean even if you're just having a, loose-leaf sheets in a book which should be fairly easy to update, which is what the original Pink Book was, it doesn't happen all that promptly does it, whereas you would hope that on the electronic version it would be much easier.’ [SCP: S/D]

The comments highlight the problems of information currency on the Pink Book, however it was acknowledged that a significant share of the responsibility for updating lies with practitioners and departments.

‘I am sad to say that in our department there are, it is quite out-of-date…but in fact I am partly to blame because the details of me, which are out-of-date, I should have supplied.’ [SCP: S/D]

Final comments in this section reveal perceptions amongst certain practitioners that a wider spectrum of appeal and relevance could be attained.

‘…I think most people know about the Pink Book, it’s just a case of how useful the information that’s on there at the moment is to the majority of people. You'll probably find a little glut of people that use it all the time. I don't know.’ [TP]

‘Because on the couple of times I have looked at it, it didn't seem to have worthwhile information in it.’ [PCC]
5.8 Additional sources of information used by interviewees

During the interviewees participants were given the opportunity to expand on their information behaviours and sources used. Their reflections show that, in addition to the motivation to use the electronic media as identified in Section 3.1, more traditional information sources are still a mainstay.

5.8.1 Personal networks

'This pattern of use of informal sources confirms the accepted thinking that nurses will, unsurprisingly perhaps, use local colleagues as a source of information. Reliance is also placed on local specialists, whether nursing or allied health.' (Urquhart and Crane, 1994 p241).

As illustrated by the above quote, personal networks are acknowledged as a preferred option for information exchange. Interviewees in West Suffolk reinforce this view.

If you've got a problem with looking for books, we talk to colleagues…I ask my colleagues, they are ten or twenty years in the job and the know whom to contact in which case.' [TGC]

'I asked my colleague who has been able to find out for me…I suspect he phoned another colleague who was used to dealing with this problem.' [SCP]

'I suppose I have been around for a long time, so I do know, I do know people to kind of phone up and ask certain things. I would phone a hospital switchboard and usually there is somebody around in the building here that would know the answer to whatever.' [N]

'If I don't have, don't have it, I discuss with my colleague…' [HV]

'...I tend to know who I need to see, and in fact it works the other way around that people tend to find me rather than me having to look for other people.' [TP]

'...but I've usually found, if I've wanted to know something I've actually rung the department…' [SCP: S/D]

'...and it's quite possible that if you are talking to another CN they'd know all about it, and they'd be more knowledgeable.' [CN]

'...but my secretary can find that out for me.' [SCP]

5.8.2 Personal/unit collections

The following comments illustrate the importance practitioners placed on having their own resource collection. This suggests that people have a preference for personally customised information repositories. The merits of these holdings are that they are easily accessible and are organised by the individual to suit their own information requirements.

'Well I do, I tend to keep my own list of names, you know, increase my own, my own list that I make...that I know if I ever need it again, it is fairly easy to access.' [CN]

'...I have been inundated with a lot of other things, and time's sort of flown by and I have just grabbed a bit of paper, or my old directory that I have made myself you know.' [AS]

'I would say I looked in our personal, in my own resource thing, you know.' [DN]
‘...I have got quite a lot of these protocols and guidelines actually in my office in, in files, and I find it, certainly being computer illiterate, easier to got to my files than to go to the Pink Book.’ [SCP: S/D]

'I mean we have our, I mean I have my own books and we, I have the resource centre.' [N]

These comments support earlier work, for example a study by J. Williamson cited in Urquhart and Crane (1994 p239).

‘An individuals' most frequently used sources of information were most likely to be their own (limited) collection of journals and their nursing colleagues."

5.8.3 Use of hardcopy sources and journals

‘...we've got directories ...of people and...we've got books with lists of people in.’ [PAM]

'Ve have this manual practice book...it's available, it's in the nurses' counter...we have this in the Sister's office, so everything is listed there, the phone numbers...' [N]

'You know, I get my own journals and things' and later 'Oh, I get all sorts of studies which are sent to me. ' [N]

5.8.4 The Internet

"Staff had become quite reliant on being able to use the, go into the Internet and pick stuff out." [CN]

5.8.5 Research groups

‘At the moment I base most of my guidelines and protocols on the ones which are developed by the clinical effectiveness group for [specialty]’ [SCP: S/D]

5.8.6 Library use

People use the library for a range of functions to support their clinical and educational needs. Several people offered positive statements regarding library skills' induction and training courses available through the library. Specific examples of library use included coursework, locating journals on the library Webpage, accessing the Pink Book on the Intranet, accessing the Internet and training on electronic resources. The library personnel are viewed as being keen to assist practitioners with information-related tasks.

'Library staff are brilliant.'[CN: Q]

‘...I mean in a way, I have to be frank, i've been really spoilt...I just ring up and "yes, we'll look" and they send me a list and I make my choice.' [HV]

‘...we'd do a search or whatever, or get the librarians to help us out......We could I suppose in theory, surf the Net for what we want, but actually...it's probably a waste of time especially when there's a library resource which is open.' [HBM: S/D]

'There’s always somebody to teach you what to do.' [N]
5.9 Information for patients

Currently, limited use is made of the facility to print out patient information from the Pink Book, some interviewees confirmed that they were supplying patients with this information. But many others said they had not yet made use of this function.

"Certainly, yes contact information definitely um, and in terms of the head injury advice, I think that you can say that our information is often a modified version. And if I am looking for instance, I gave you the other example of xxxx infections I do that with the patient in the room, I am quite happy to access information with them. And then we know that you know we are not going to have an argument, we have looked at it together." [PCC: S/D]

"Well, I suppose indirectly because some of our patient information is on the Pink Book. And so we can print off and give it to them from there." [SCP: S/D]

"…..about three months ago actually I did pull off details ……for somebody who had actually called in for counselling, and I was in this room and I just printed it off there and then." [AS]

However, the potential to develop the direct delivery of patient information from the Pink Book is recognised.

"Not yet, but I could see you know, I only started using it fairly recently. But I can see that there are you know, there will be occasions when it will be useful. In fact……..in some of the clinical services, some of the appointments they have, you now that sort of thing. I can give them phone numbers off that, and……I can envisage lots of things that might be very to them." [CN]

6 Future direction of the Pink Book

In keeping with the format and the ethnographic approach employed (grounded theory), we have allowed the respondents’ comments to formulate the themes and thereby shape the report. To conclude, we are therefore reviewing the suggestions and opinions that have emerged from the overall responses. It is hoped that these will operate as indicators towards the future development of the Pink Book as a resource to serve a wide and varied community of health professionals and patients.

6.1 The potential for developing patient access

Clearly, patients are encouraged to be partners in decision-making during medical consultations see Section 3.2.4. To facilitate this, patients need up-to-date and relevant information. Currently, some practitioners perceive that these needs are not always met, because information is not readily available.

"One of the reasons why I started a menopause clinic was because, because people were having such difficulty in getting information. If you've got a GP with a particular interest in the xxxx, that's the right place to go. But there are GPs of course, there are GPs whose interests lie elsewhere, and I saw that as an inequity of service to the women who suffer. It wouldn’t have mattered terribly much if our [specialists] had a particular interest, but none of them do. So erm, I was finding that our xxxx clinics were getting clogged up with women coming in desperation saying I must talk to somebody and I can't find anyone to talk to, and the better, you know the more well-off women were trekking down to London to private clinics because that was the nearest source of information." [SCP: S/D]

"I think the illness societies…should donate leaflets and booklets for patients to GP surgeries to give out. People don't necessarily want to pay for them but I think they should be available….They usually have a sheet publicising a local branch with a local telephone number but that's another hurdle that people have got to get over to get information, which is a barrier to getting information I think very often." [SCP]
'If they need some information, like for example, bereavement, we have, they have to go to the Patients’ Affairs, and you have these booklets and leaflets for them.' [N]

6.1.1 Benefits of patient access to the Pink Book

Interviewees were encouraged to express their views about patient access to the Pink Book. Benefits included information for patients about clinical investigations, communicating appropriate and accurate information, and filtering and branding of hospital information. In keeping with the ethos of the Pink Book as a community resource, many clinicians placed emphasis on information with a local focus, for example on what will happen to them at the various stages of their care and treatment.

'As it stands no, but certainly a tailored version of that, more things like what we do in xxxx surgery, more things like what we do in xxxx surgery I mean there are loads of other things that very, very good things that can be done with the Pink Book information wise and ……which are very useful for the patient.' [TGC]

'That could be encouraged. Provide access to the general practitioner, who would be able to give the patient a print-out of what it's like to go to such and such a clinic and what this investigation involves.' [SCP: S/D]

'……..we could certainly put basic information you know X-rays on there, and something about the risks of X-rays and the benefits of X-rays and how that'll all hang together, …………so some sort of vehicle for communicating that to the patient before they are sort of brought up against the buffers would be useful.' [SCP: S/D]

'And so it does strike me locally, if you've got a local organisation that is, whether it's West Suffolk Trust, whether it's West Suffolk and the Local Health Partnerships, whether it's the whole of Suffolk, whether it's the whole of East Anglia or the whole of the Eastern Region, if the health service is saying, this is the site to go to or these are the couple of sites to go to from which you'll find everything else, that's, they've got the potential to market that to their patients, in a way that any other, any ordinary site that's out there can't do, it just has to get itself known through the, whatever, virtual world, erm so, yes there's huge potential for it. As regards to actually showing people on the screen, well that's just one part of it really,…..' [SCP: S/D]

Whilst recognising the potential benefits some practitioners were wary about certain issues:

'Yes, um I don't think I would like to have patients’ ready access to the Pink Book, I think there would need to be a, a secure section which, patients don't have access to. But, I think equally if it's under the West Suffolk umbrella if there was a public section, or there is a public section but, if that was enhanced. Uh, I think that would be a good idea. One could then put um for example, the sheets of paper we give to patients instructing regarding operations that they are going to have, if they could go on, into the Pink Book.' [SCP: S/D]

'I think they could have access to certain parts of it……I don't know whether they are planning to publicise waiting times, that would be a good idea……I think clinical guidelines sometimes, could, some people may misuse.' [SCP]

'Advantages would be definitely more patient information, patients generally much more in control of things, it would reduce anxiety for patients if certain operation procedures could be explained on it. The downside would be to try to cater for every patient's need with every disease and every operation I think would be almost an impossible task.' [PCC: S/D]
6.1.2 Concerns about patient access to the Pink Book

As seen in the section above there are confidentiality and security issues to be considered. These problems are raised again in Section 6.2.2, which looks at more general security aspects of the development of a Web-based version of the Pink Book.

'Things like I would say, I mean giving out the addresses you know. How to get hold of you and that sort of thing……contact numbers and that sort of thing. Also, danger in that people could trace children, personal life, you know invade your personal privacy as well.' [DN]

'I suppose if patients can access it you need to be a bit more thoughtful about what you are doing……I mean only in terms of confidentiality, you couldn't put certain things on there that might be confidential, if there was patient information. I mean it's horses for courses isn't it.' [SCP: S/D]

'I wonder whether you might restrict the information that goes in the Pink Book if it was accessible to patients.' [PAM]

'…..anything to do with patient records probably won't be on the Pink Book, it'll be on our Intranet….patient information is on a need to know basis.' [NM: S/D]

'I think there are going to be certain aspects of perhaps consultant preferences and what they would like to do and wouldn't like to do that perhaps might be a bit sensitive. But then I suppose that is up to the individual to decide what it is they do and don't want to….‘[SCP: S/D]

However, as two participants mentioned -

'I think years ago somebody wants to speak to xxxx secretary then they're going to find the number anyway, they'll phone up the hospital number and they'll say can I have xxxx secretary and they'll get straight through so I don't think it's that serious a problem, but there are firewalls …….if necessary.' [HBM: S/D]

'I think with today's society we're pretty open aren't we? I think information about the consultants is something that could easily be shared with the public, to be honest. If they wanted to know who they needed to be referred to for a particular problem they could then go to their GP and say can you refer me to the cardiologist and give the name. I don't see that it would be a difficulty really. I mean if it's used incorrectly or, or, you know, if we're worried about crime and things like that, they still get, if they sent something to the hospital to the consultant cardiologist it'd still get there to them anyway, wouldn't it, …………and whether they got the name on the Web is neither here nor there I would have thought. And the services that we offer, I think it's important that they know really, what's available.' [TP]

For patients to derive benefit from information, it should be provided in a format and language that is appropriate to their needs.

'…..it depends on how you couch it and I think you have to be very clear before you go down that route exactly where you are heading, because I would put a slightly different emphasis on things and you know rather than putting a standard guideline, I would put sort of a bit more comment on it……certainly the guidelines, our national guidelines would be fairly unintelligible to your average layman.' [SCP: S/D]
'what xxxx whose day job is erm, software development manager for xxxx in erm, xxxx wants to know about either his, or his partner's depression, is not the same as what xxxx from down in xxxx wants to know about her depression. Because in his terms you put across in terms of neurons not producing such a such a chemical and different systems getting disrupted and blahdiblah, and in her terms, pills take three weeks to work, these are things you might get with this illness, this is how they go away, this is how long you need treatment. Completely different knowledge requirement, YEP, understanding of language et cetera et cetera.' [SCP: S/D]

'…..I don't think the public should have access to this particular site in the present format. The reason why, because a lot of the data makes assumptions about people’s knowledge and if you look at the data which you present on the current format, there is no, there is nothing about how it's used……..So I think that if they did make it accessible to the public we've got to have some concerns, because it could be taken out of context.' [CP: S/D]

6.2 Issues around the move towards a Web-based version of the Pink Book

People were asked whether they could see advantages and / or disadvantages to a Web-based version of the Pink Book. The following sections cover the advantages identified by interviewees and issues that would need addressing. A selection of quotes has been included to illustrate the topics raised.

6.2.1 Advantages of a Web-based version of the Pink Book

Accessibility
Broadening scope to include national information
Comparing resources with other areas
Currency
Current awareness
Developing the existing research base
Exchange of ideas
Frequently asked questions
Holistic approach to information provision
Home access
Information about hospital
Interactivity
Inter-disciplinary awareness
Local information for patients
More detailed information
More patient information
Platform for guidelines & protocols
Policies and procedures
Promoting what the hospital does
Reducing barriers between professionals, carers, and patients
Widening the audience

'The advantages of having it Web-based is that you would put all your procedures onto here, and so no-one could have any complaints, that they couldn't find policy because everyone would know that they are all on here.' [CP: S/D]

'The other thing of course is the map, particularly for junior staff which, they are rotated in six months to one year's time.' [TGC]
'I mean even if you're just having a loose leaf sheets in a book which should be fairly easy to update, which is what the original Pink Book was, it doesn't happen all that promptly does it, whereas you would hope that on the electronic version it would be much easier'. [SCP: S/D]

'...and what I get is sometimes letters asking for our information and if I had a Web address to enclose in the letter that would be you know.....then they can get onto it you know a site, or I can just tell them over the phone.' [AS]

'I think also Web pages feed back information to the person who is providing them, so they know what's popular so they can re-define what's going on.' [PCC: S/D]

'Well I think the advantage is you know, they would know where services were, if they could access them more locally than perhaps trailing up to the West Suffolk hospital.' [PAM]

'...I think it would be used more and be accessed by general practitioners and particularly the people who are very often coming for relatively short periods of time to the hospital, and would be able to use that.' [SCP: S/D]

'Advantages, probably that it would get a wider audience, which would not just include professionals, but possibly users of the service which I think then could probably help widen the.....amount of information that's on it.' [CP]

'......what you'd do is you'd take stuff off other sites, or you'd put links in, something like that, that would say that this is what West Suffolk hospital approves of as being stuff, which we think talks sense.' [SCP: S/D]

6.2.1.1 Integrated care pathways

As a supplementary question people were asked whether they thought there was a role towards multi-disciplinary patient-focused care e.g. integrated care pathways. Most of the responses were positive and the potential for this development is identified below.

'I do, I think there is great potential there. Integrated care pathways in particular, and if we could find some way of finding every discharge policy and procedure that allow those to, to collect patient data all together and communicate with one another. [CP: S/D]

'Yes, I am sure that the Pink Book would encourage that because it would allow you in the comfort of your own office or home to, to see what the other teams are thinking without actually having to call them up.'[SCP: S/D]

'It might help break down some barriers. It has the advantage that because it's on a computer screen, it doesn't, it's not coming from anybody, it's coming from the machine.' [SCP: S/D]

6.2.2 Confidentiality, security and legal issues

A number of respondents highlighted the possibility of security risks inherent in a Web-based version particularly if there was full public access. Potential ways of overcoming this problem were suggested and included password protection and qualified access to specified areas of the Pink Book.

'......if you put something onto the Pink Book which you passionately believe in here and somebody acts on it somewhere else. And yet it doesn't turn out to be right, then there
are all sorts of legal ramifications and that would, and that was our departmental worry about this, the responsibility for the information there and in its misuse and interpretation and litigation.' [SCP: S/D]

'The worry about the Web generally, is the question of confidentiality and there would be certain things that I feel that we would be a little bit worried about putting onto a, onto a Web-based [version].' [SCP: S/D]

'…..or if you were given a password to start with, so a GP might sort of phone up and say I want access and my GP number is, and you check him out and the you give him a password and then he can get in, now that's a possibility. And then you want to restrict certain areas of it, like the internal phone directory or whatever, and just leave mainstream information out there, that would protect from the merest possibility of …..difficult phone calls.' [HBM: S/D]

'It would allow interchange of ideas I suppose, but I would, I would want it to be password protected, I have a problem with everything being made available to the public. I think there would need to be two sections, there would need to be a section for medical staff usage, password protected, and a public version.' [SCP: S/D]

6.2.3 Maintenance and updating
A major implication for any information resource of this type is maintenance and this was reflected in the number of comments relating to this issue. As can be seen in Sections 5.7 and 5.8.2 above many respondents had concerns about the currency of the information currently available in the Pink Book. Some people identified improved currency of information as a benefit of a Web-based version. However, this is not without its drawbacks and a cohesive editorial policy in tandem with the co-operation of practitioners in providing timely information would be imperative.

'Disadvantages, editing, editing is a major disadvantage because it requires people to be reminded that they need to update their section, and therefore you have got to have a system in place to remind lots of people. But, for those people who have got big sections that is quite a lot of work.' [CP: S/D]

'I think it would be, possibly be harder to put up the information from my experience of using Websites, you know for other reasons I think it's, it would be a slower process.' [PCC: S/D]

'The only problem is that, is that it means we have then got to update that ourselves, which is another time pressure.' [CP]

6.2.4 Assuring quality and relevance
A successful maintenance policy should ensure quality and relevance of information and provide a seamless and accurate resource.

‘…..because there is a danger that if we don’t give our patients our own local accurate information then they will get it from other sources and we can’t always validate the quality of that information.’ [TP]

6.2.5 Raised patient expectations with implications of time costs and risks of complaints
There is potential for the Pink Book to become a victim of its own success and raise public expectations to an unmanageable degree.
'And, I suppose that could also be a disadvantage for the medical staff because it would be: I want to see this chap this is, he is a specialist….I mean from the medical point of view I can see it could be worse. From our point of view you could end up spending longer explaining why they are under such and such a doctor and that type of thing.' [N]

'…..it’s nice to be kept on your toes and to try and reach your standards but sometimes people’s expectations are too high. And of course once you have given a standard….it could lead to quite a lot of litigation, or complaints at least.' [PAM]

6.3 Suggested content and presentation
Interviewees were asked about possible enhancements to the Pink Book. Their responses, along with other suggestions made during the course of the interviews and from the questionnaires, fell into several categories as itemised below.

6.3.1 Guidelines and protocols
'I think protocols, guidelines which, not just hospital ones but things that have been agreed by both a hospital and general practice actually.' [PCC: S/D]

'Clinical guidelines, on managing specific complaints. The sort of things which are maybe available in text books but other maybe specific ways of doing something locally which is useful to know about.' [SCP]

'There is one thing that I don't see, all the references written down. There's a huge number of references I know, but it just depends on the trust that the references are reputable…..I have to look it up myself, if there is what, every guideline, have four guiding articles, they might have hundreds but there'd be four major ones that would be much easier.' [TGC]

'…..but my feeling is, to go on the Pink Book would probably be a link to the national guidelines.' [SCP: S/D]

6.3.2 Information to facilitate referrals and inter-organisational networks
'I see myself as a salesman in a way, and I operate particular products and so there is no point in somebody coming to me for a product that I don't offer, and because I offer a particular product it would help, the Pink Book would help in advising those, …..general practitioner patients on what I would perceive as being prerequisites to a referral so that, that would speed up the patient's investigations and or treatment…….That is displaying my shop window perhaps more than anything else…….' [SCP: S/D]

'What I would like is to be able to access GP details for all the PCGs for instance with all the GP directives on the directory. …..I would like to be able to access all the pharmacists in town, their email addresses. And I would like to be able to send emails to them directly because that information would be sort of directly linked. So I would like it to be more flexible than it is.' [CP: S/D]

'Possibly more information, joint information with the social service 'cos we are more and more you know working with social services.' [CN]

'I think, gradually we'll start putting onto there a copy of the care pathways that we use within the trust.' [NM: S/D]
'Presuming that GPs and what have you are looking at it, I think it would be useful to have the referral criteria for xxxx exams on there and then obviously the contact information that is on there……the duties of referers and legislation.' [SCP: S/D]

To pinpoint the information required by both parties in the referral process, questionnaire respondents were asked to answer one of the following if appropriate:

1. What types of information would you wish to have about consultants to help with referrals?

Or

2. As a consultant, what information would you like to make available to primary care and community staff for referral purposes?

In answer to the first question practitioners listed the following items:

Full range of responsibility within their role.
Other contactees appropriate to consultant specialism
Contact number if they have an out of hospital contact number they are willing to be used
Their job role
Services offered
Waiting list times
Would welcome more information about special in-patient units for children across the country – not just health services
Interests
Availability
Experience
Treatment methods
Outcomes of their work
List of hidden agendas
Their current protocols for rehab
Info sites for their surgery
Pink Book – must be constantly kept up-to-date
Clinic times
Private work – or NHS only
Fee information and place of private consultations
Investigations used before referral
Up-to-date lists of consultants in each speciality in each centre
Types of referrals they want and don't want

Consultants expressed a wish for the following information to be made available about themselves:

Right time to refer
Clear information about referrals I will accept and those that are more appropriate to other colleagues via Intranet
Timing of referrals / urgency lists (priorities)
Pre-op guidelines
Some guidelines – which are shared
Information leaflets used between primary and secondary care
General departmental information
Waiting times for appointments and admissions
Special interests
Location of clinics
What I regard as inappropriate referrals
Referral protocols / guidelines including some treatment hints
Job sharing
Indication and contra-indications for imaging investigations
Patient instructions and preparations

One respondent took the opportunity to make a request on behalf of their service:
'I'm NOT a consultant! Would like people to know how to refer to our service and the nature of what our service comprises.'

6.3.3 Patient information
The issue of patient access to the Pink Book has been discussed elsewhere in this report, Section 6.1. Clinicians would like to see more patient information available, even if it has to be mediated by them.

'I think more patient information, but I am not really sure how patients are going to have access to it.' [PCC: S/D]

'I think it would be nice to have perhaps more information for patients, I mean I am a great believer in not re-inventing the wheel so....there are some very good sites....perhaps to have a link to. So that GPs could you know give out the information that we give out because I mean certainly, they aren't going to stock the same range of leaflets and things that we would so that they can actually give the patient the information as well. As I say there seems little point in me writing something if somebody has already done it and they have provided excellent material.' [SCP: S/D]

6.3.4 Strategic information
Some clinicians advocated making as much information as possible available about the personnel, set-up and running of departments. A few mentioned that adding photographs of staff members could enliven the presentation. However, some staff – from certain specialisms where confidentiality and personal security may be more of an issue – are justifiably cautious about open publication of their contact details and photographs.

'.....I think that now because we are a bigger trust I would like to see a bit more, because our base has changed, like things like personnel or finances and that.' [DN]

'.....there is probably no reason why we couldn't have department breakdown about ......how the hospital runs and who does what, and you could actually describe.....how the physio department works. It is all very well talking about waiting lists and access and referrals, but you can actually have illustrations and descriptions of who works there, how the day works. You could actually have photographs....actually use it as an opportunity to publicise more of the work of the hospital.' [TP]

'My photograph is staying under wraps at the moment.' [SCP; S/D]

6.3.5 Improved navigational functions and other features
Some people expressed the need for more user-friendly access to the Pink Book and there is obvious support for the enhancements that will come naturally as part of the move towards a Web-based version. Further development is dependent upon management strategy, and resources available to the designers of the Pink Book, but there could be potential for enhanced services such as the alerting service alluded to below.

'.....so I could put a Netmind on the site, so it could tell me that something had changed and then I'd zip into it and download the new phone book or whatever it is that was new, but obviously one would need to know what was new every time it was updated, so there
7 Conclusion

This report has demonstrated that the ethos of the Pink Book is well supported, although current usage is inhibited by limited access to its Web-based format. Fortunately, some people are able to take advantage of the library’s connection to this facility. Because many people are restricted to the CD-ROM version the information available to them has become outdated. Lots of people hope that the use of a Web-based version will smooth the way to a service that can reduce the existing problems of information currency, and access.

With a resource such as the Pink Book, ease of access to useful information is critical. The concern for the development team is to establish what information is most appropriate to the needs of its target users. The report has shown that the original drivers of the Pink Book i.e. a directory resource to promote communication between primary and secondary care providers, are still relevant. However, changing priorities and strategies in medicine mean that new components such as guidelines and protocols will be incorporated to satisfy the increasing demands of multi-disciplinary team working and professional accountability.

At the current time, the themes identified reflect a general awareness of the Pink Book. However, this is limited and many participants were not aware of the scope of it in its existing format. The conversion of the Pink Book into an on-line resource may provide the ideal opportunity to “re-launch” and promote a much wider and more comprehensive appreciation, and ultimately use of this communication tool.

‘I mean it’s something that’s got hospitals a certain amount of street-cred, everything….they've had awards for it and things like that, but it could languish if you're not careful, so it's nice to see that things are going forwards.’ [SCP: S/D]
References
Appendix 1: Details of numbers of survey participants and job categories of interviewees

<table>
<thead>
<tr>
<th>Interviewee job role</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative staff</td>
<td>1</td>
</tr>
<tr>
<td>Clinical practitioner</td>
<td>2</td>
</tr>
<tr>
<td>Community health management</td>
<td>1</td>
</tr>
<tr>
<td>Community nurse</td>
<td>3</td>
</tr>
<tr>
<td>District nurse</td>
<td>1</td>
</tr>
<tr>
<td>Health visitor</td>
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</tr>
<tr>
<td>Hospital-based management</td>
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</tr>
<tr>
<td>Nurse</td>
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<td>Nursing management</td>
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<tr>
<td>Professions allied to medicine</td>
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</tr>
<tr>
<td>Senior clinical practitioner</td>
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<tr>
<td>Teaching post</td>
<td>2</td>
</tr>
<tr>
<td>Training-grade clinician</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix 2: Interview schedule

1. Check details [name, job title]

2. Do you use the Pink Book?

3. (A) If yes, what have you used it for? [e.g. type of information required]

[Go to question 4]

(B) If no, why haven’t you used it?

[PROBE:
Where do they go to find this type of information? e.g. guidelines and protocols
contact details e.g. of consultants
details of consultants’ interests
clinic times
admissions procedures

Where do their patients go for information? e.g.
external agencies
support services
pre-admission information]

[Go on to question 11]

4. Please think of one specific occasion when you used the Pink Book:

(A) What were you looking for?

(B) and why?

(C) What were you expecting to find?

(D) Did you look anywhere else other than in the Pink Book?
(E) What did you find?

(H) Were you satisfied with what you found?

(I) How might that information be useful to you in the future?

5. Are there any features of the Pink Book that you have found useful?

6. How easy to use have you found it?

7. Are there any enhancements you would like to see?  
   [PROMPT: Other information they would like to see on there? More information for patients?]

8. Where do you usually access the service from [e.g. library/practice]?

9. How often do you use it on average?

10. Have you ever supplied patients with information taken from the Pink Book?  
    [PROMPT: example?]

   If yes. Do you have an idea of how satisfied the patients were with the information supplied?  
   [PROMPT: cf. appeal of glossy PILs]

11. Do you see potential for a web-based version of the Pink Book?  
    [PROMPT: Would they use it more if it was web-based?  
    What advantages/disadvantages would a web-based version have?  
    Do they have concerns about information appearing on a web-based version, if so, what kind of information are they worried about?  
    Would they like to see full patient-access to the Pink Book?]
12. Do you see a role for resources like the Pink Book in the move towards multidisciplinary patient-focussed care?
   (PROMPT: development of Integrated Care Pathways, record-sharing)

13. Are you aware of patients' use of the Internet to obtain information?
   [PROMPT: How does this come into the consultation? Can also consider patient-access to resources like Cochrane]

[THANK THEM FOR THEIR TIME]
Appendix 3: Questionnaire

How do you go about finding the information you need?

*Please answer the following questions by placing an "X" between the "[ ]" or by writing an answer.*

*When you have completed your questionnaire, please return it in the Freepost envelope provided.*

1. In your work, which sorts of organisations and experts do you need to contact? (please tick all categories that apply to you)

   Primary care groups [ ] (1)
   GPs [ ] (2)
   Hospital consultants (local) [ ] (3)
   Hospital consultants (non-local) [ ] (4)
   Health Authority [ ] (5)
   Community Health Council [ ] (6)
   National Centres of Excellence (e.g. the Institute of Child Health, the Institute of Ophthalmology, etc.) [ ] (7)
   Social Services (please specify which department(s) below) [ ] (8)
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………

   Community Trusts (please specify below) [ ] (9)
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………

   Voluntary organisations (please specify below) [ ] (10)
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………

   Other (please specify)
   ………………………………………………………………………
   ………………………………………………………………………

2. Are there any organisations or experts that you find difficult to contact due to problems locating relevant names and/or contact details, etc.? (please give details of organisation/expert and information you need)
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………

3. (A) Where do you currently look for information about guidelines, protocols and clinical governance?
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………
(B) What are the problems, if any?
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5. Where do your patients go for information about the following?
   (A) Support services
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………
   (B) Relevant external agencies
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………
   (C) Pre-admission guidance
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………

6. Please answer either part (A) or part (B) if appropriate.

   (A) What types of information would you wish to have about consultants to help in making or assisting with referrals?
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………

   (B) As a consultant, what information would you like to make available to primary care and community staff for referral purposes?
   ………………………………………………………………………
   ………………………………………………………………………
   ………………………………………………………………………

Thank you very much for your help. All replies will be handled in confidence and all data will be anonymised.
Appendix 4: Breakdown of details given by those respondents to Question 1 of the questionnaire who expressed a need for contacting Social Services, Community trusts, Voluntary organisations or ‘Other’.

**Social Services**
- Information department: 1
- Family: 1
- Fertility and adoption: 1
- Local Mildenhall Centre: 1
- Homecare: 2
- Learning disabilities and mental health services: 2
- Outreach services: 2
- Housing department / association and benefits: 2
- Health, community care and old age: 4
- Social workers, Social Services and equipment stores: 5
- OTs and health visitors: 5
- Children's services and agencies: 11

**Community trusts**
- Inter / intra communication with community trusts: 8
- Lifespan: 5
- District nurses, physiotherapists, and OTs: 3
- Local Health Partnerships: 2
- Protocols and procedures: 2
- Local issues: 1

**Voluntary organisations**
- Mind: 7
- Cruse and NIKKIS Way: 4
- NCH Action for Children: 3
- Advocates and CAB: 3
- Community education access and local schools: 3
- Red Cross: 2
- Arthritis Care and Osteoporosis Association: 2
- Help the Aged and Meals on Wheels: 2
- Young Minds: 2
- Relate and Children in Divorce: 2
- Home Start: 1
- Toddler / playgroups: 1
- Papworth Trust Wheelchair: 1
- Breast Care Support: 1
- St Louis Service: 1
- Family Centre: 1
- ME Association: 1
- Diabetes UK: 1
- Anglia Care Trust: 1
- Charity furniture stores: 1
- Dementia Association: 1
- MS and MND societies: 1

**Other**
- Group IV, police, youth offending and probation: 5
- Local and national child psychology societies / groups: 3
- Jockeys’ Welfare Fund and racing charities: 2
- Advisory teachers: 1
- University researchers: 1
- Education Department: 1
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<td>Other occupational funds</td>
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Abstract

The electronic-resources training programme run by Cornwall Library Services is one of six projects investigated by the Value and Impact of Virtual Outreach Services (VIVOS) project. The aim of this research is to evaluate existing health information outreach projects. It will use the findings and the cumulative experience of information professionals at the research sites to inform project management guidelines for the successful implementation and application of future programmes. A range of research methods was adopted with a view to identifying those that are most appropriate to evaluations of this nature. The aim of the VIVOS research at the Cornwall Library Services site was to evaluate the training programme and to attempt to establish the impact that it has had on the use of electronic resources by the course participants.

A mix of hospital- and community-based health professionals from the area were surveyed through the use of semi-structured interviews supplemented by vignettes. Qualitative data methodology was the preferred approach because in-depth analysis was required and data handling was facilitated by the use of the NUD*IST 4 software program. The structure of the report parallels the themes drawn out during data analysis.

Acknowledgements

The VIVOS research team is grateful to all the Cornwall staff who participated in the evaluation of the training sessions. Without their participation in the survey-work there would be no evaluation. The Cornwall Library Services team provided invaluable advice and support, which is gratefully acknowledged. The team is indebted to Re:source for funding the VIVOS project.
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMED</td>
<td>Allied and Complementary Medicine Database</td>
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<td>AS</td>
<td>Administrative Staff</td>
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<tr>
<td>BNI</td>
<td>British Nursing Index</td>
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<tr>
<td>CINAHL</td>
<td>Cumulative Index to Nursing and Allied Health Literature</td>
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<tr>
<td>CN</td>
<td>Community Nurse</td>
</tr>
<tr>
<td>CP</td>
<td>Clinical Practitioner</td>
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<tr>
<td>CPE</td>
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<td>Evidence-Based-Medicine</td>
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1 Introduction

1.1 VIVOS aims / objectives

VIVOS was a one-year project running from February 2000 to the end of January 2001. It was conducted by the Department of Information and Library Studies, The University of Wales Aberystwyth and received funding from Re:source – the Council for Museums Archives and Libraries. The research team was based at Aberystwyth and collaborated with information professionals from Cornwall, West Suffolk, Salford and Trafford, Leicester, South Humber, Devon and North Thames to assess the Value and Impact of Virtual Outreach Services. Development of research skills by the information professionals was seen as an integral part of the project.

The project had three main aims. The first two related to work carried out by health libraries to promote ease of access to information sources, particularly amongst primary-care and community staff. Outreach services should promote access to information resources for all healthcare staff and it is therefore important to establish a toolkit of methods for assessing the effectiveness of the services themselves and of associated training programmes. The VIVOS definition of ‘Virtual Outreach Services’ was fairly broad and covered any services that enable healthcare professionals to access pertinent information without physically coming into the library premises. In most cases this equates to electronic information sources, but at one of the VIVOS research sites it involves the dissemination of a hardcopy digest of topical evidence-based issues.

The third aim of the project was suggested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via the People's Network. This proved challenging since the People’s Network is not yet established enough for an evaluation of its role in supplying health information to the public. The project team therefore decided to concentrate on locating schemes that are currently operating and on investigating healthcare professionals’ attitudes to provision of health information on the Internet. The researchers also looked at links established between the librarian at one of the VIVOS research sites and local public-library staff and observed a training session on using evidence-based sources. As a supplementary question at the Cornwall site respondents were asked about the provision of information to the public. Discussion of the responses to this question will be included in the full project-report.

The five original sites selected for participation in the VIVOS study were chosen because their outreach services were already established. This had the advantage that a certain amount of baseline data were already available but also gave the opportunity to investigate how to maintain the momentum of projects beyond the initial enthusiasm. The sites were also selected because they provided a variety of project types and environments. Two additional sites (Exeter and North Thames) were included once the project was underway. A specific aspect of each project was identified for evaluation by VIVOS:

- **Cornwall**: An electronic-resources training programme run for community staff by Cornwall Library Services.
- **Bury St Edmunds**: The Pink Book developed by library staff at the West Suffolk Hospitals' NHS Trust, originally as a directory of information for primary care clinicians.
- **Salford and Trafford**: A three-day training programme to accompany the e-STABLISH project.
Leicester
A feature of the Trent Futures project giving remote access to NISS Biomed databases through the issue of Athens passwords.

South Humber
The bulletin *evidence matters!*, a regular digest sent out to local primary-care and community staff alerting them to topical issues in clinical effectiveness and evidence-based practice. This investigation also looked at access to the CINAHL database and the information-related problems faced by nursing staff in community settings.

Exeter
The Website set up by Exeter Medical Library.

North Thames
Additional data analysis for an existing database-access project evaluation.

This report is part of a set of preliminary reports produced for each of the participating sites, primarily to give an early indication of the results of each site evaluation. Work is still continuing on the data analysis and the full project-report will discuss common themes and issues raised across the site evaluations. The final report will draw upon the collective experience of the information professionals from the sites, along with the observations of the research team, to produce a set of guidelines to help other information professionals wishing to develop their own services. The results of the investigation into attitudes towards health information on the Internet and provision of health information to the public will also be presented at a later stage.

1.2 VIVOS and the Cornwall Library Services training programme

The Cornwall Managed Network serves a wide community of health professionals across the region. The staff of Cornwall Library Services recognised the potential benefits of a high-profile presence on the Network at an early stage and, in fact, the library pages were amongst the first to appear. The library staff also realised that the value of the site was limited unless people received training on how to access the resources effectively. The importance of library involvement in any proposed training was recognised and funding was secured to allow the development of a training programme run by librarians for staff in community hospitals. The training programme was launched in September 1999 and has since been extended to cover a number of primary- and community-care practices as part of an initiative to supply Primary Care Groups with PCs and printers.

The hospital-based training has been conducted at five community hospitals and, at the time of interviewing for the VIVOS project, ten primary- and community-care practices had been contacted although the roll-out of training had not been completed.

With the exception of two hospital sites (one 'control' site where no questionnaire was sent out and one site where staff had only recently received an IT-skills questionnaire) all sites were sent a pre-training questionnaire in an attempt to establish levels of IT experience and to identify training needs relating to medical databases and searching on the Internet. The hospital questionnaires were sent out in July 1999 and aimed primarily at nursing staff. The replies to the questionnaires helped identify suitable candidates for the training programme and invitations to the ongoing programme of training sessions were sent out over a six-month period from September 1999. Questionnaires for the primary- and community-care practices were sent out early in 2000 and the training sessions for these groups began during the summer of 2000.

Funding allowed for one library assistant to conduct the training sessions for one day per week. The library assistant therefore had to visit each site on a rotational basis and in the community hospitals several sessions with small groups of trainees (five or six people on
average) took place over time. The training programme also included drop-in sessions for members of staff requiring assistance with database and Internet searching Internet skills.

The drop-in sessions were initially intended as follow-ups to the original training but, in practice, they were attended by a mixture of staff from different job types who had heard about the training through colleagues or seen it advertised on library promotional literature. The library staff encouraged this and see the issue as one of ongoing development. Similar course-content was delivered at each session (see Appendices for a list of topics covered) but the library staff decided to tailor each session as required to suit the IT experience and confidence of each group of trainees.

The aim of the VIVOS research at the Cornwall Library Services site was to evaluate the training programme and to attempt to establish the impact that it has had on the use of electronic resources by the course participants.

2 Methodology

2.1 Population surveyed

Twenty-five names were selected at random across the five main hospital sites from details of course attendees. Where possible, the sample was stratified to include different job types but this information was not always available. Once the initial random sample had been made library staff arranged the interviews, when necessary selecting replacements based as much as possible on job-types of people they were unable to contact from the original sample.

For logistical reasons, interviews at two of the hospital sites were postponed by two months. During these two months the training programme was extended to primary- and community-care practices across Cornwall. It therefore proved possible to include interviewees from three of these practices in the survey. These participants were selected and contacted by the site librarians.

In all it was possible to arrange twenty-six interviews.

For the purpose of this report, individual respondents are identified by job category to protect their identity. The sites are identified by number: H1–H5 for hospital sites and C1–C3 for primary- and community-care sites. The authors feel that it is important to attribute job type as this has a bearing upon an individual’s ‘world view’ of their work environment (Checkland and Scholes, 1990; Mason and Willcocks, 1994). Details of job categories and numbers of survey participants are presented in the Appendices. Quotes that are used are verbatim.

2.2 Methods employed

A qualitative approach was followed using semi-structured interview schedules and these were administered at the interviewees’ place of work. Where appropriate, (and where time permitted) the interviews were supplemented with vignettes (Chell 1998). A vignette is a hypothetical scenario used to ascertain a respondent’s approach to solving an information-seeking problem. As far as possible the vignettes were designed to have relevance to the interviewees’ job roles and to reflect topics of current health interest, for example issues raised in the mainstream medical press over the last year. The interview schedule was designed in consultation with the site librarian at Cornwall Library Services. Copies of the interview schedule and vignettes are included in the Appendices.
2.3 Chronology of site survey

The first round of interviews was conducted in late July. The second round which included the three primary-community-care practices took place in September. The tasks of transcription and analysis were carried out between September 2000 and January 2001. Textual analysis was completed using NUD*IST 4 software.

2.4 Navigation of report

The structuring of the report corresponds to the emerging categories and themes from this process following the 'grounded theory' approach developed by Glaser and Strauss (1967). These concepts are used as a framework for this report, rather than simply listing responses to the questions. The sub-heading structure is designed to facilitate ease of reference to specific issues and themes.

Following this interim report, there will be formal discussion of the preliminary results with the site librarians to further validate the findings prior to preparation of the final report.

3 Work environment

The following sections illustrate people's daily work environments and the factors that impact on them. Themes and categories emerged through spontaneous discourse with interviewees. This spontaneity was facilitated by the semi-structured approach to the interviews.

3.1 The trend towards patient and family involvement in decision-making

The current climate in medical care has shifted the responsibility for many health care decisions to the patient, while at the same time providing little basis upon which these decisions can knowledgeably be made. (Honig and Calvano, in Calvano and Needham, 1996 p.255).

The increasing need to involve patients and their carers in active decision-making about treatment and care-management impacts directly on the working patterns of practitioners. This is directly related to the trend towards patients as consumers of healthcare in government directives such as Information for health: an information strategy for the modern NHS 1998-2005 (Department of Health, NHS Executive, 1998). Practitioners are responsive to this approach and feel that patients should have the information necessary for them to participate competently in the decision-making process:

'So we sort of give them all the relevant information, and most people will make a decision from there. But you know other people will sort of go away and look on the Internet and want to sort of do their own research into it before they make a definite decision.' [CN: H5]

'Well I think, I you know, I think it's a good idea. I think people should be more informed and know more about their condition and the care they should be receiving.' [CN: H1]

'Yes, I mean I think they have got a right to, to be able to access whatever information we can access basically. Because you know, patients have got a good understanding of information. So I think whatever is available to us should be available to them.' [CN: H5]

'No problem, no problem at all…. I think the more information they have the better, the more informed they are the better. Within limits of course.' [PCC: C3]

As this last practitioner indicates, greater patient–involvement in decision–making has generated its own problems. To enable patients to participate knowledgeably they need to be able to understand and contextualise the information they have access to. And this in turn engenders a new role for practitioners as mediators of information.
'I think it could be dangerous in the wrong hands....I think it could worry them if they weren't, if they didn't have the medical knowledge to understand what they were looking at.' [CN: H2]

'I think if they got information off the computer, if you are not anyway trained in medical jargon, shall we say, you could misunderstand things. And so I think they would need to be aware to perhaps take advice if they accessed information that they didn't understand.' [AS: H4]

'......I want them to know about the good sites where they can get good balanced information, not where they come away with a very sided view of something.' [CN: C1]

'......it only gets into a journal if it has been cleared, it's been checked that they hadn't got any financial motives or you know, the research has been done properly. You know it's quite a different matter isn't it, what goes into a journal but anything can go onto a Website and then patients access it. A lot of the time we are having to educate the patient, "well just remember is this true?"' [PCC: C3]

This will obviously challenge the traditional practitioner–patient relationship.

'I think some professionals may feel threatened by......patient empowerment, but it is also the patient could well get confused or very doubting. If you haven't got that trust......it is always challenging the relationship but it can make the patient–therapist or the patient–doctor relationship much more difficult.' [PAM: C1]

'......using information merely for retrospective accusations and for retrospectively assessing whether someone did their best, is actually not the best use of information. Or, information should be used for guidance towards the best decision at the time, rather than to tell you what you did wrong in the past....' [PCC: C3]

The evolving role of patients as consumers has raised their expectations of improved personal health, with obvious consequences for healthcare professionals. As illustrated in this British Medical Journal editorial,

In countries where patients can participate in the choice of treatment the Internet could potentially be a rich source of information on treatment options, but meeting patients' expectation and managing their requests presents an important challenge for providers of health care. (BMJ, 1996 p. 3)

'So I think there's awareness, people's expectations are higher than they used to be.' [CN: H3]

'....I think everybody should have a choice of what they want or, you know, I think some of them sometimes are a bit unrealistic.' [N: H2]

'They can get the wrong bias, and they can be led to expect things which are not appropriate to their case........They can therefore be disappointed, or indeed argumentative.' [PCC: 3]

Whilst practitioners cannot be expected to know everything about all aspects of medicine, the onus is on them to keep up–to–date with information in their field.

'Yes, yeah, better informed than we are! Which is why, you know, which is why we've got to keep up with it really.' [CN: H1]

'I think that a little knowledge can be a dangerous thing. But on the other hand, if you are not keeping yourself up-to-date and you are giving people out-of-date information then yes, I think you should be challenged about that. And I know that there are some
3.2 Integrated and standardised care

As an implication of the moves towards professional accountability health authorities are seeking to standardise documentation of treatment interventions and management of care. This is facilitated through the use of guidelines and protocols.

Clinical guidelines based on the systematically analysed results of research and carefully introduced to doctors can improve clinical practice and outcomes. (Feder, 1994 p.1457).

‘……our guidelines are certainly updated annually.’ [CN: C1]

‘……we have to keep checking out the protocols.’ [N: H1]

‘……we have used it for other bits and pieces, perhaps if we are looking for protocols and things like that.’ [CN: C3]

‘……and we are kind of incorporating some of that within the publications that we are getting with the National Guidelines behind why we set up the groups….’ [PAM: H4]

3.3 Evidence-Based-Medicine

Another aspect of standardisation of care, involves a greater co-operation and information exchange between health professionals. This also helps to promote good practice and the application of EBM.

‘……we actually have a forum whereby all the community [PAMs] in Cornwall meet up, and we try to look at kind of some of the evidence behind the rationale of community–based therapists.’ [PAM: H4]

As NHS clinicians address the obligation continually to review and improve personal effectiveness through evidence-based-practice and clinical audit’. (Department of Health, NHS Executive, 1998).

Patient care needs to be effective, and treatment choices seen to be underpinned by the best research evidence available. The ethos of EBM and the value of Evidence-Based resources such as the Cochrane Library are recognised by practitioners, although for full implementation of EBM practitioners require ready access to validated information sources.

‘ all our um information we give out to patients needs to be sort of Evidence-Based-practice really.’ [CN: H5]

‘……if you restrict yourself to sites like Cochrane……you don't get bombarded with useless and un–validated information……if it's on a validated database, you know, you believe it! [PCC:C3]

‘……….If you want to make practice Evidence–Based you have got to let people be able to access the evidence.’ [CN: C3]
4 Information and training needs

4.1 Motivation and enthusiasm for IT skills and associated training

'I mean my skills are growing all the time actually.' [CN: H5]

'I mean from my point of view it'll be a Godsend, `cos I actually have keys to the surgery so I could go up and use it weekends if necessary, you know, which would be better because it's quieter…..' [CN: H4]

'I am quite happy to learn anything you know, I'd love to expand my expertise, you know, you've got to go with the flow you know, that's the way things are going.' [AS: C1]

'I probably wouldn't have done the search before! I wouldn't know what to do.' [PAM: C1]

'I am quite happy to fiddle around with it and I have learnt quite a lot myself…..' [PAM: H2]

These comments reflect significant levels of motivation for IT and acquiring new skills across the different hospitals and practices in the survey. Commitment to skills development is illustrated in responses to the question – 'How did you come to attend the training sessions?'

'I was given the opportunity by my manager if, if I wanted some training on this new computer, the new PC, which we have. And I jumped at the chance.' [AS: C2]

'I was offered it through the surgery….there were four or five of us. I think everybody wanted to go.' [PCC: C3]

‘……there was just a memo sent out saying that this was available and did anyone want to attend. So I thought it might be quite interesting.' [PAM: H2]

4.1.1 Perceived benefits of training sessions

Respondents were asked what benefits they had thought they would acquire from the training before they went on it, the following list indicates their main areas of interest:

<table>
<thead>
<tr>
<th>Number of times stated</th>
<th>Literature searches</th>
<th>Computer skills</th>
<th>Internet access</th>
<th>Remote access to library</th>
<th>Raising awareness of resources</th>
<th>Cascading training to others</th>
<th>Improved confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Some practitioners had open expectations of the course and hoped to use it to identify areas of knowledge that could be useful to them:

'You don't know what you don't know do you?!

However, two respondents had misunderstood the aims of the training sessions and were disappointed that their areas of interest (email and electronic patient notes) were not covered.
4.2 Existing IT skills and previous training received

Six of the interviewees said that they had not received any formal IT-skills training before attending the Cornwall Library Services programme, although a couple explained that they had taught themselves basic skills or had asked family members for assistance.

'Only self-taught, what I've learnt from...having a computer at home basically.' [CN: H4]

'I was self-taught, uhm, playing with a computer and handling the Internet...I haven't any formal training.' [PCC: C3]

The rest of the interviewees had attended a mixture of courses covering basic computer and wordprocessing skills, emailing systems, and clinical management systems.

In the pre-training questionnaires sent out by Cornwall Library Services staff the majority of respondents across the sites judged their own computer knowledge to be less than confident:

Questionnaire responses from hospital sites:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very confident</td>
</tr>
<tr>
<td>Confident</td>
</tr>
<tr>
<td>Slow but get there in the end</td>
</tr>
<tr>
<td>How do I turn it on?</td>
</tr>
<tr>
<td>No response to question</td>
</tr>
<tr>
<td>Total number of replies</td>
</tr>
</tbody>
</table>

Responses from the one hospital site that had already sent round its own IT-skills questionnaire:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident in use of computer and the Internet</td>
</tr>
<tr>
<td>Very limited knowledge</td>
</tr>
<tr>
<td>No training</td>
</tr>
<tr>
<td>Total number of replies</td>
</tr>
</tbody>
</table>

Questionnaire responses from primary- and community-care practices:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident about using computers</td>
</tr>
<tr>
<td>Slow at using computers</td>
</tr>
<tr>
<td>No response to question</td>
</tr>
<tr>
<td>Total number of replies</td>
</tr>
</tbody>
</table>

Total number of replies across all sites 174
Those judging their IT skills to be less than 'Confident'

The pre-training questionnaires revealed that awareness and use of Internet resources was high amongst the primary- and community-care staff, with twenty-one out of twenty-five respondents stating that they had used it at some point. However, fifteen of those who said they used it had experienced problems accessing the information they required:

'Not sure how unbiased some info is.'

'Slow, cumbersome.'

'Takes so long to download'

'I find it confusing, too much to choose from.'

'Refining searches.'

'Accessing correct area.'

Hospital staff were also asked about Internet use. In this case, the vast majority said that they had never used it or did so rarely. Of the remainder, only seven respondents said they felt confident using it:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident</td>
</tr>
<tr>
<td>Not very confident</td>
</tr>
<tr>
<td>Never/rarely use it</td>
</tr>
<tr>
<td>No response to the question</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>68</td>
</tr>
<tr>
<td>8</td>
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</tbody>
</table>

The questionnaires for the primary- and community-care staff and for the hospital sites both asked respondents to rate their success at obtaining results from searches of bibliographic databases. From the combined 138 respondents to these two questionnaires the following results were obtained:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very confident</td>
</tr>
<tr>
<td>Confident</td>
</tr>
<tr>
<td>Not very confident</td>
</tr>
<tr>
<td>No response to question</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>19</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>102</td>
</tr>
</tbody>
</table>

Levels of use of electronic resources and confidence in IT skills appeared to be higher among staff of the primary- and community-care practices. Ninety-nine (of the 113) respondents to the hospital questionnaire stated that they had not used the online bibliographic databases supplied by the Library Intranet page. This is reflected in the findings during interview where the opportunity to gain literature-searching skills was the most frequently-cited perceived benefit of attending the training sessions.
4.3 Barriers to successful information-seeking

More than ever before, practitioners require timely and accurate information but, ironically, seem to face even more constraints on meeting that goal. Various information barriers were identified by the participants. Some were general problems (information overload, quality of information), some were organisational (information skills training), and others were concerned with the technical problems, which aggravate the problems of juggling priorities for patient care and personal development.

4.3.1 Time

'I will try and get on it a bit more often, but it's, it's time.' [CN: C1]

'Well we're we haven't had time, we're so busy, we short staffed …'[CN: H4]

'I mean we're so bogged down with doing day-to-day work that there's very little time for, for information.' [AS: C1]

'But I did find it difficult coming up here, you know in work time, there is always enough else I feel I have got to do, and it's difficult to justify the time……' [PAM: H4]

'When you're a doctor your opportunities are very, you know, they're kind of opportunistic. You know, oh gosh look I've got ten minutes, I'll go and look that up. You're only getting a quick ten minutes, you need to do it there and then.' [PCC: C3]

Time issues are exacerbated by the nature of travelling in Cornwall, which makes physical access to library and information resources costly and time-consuming.

'And I think it's because of the distances that you know you have got to travel to get anywhere to do anything, you……have to try and sort of cram in as much as possible and then you don't really….accumulate as much I think as you should have done.' [PAM: H1]

'…..living in a rural area you know the Cornwall Healthcare Trust library is at Bodmin which is how far away? Fifty miles away, forty miles away, and I drive a very large Landrover which is very thirsty on petrol.' [N: H2]

'…..especially living in Cornwall, the library seems dead far away.' [CP: H3]

'But I, it's, it's the travel, it's such, you know you are talking about a whole half a day.' [CN: C1]

4.3.2 Logistical barriers and lack of support

'If I need to know something about patients coming in, the last thing I am likely to do is come up here and look on the Internet. I need to be down there on the ward with the patient. There is no way we have got access down there I need to be looking at it, I need to get it quickly…'[N: H1]

'I mean there would be free access to my PC on my desk by any clinical that has skills but, it's difficult "a" because of actually fitting in normal working because I am usually working on it and "b" you know where it's situated is in reception so therefore it's not really ideal………' And later '…..everything's computerised et cetera, et cetera but, there's the, the practicalities of it…' [AS: C1]

'….we have had the problem that we only had the one terminal we could get on. So, if someone was using it for something else or……you couldn't get in the room then you,….you know it was a bit difficult to get to.' [CN: C3]
We haven’t used the printer yet! We haven’t got any paper for it! That could be one problem, we’ve got all of this and they don’t give you paper, they don’t give an information pack on what to do, you know what to do with all the icons on the desk top.’ [CN: H4]

4.3.3 Problems with IT facilities

‘…..they unfortunately haven’t got their own computer yet, but we’re working on it.’ [CN: H3]

‘Nothing’s useful unless we have got the technology in the office.’ [CN: H4]

‘…..we’ve had the computers, it’s the suppliers, ……. have taken three or four months to get round to giving us passwords and linking. It’s just the human part ……. It’s the traffic warden on the information highway ….‘ [PCC: C3]

‘I had printed off some of the articles, then the, the computer didn’t actually work very well at the college. It wasn’t printing it off correctly and they put it onto another printer, but it didn’t print the graphs or the tables so I actually had to then go over to the library and find the articles and just photocopy them.’ [N: H2]

4.3.4 Frequent interface changes

‘…..one of the things which has been frustrating is that every time that I get the hang of it, they go and change the system and you have to learn it all over again…‘ [PCC: C3]

‘But then I went to go into it recently and all the format seems to have changed and I didn’t …I haven’t managed to get in again since the change.’ [CN: H5]

4.3.5 Infrequent use

‘But I, when I’ve come to like look trying to get onto the Internet I’ve had to go back and re-refer how to use it ‘cos I don’t use it regularly…..’ [PAM: H5]

‘I think you have got to continually keep using them to actually get to retain the knowledge really.’ [N: H2]

4.3.6 Skills deficit

‘I’m still not computer-literate’ [CN: H1]

‘….so really at the end of the day I wanted to know how to sort of use a mouse.’ [AS: C2]

‘I’d at least know how to switch one on!’ [N: H2]

4.3.7 Personal dislike of IT equipment

‘I mean, I’m not into machinery at all, I don’t like machinery….I won’t touch it ‘cos I hate it, so I’m inclined to just have it sitting there although I can switch it on.’ [N: H3]

4.3.8 Information retrieval problems

‘I mean the thing I find particularly difficult is when you are looking for the subject you want and you have to narrow the field right down and I don’t think anybody can teach you that. I think it’s more or less trial and error and the more you do if the more you understand…‘ [CN: H1]
‘….it's just knowing what are the right cues to put, on the search engines really, which are
different, I wish they were all the same but they're different according to which one you
use.’ [CN: H4]

‘I still do struggle a bit with things, what words to use, and how to you know, I do still have
difficulty with that sometimes….key words and limits and "ands" and "ors".’ [PCC: C3]

4.3.9 Insufficient information from abstract

‘I find it difficult that you can only get so much information though `cos you can only get
summaries on a lot of them…….’[CN: H4]

‘…..I do find when you order something, even though you've looked at the abstract, you
still don't know if its is going to be quite what you wanted until it arrives.’ [PCC: C3]

4.3.10 Information saturation

‘I mean what the registrar tends to go on is the Internet, and it's just sort of, they're just
bombarded with stuff which comes from everywhere.’[PCC: C3]

5 The Cornwall Library Services training programme: results
and discussion

This section examines the comments, perceptions and feelings arising from respondents'
attendance at the training sessions

5.1 Positive views about the training

The interviewees were asked whether there were any components of the sessions that
they had found particularly useful, the comments below illustrate the range of positive
feedback about the topics covered and the organisation of the sessions:

5.1.1 How to navigate the Library Services page

‘...I wasn't aware until I had the training about the Library Services page, so that was, you
know another interesting thing that came.’[CN: H5]

‘Yes, I mean the library pages were quite useful I found because I study quite a lot.’[CN: H2]

‘Yes, the Library Service was going to be a good one for us which we've actually been on
since, trying to find out information….’[PAM: H4]

‘I found it, I didn't realise that you could get into all these things like the Library Service,
was very useful.’[N: H1]

‘I think the quick going through, `cos normally I've only used the Internet really, and
actually going through Library Services, I've never gone into Library Services before…and
also to do, to tick well-used documents that you know, you could go back to…’[AS: C1]

5.1.2 Databases

‘The introduction to the databases, Medline and the BNI was, you know, I don't think I
would have been able to go anywhere on the course [CPE course] without, without you
know, the information on how to access those.’[N: H2]
'Yes, I think Medline and the British, BNI, British Nursing Index.' [CN: H4].

'Yes, finding out about the different databases and that you could access things on the Internet, the databases.' [PAM: H4]

'Introduction to the databases, 'cos I was actually on a course at the time. So doing some research that was very useful, and just getting familiar with kind of the homepages and what I could do with them really.' [PAM: H4]

'…accessing some of the databases obviously that were relevant to us for doing courses and, and researching articles.' [N: H2]

5.1.3 Basic computer skills

'Well, of course it was all useful to me because I hadn't you know, I hadn't done any of that before, so, for me the basics right through were useful.' [CN: H1]

5.1.4 Searching techniques

'Yeah, I think it was useful, it was a useful refresher of what I already knew, and confirmed that what I was doing up to that point was OK. And then, as I say, the extra sort of search things there was quite a few pointers that he gave us that I wasn't aware of.' [CN: C3]

'There was lots, I mean, I suppose how to use the Net, and he gave us a lot of information about how to, sort of, make your searches more specific which was useful.' [CP: H3]

5.1.5 Increased awareness of resources

'In fact, I was absolutely floored that there was so much information that I could actually then access onto the computer, you know, which at times is brilliant.' [CN: H4]

5.1.6 The Internet

'And looking at the Internet as I don't know much about it.' [N: H1]

Indeed, some practitioners found it difficult to identify particular topics as more useful than the others:

'All of it really!' [PCC: C3]

'The Medline and the BNI, and the, can I have more than one?' [CN: C1]

5.1.7 Delivery of the training

'...I did find it interesting, I found it quite entertaining as well!' [N: H3]

Comments about the delivery of training were positive. Interviewees appreciated the convenience of sessions held at their places of work and the sensitivity of the trainer to the level of experience of the group members:

'Oh, I saw it advertised and I was interested and it actually took place next door on this floor, so too good to miss!' [CN: H3]

'I mean it was here, so I mean, they attended me!' [PCC: C3]
Practitioners felt that the course was a good foundation and gave them confidence to practise the skills on their with the added support of a training-pack of handouts from the course and the knowledge that the library staff are only a phone-call away.

'I think this was kind of, the course here was almost a stepping stone in that I then took it away, and kind of did more at home, and you know, ran that way… but I think it was kind of an initial building block from which I could start looking at things.' [PAM: H4]

'I think I’m reasonably OK now, I really just need to practise and see how that, you know, whether I can actually do it on my own!' [CN: C3]

'It’s clear now what, what is there, and that the searches are not difficult to do once you know the very basics. And it really, it is just a matter of going in there and doing it.' [PCC: C3]

‘And it’s nice to have a handout as, oh gosh! Where do I go from here?’ [PAM: C1]

'I feel quite happy to go and play on it and, you know, I also feel that because we have got the backup, that [library assistant] is down at the library and I can “oh, I have got this far, help what do I do next?”' [PAM: C1]

### 5.2 Issues arising from the training sessions

#### 5.2.1 Skills mix of groups

The policy of tailoring the delivery of the training to the IT experience of the trainees present at each session, whilst welcomed by some interviewees, left others feeling somewhat frustrated. When there was a mix of experience amongst the members of a group it was understandably difficult for the trainer to pitch the session at an appropriate level to satisfy all needs:

‘…it’s very difficult when you’re doing that sort of training because you’ve got people there that are at different levels, you know, for somebody who’s fairly computer-friendly you don’t need to know how to log on and everything, you just want to get in and do a search don’t you? But there’s not time for that because time’s spent with people who haven’t held a mouse before…you know, we had only one terminal and there were like six of us and two hadn’t even used a computer before…’ [CN: H4]

'It was quite entertaining, quite enjoyable, except perhaps I did find it quite hard, I’m not computer-minded.' [N: H3]

The fist quote above also illustrates another issue raised by interviewees: the fact that IT facilities were often limited in the training rooms forcing several trainees to congregate around a single computer. This meant that there was often not enough opportunity for all group members to gain practical hands-on experience of the tasks.

'I would have liked to have been, because there was four of us and only one PC. I would have been nice, nice for me if we had all been able to have a go but the time just ran away. It was quite intense and, and two of them had a go which was good. But it was much, for me it’s helpful if I am actually doing it and making the mistakes myself.' [CN: C1]
5.2.2. Length of training sessions

Several practitioners mentioned that they would have liked the sessions to last longer. This was partly due to the logistical implications of several people sharing one computer but interviewees also raised this point in terms of wanting further opportunity to reinforce the skills they had acquired:

‘...and the time was limited.’ [AS: C2]

‘I’d like to do it again actually, and I think I’d really need a wee bit longer at it.’ [N: H3]

5.2.3 Further training needs

A lot of interviewees expressed support for the drop-in follow-up sessions or even for a formal ‘refresher’ course from Cornwall Library Services. Many participants felt that it would be particularly beneficial to attend a ‘refresher’ course after some time had elapsed allowing them to practise their skills and discover areas where they need further guidance or explanation.

‘I don’t know whether I’m using it in the most efficient way or whether I’m going a long route, so it’d probably be quite useful to have a, an update having used it a bit more, ’cos you don’t really know, you have the first session, you don’t know what sort of questions you need to be asking, whereas now...’ [PAM: H5]

‘Yes, I need to go back really’ [PCC: C3]

‘...I would like to come again if he did another few hours, came another few hours because you do forget.’ [N: H1]

When asked about the topics for which they would like to receive further support or training, interviewees identified the following:

**Searching skills**

‘...the thing I find particularly difficult is when you’re looking for the subject that you want and you have to narrow the field right down’ [CN: H1]

‘I think, you know trying to narrow down search...I mean that's getting the hang of that, and how to use the database to do it for you.’[N: H2]

**Familiarity with updated interfaces**

‘The interface has changed because I did, I went in a couple of weeks ago and I could find out how to get any further than you know the choices...and I couldn’t work out how to get past that.’ [CN: H5]

**Web pages**

‘I would like to look at some other useful homepages, though I think we had a brief look, look at them, but I would like to go into a little bit more detail.’ [AS: C2]

‘...especially sort of finding, sort of the Library Services pages and things like that. They are useful and I'm, the pack he gave us tells you what to do but uhm, it would be quite good to have updates I think.’ [N: H1]
General ‘refreshing’

‘I think I would quite like to go through most of it again actually.’ [N: H2]

‘I'd like to look at it all again…that would be really useful…one more time, then that would really consolidate it.’ [PC: H3]

‘…the only thing I did find was because I, I didn't go and then use the computer, I wish that something coming up nearer, closer to the training because when I did go on a course a few months later there was a lot I'd forgotten.’ [N: H2]

6 Putting skills into practice

6.1 Examples of practical application of the skills acquired

When asked whether they had referred to the training-pack of handouts given at the sessions, ten interviewees said ‘yes’ with one respondent confirming that she ‘couldn't do without’ the pack.

Of the fourteen who said ‘no’, several said that they would probably use the pack in the future or that they had taken their own notes at the sessions and preferred to refer to these.

The practitioners were also asked whether they thought they had practised any of the skills they had learnt through the training programme. The response here was very positive with nineteen trainees saying that they had been able to use their skills. Interviewees were encouraged to talk about the context in which they had been able to apply the skills. Where a specific use was mentioned, it is clear that research and education are important drivers (see Figure 1).

Seven interviewees had not been able to put their skills into practice but in some cases this was due to IT problems or, in the case of some of the primary- and community-care practices, to the fact that training had only recently taken place.
6.2 Use of electronic resources

‘Right, if I'm looking at a certain topic then I will go into one of the databases…’ [CN: H1]

‘Well, Medline I suppose, and the British Nursing Index, I think were two. I mean, I've tried quite a few, I've been in the RN one 'cos I can get that at home…’ [CN: H4]

‘I've used it to look up articles, and for projects I'm doing and, trying to see what's available, physiotherapy-wise on the Net, try and look up some Web sites.’ [PAM: H5]

‘I did go onto the uh, BNI the other day and got lots of useful information.’ [CN: C1]

‘Well, it's mainly been the database searches…and perhaps just kind of looking around the Cornwall NHS homepage and thinks, and looking at services in line with that.’ [PAM: H4]

‘I have used the AMED.’ [PAM: H2]

As they talked about putting their skills into practice, the practitioners revealed that they have in fact been using a variety of electronic resources. Several elaborated further to identify what they perceive to be advantages of using electronic information resources: speed; convenience; easy access to journals.
'Well, the main thing is that it's much quicker...the other advantage, you've got certain databases already set up so that you can just click into them and be able to find things.' [PCC: C3]

'...when you are using the IT services you can access the information pretty much from anywhere anyway.' [N: H2]

'And it can tell you what they have got there rather than going down and having to plough through, you know all shelves, and all the journals and things.' [CN: C1]

'...and journals actually put in what article they are talking about and then you can actually go and get it off in a PDF file or whatever, that is, that is excellent.' [CN: C3]

On the other hand, a certain amount of personal investment in terms of time and effort is necessary before the potential advantages of electronic resources can be realised:

'I would like to feel that I had got the knowledge to do it exactly and I think if you do it would be quite time-saving. Whereas at the moment, I find that it is actually quite time-consuming because I am sort of grovelling around for it.' [PAM: H1]

Two practitioners also pointed out that taking a traditional approach to information-seeking can have its rewards in terms of careful appraisal of the selected item or the serendipitous finding of an even better one:

'...but then it's nice to be able to go to the library and look at books and think "right is this the one that I really, really want, you know, or is it this one?" Or you go into the library looking for a book and then lo and behold you come across a better one. So it's like, it's good to be able to actually get in there and read it and also, you know, assess a book and see if you feel you can read it, you're happy with its style. That's the important thing.' [CP: H3]

'...I go looking for one subject and see something else and think, "oh that looks a good book you know, I'll have a read of that" so I come away with stuff that I didn't actually go there for.' [CN: C1]

6.3 Use of the Cornwall Library Services Web page

The training programme included an Introduction to the Cornwall NHS Net homepage and to the Library Services Web page. Interviewees were asked whether they access the Library Services Web page. Seventeen practitioners said that they had visited the Web page, though with varying degrees of regularity. Eleven people specified how often they had tended to look at the Web page:

<table>
<thead>
<tr>
<th>Number of times stated</th>
<th>Times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a week</td>
<td>2</td>
</tr>
<tr>
<td>Once every couple of weeks</td>
<td>1</td>
</tr>
<tr>
<td>Once a month</td>
<td>2</td>
</tr>
<tr>
<td>Once every two months</td>
<td>1</td>
</tr>
<tr>
<td>'Depends on need'</td>
<td>1</td>
</tr>
<tr>
<td>'Quite regularly'</td>
<td>1</td>
</tr>
<tr>
<td>Once only</td>
<td>3</td>
</tr>
</tbody>
</table>
Interviewees were then asked whether they remember what they were looking for the last time they accessed the Web page. Those practitioners who could remember had been looking for the following:

<table>
<thead>
<tr>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal articles and recent research on a specific topic</td>
</tr>
<tr>
<td>Ordering documents</td>
</tr>
<tr>
<td>Guidelines and protocols</td>
</tr>
<tr>
<td>Trying to register</td>
</tr>
<tr>
<td>General familiarisation with the databases</td>
</tr>
</tbody>
</table>

One practitioner had attempted to access the Web page the previous day but had experience connection problems.

When asked why they needed the information on that occasion, the respondents cited: personal interest; research purposes; handed it on to someone else; and putting guidelines and protocols into practice.

### 6.4 Use of the online document request form

One of the features of the Library Services Web page is an online document request form which allows users to order journal articles and books electronically. Eight of the interviewees had taken advantage of the function.

Two respondents had attempted to use it but found the process time-consuming and faxed their requests to the library instead. Others stated that they were interested but had not needed to use it, had not had time to familiarise themselves with the system, or were unsure of how to use it.

…I found that quite time-consuming, filling out, 'cos like I said, [I had] about twenty-odd to do and I sent of quite a few that way and then I thought 'gosh this is so time-consuming' so I phoned the library and faxed the list…' [CN: H4]

'…I had so many that I think if I had actually done it in their format I think I probably would have had about, you know, thirty pages.' [PAM: H4]

'I think as I get more sort of experienced at using it, I mean that is one thing I want to try to do, sort of make greater use of it, and feel more comfortable with it, but it's just practice really isn't it?' [CN: H5]

'No, not at the moment. I might in the future if I started studying again.' [CN: H2]

'I haven't as yet, I think we have got quite an extensive library here in the surgery, but I am sure if there are any, any information at all that the doctors wanted, I would be quite happy to order it for them, I would find my way around anyway, definitely.' [AS: C2]

Whether they had actually used the facility or not, interviewees were generally positive about the potential benefits of the system, especially as it may alleviate some of the problems associated with physical access to libraries in Cornwall (see Section 4.3.1).

'Well, the benefits are, I mean, just are amazing because, living in a rural area, you know, the Cornwall Healthcare Trust library is at Bodmin which is how far away? Fifty miles away, forty miles away...' [N: H2]
'Well, the benefits are that it is...an hour and a half to Truro! So that's a major benefit.' [CN: C1]

'I think it's a great bonus, the fact that I can look up what's there and then order it if I want it, being remote and not, the library is not really accessible to us here…' [PAM: C1]

'I think it is very useful because it means you can obviously access and get sent information without having to go anywhere…you can do it in your spare, if you have got a spare ten minutes.' [PAM: H2]

6.5 Cascading training

The benefits of the training programme can be extended through the cascading of new skills to colleagues. Five practitioners confirmed that they had been able to help colleagues search for information or pass on advice about effective use of databases.

'I have actually, to be honest, because I am a trainer and I have passed some of them on to my registrar, so yes I have...we've done searches together and things come up in tutorials and...we show each other how we've done it.....and it's quite useful to be able to show them to look at, you know, if you restrict yourself to sites like Cochrane…you don't get bombarded with useless and unvalidated information....' [PCC: C3]

'Yeah, I've done that with two CNs...and people have seen me doing, receiving the information and pulling it off the Net and so ...they said "can you do a search for this" and sometimes they come with me.' [CP: H3]

'Yes, I mean locally I've been able to say "this is how you get into this field"' [CN: H1]

Although other interviewees had not cascaded skills acquired at the training sessions, several explained that they intend to do so in the future but have not had the opportunity for a variety of reasons such as lack of IT equipment at the practice, lack of time, or because the training had only recently taken place.

'I've had a couple of nurses that have been on courses since, but having not had the computer here…' [CN: H4]

'No, I am supposed to, but it was, I think it was last summer and we were short-staffed, and I haven't really had the chance to.' [AS: C2]

'Not really, because it hasn't been, it hasn't really been long enough to, to do that.' [CN: C3]

A few felt that they would not be confident enough to cascade training to others or that they would need further training themselves before attempting it.

'I wouldn't feel proficient enough to do that to be honest' [PAM: H1]

'No, I wouldn't and I'm not very good at computers.' [N: H1]

'Uhm, skills that I learnt then. I need to do a refresher because...I hoped that we'd at least have that Internet up and running...my skills have decayed and basically now I need...to learn more skills or relearn skills.' [PCC: C3]

6.6 Inhibiting factors

It was possible to identify three main factors that appeared to inhibit the full application of the skills by all course-participants:
6.6.1 IT problems

‘.....the only one here is in the library .....and we’re still waiting, still waiting to do it here, and it’s just been one cock-up after another....it’s been two months with a PC on my desk and I’m not able to use it, so it’s very frustrating.’[PCC: C3]

…but then when we had the training we hadn't even got the computer...it was quite a bit further down the line after we’d had the training when it actually became useful to use the computer.’[CN: H4]

6.6.2 Further training needs and infrequency of use

‘...but I think because of my little knowledge on computers I find it quite difficult to sort of follow. I could follow on the day but actually when he said come back and have a go I was a bit lost really.’[PAM: H4]

‘But if you don't use something for a long time, you think you have got the hang of it whilst you are there and then suddenly you come back to it on your own and then it's kind of oh my goodness! I don't actually remember what I thought I did.’[PAM: H4]

6.6.3 Course-driven information-seeking

Some practitioners equated the need for information with participation in Continuing Professional Education and had little or no incentive to practise their skills without the imperative of an assignment or project.

‘So until I actually have to study for anything...I won't be looking at [the Internet]’[N: H1]

‘I only needed it once so....I mean it's, it's different if you're doing a ....degree course, you would use it much more.’[N: H1]

‘...when I did go on a course a few months later there was a lot I had forgotten.’[N: H2]

Such comments bear out similar findings from earlier studies, for example:

Qualified nurses indicated that they probably had (or were expected to have) most of the knowledge they needed to practise and that any gaps were filled by colleagues. It was not the norm for these nurses to search for the answers to a practice question in the research literature, unless it was in the context of a project for which there was some kind of personal goal, e.g. a qualification.(Newman et al., 1998 p. 16)

7 Information-support in Cornwall

7.1 Use of library services

‘I love going to libraries.’[CN: C1]

Participants make the most of opportunities to use the library services when they present themselves, this is particularly important because of the geographical barriers in Cornwall.

‘When I tend to have my meetings, my community therapist's meetings, they actually tend to be up in Bodmin. So I quite often kind of sneak into the library when I am there.’ [PAM: H4]

‘Or I may check [library] to see the journals that they have got up there so I pop up and photocopy those. If I needed to, then order the ones I couldn't get from anywhere else.’[CN: C3]
There is evidence of overwhelming appreciation of the support given by library staff in the county.

'And the staff there are really, really friendly, they’re very, excellent, I think they are brilliant librarians.' [CP: H3]

'I mean they seem….quite willing and available to, advise and train if necessary.' [PAM: H5]

'I have had to ask them a lot of things and they have always been helpful and approachable and, you know, for me they have always had the answers.' [CN: H1]

'...actually they've always been brilliant and the ....non–electronic support has always been extremely good....' [PCC: C3]

'If I have wanted to know anything they, there has always been someone around that would sort of spend time to do it.' [CN: C3]

"But I have always had support from the librarians, but particularly [library assistant], I mean you know they are very supportive for direction." [N: H2]

'The only time I have really been in contact with them is over the data service requesting articles and they were absolutely brilliant with that, but they are certainly very accessible.' And later ’ ....and when there have been articles that they have not been able to get hold of they have let you know, which is always nice rather than thinking…' [PAM: H4]

Despite the best efforts of the librarians and the efficient services they provide there are persistent inhibiting factors beyond their control.

'.....it is a slow process you know, because then they have to get the relevant articles and if they haven't got them they have to send to other libraries for them. So it can take a couple of weeks or even longer to get the material you want.' [CN: H1]

'I think the library services are much better now. The only criticism is that a lot of the medical stuff is, and nursing and midwifery, is down at the Poole library....and unless you're actually doing a course you can't access that. [CN: H5]

However, several respondents raised the issue of a lack of awareness of library services. As one interviewee suggested the library may benefit from promoting their services more widely to community staff.

‘....until we had that training, I had no idea that the resources were available at Bodmin....I happen to come across it through my training, it wasn't something that was steered my way because I needed it there and then. It was a bit haphazard, I was already a year into the course before I realised there was all this available. [CN: H4]

'I wasn't aware until I had the training about the library services' page.' [CN: H5]

'I think they need to raise their profile with community staff, because I think people are under the impression that unless you are actually working in the hospital you can't access it.' [CN: C1]

When asked about enhancements they would like to see in terms of the library services, interviewees offered the following ideas:

- Quicker access to articles.
• Easier access to midwifery and medical materials.
• Quick reference guide to database searching.
• List of full titles and description of database (as opposed to abbreviated format).
• Updating library materials.
• Fully functional IT services with immediate access to resources.
• Complete list of library catalogue holdings (i.e. to cover books as well as journals).

One interviewee extended this to propose the development of library services into a role more akin to information consultancy.

‘….but one of the areas I think they might be able to help with is, is a step outside the library service because it’s actually helping the, if they’re going to get into IT then helping with information transfer between practices…..We need somebody who steps into the practices and says, “you’re all incompatible and you’re all talking different languages and if you want information and research and things like that you need to be compatible and this is the way to do it.”’ [PCC: C3]

7.2 Continued use of traditional sources of information

When encouraged to elaborate on their approaches to information seeking through the use of hypothetical information-seeking scenarios in the form of vignettes [see Section 2.2 and Appendices], it was clear that traditional sources of information still have an important role for healthcare professionals. The non-electronic resources mentioned by interviewees included:

• Asking colleagues
• Professional journals in hardcopy
• Consulting local information services’ staff
• Use of centres of excellence as an information source
• Professional organisations and their information services
• In-house audits

The importance of personal and unit-based resource collections along with support from colleagues was apparent throughout the interviews, reflecting findings at the other VIVOS sites and earlier work, for example a study by J. Williamson cited in Urquhart and Crane (1994 p.239):

An individuals’ most frequently used sources of information were most likely to be their own (limited) collection of journals and their nursing colleagues.’

‘I read them at home and then bring them in here for people to share.’ [CN: C1]

‘I keep most of my journals here, I keep them at work and we have got other books and things that we have got in the office.’ [PAM: H1]

‘I mean, all the books that are here or at home are my own.’ [PAM: C1]
'I keep the Nursing Times and I use that a lot as well. Probably one of the first searches I'll do is through the Nursing Times.' [CN: H4]

'Normally we get sent, there's a physio department....who send us a...contents page of all the articles that would be of interest and we just highlight the ones that we want and they send them to us.' [PAM: H5]

'Normally our first stop is qualified staff.' [PAM: H4]

Simultaneously, the fact that several participants mentioned electronic media such as the Internet and medical and nursing databases during their discussion of the vignettes, illustrates increasing familiarity with and readiness to consult such information resources.

8 Conclusions

The geography of Cornwall, along with related factors such as volume of traffic on small roads, mean that healthcare practitioners are very receptive to the potential benefits of electronic information resources. However, there is a wide range of levels of IT experience amongst practitioners and in many cases the acquisition of basic IT-skills is a necessary precursor to the development of more sophisticated database and Internet searching techniques.

On the whole, motivation is high and response to the Cornwall Library Services training programme was generally positive with interviewees asserting that it provided a solid foundation for building up their searching skills and that it broadened their awareness of useful resources and of convenient ways to access those resources. However, there was a feeling amongst participants that they would benefit even further from 'refresher' courses as part of an ongoing training programme and there was strong support for the drop-in update sessions run by the library assistant.

Enthusiasm for the update sessions was partly related to the fact that some interviewees felt that their opportunities for practising their new skills had been inhibited by the delayed roll-out of IT equipment, limited opportunity for individual hands-on experience in the original training sessions, or lack of education-related drivers for information-seeking. Yet for many interviewees, support for development of the ongoing training approach was prompted by a preference for: attending initial sessions, then going away to try out the new skills in the context of their daily work, followed by update sessions for concentrated training on aspects that they had identified as being particularly difficult or relevant to their own patterns of information-use.

As an integral part of the process, interviewees were very positive about the approachability of library staff and felt confident that they would receive support and guidance if they encountered problems whilst attempting to practise their new skills. There was however a feeling that the library could benefit from wider promotion of its services as many interviewees discovered the full range of library services and resources only through attendance at the training course.
References

Appendix 1: List of topics covered in training sessions

The training sessions covered all or some of these topics:

Introduction to the Cornwall NHS Net homepage
Introduction to the library services page
A look at other useful homepages
Introduction to databases (e.g. Medline and the BNI)
A look at the Internet
Work on comparing search results, analysing web pages, etc.
### Appendix 2: Details of numbers and job categories of survey participants

<table>
<thead>
<tr>
<th>Interviewee job role</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative staff</td>
<td>3</td>
</tr>
<tr>
<td>Clinical practitioner</td>
<td>1</td>
</tr>
<tr>
<td>Community nurse (includes: practice nurses, district nurses, health visitors, community midwives, community nurses)</td>
<td>7</td>
</tr>
<tr>
<td>Nurse</td>
<td>5</td>
</tr>
<tr>
<td>Primary care clinician</td>
<td>3</td>
</tr>
<tr>
<td>Professions allied to medicine (includes: physiotherapists and occupational therapists)</td>
<td>7</td>
</tr>
</tbody>
</table>
Appendix 3: Interview schedule

1. Can you confirm that you have attended a database training session run by Cornwall Library Services? [When?]

2. Could you briefly outline any previous IT training you had received.

3. How did you come to attend the training session(s)?

4. Before you went, what benefits did you perceive you would obtain from the training?

5. Was there anything in the session(s) that you found immediately useful? [SHOWCARD OF TOPICS COVERED]

6. Have you consulted the pack given to you during training?

7. Are you aware of any occasions when you used the materials in the pack to help with training or mentoring someone else?

8. Are there any areas covered in the training that you would like to look at again?

9. Do you think you have practised some of the skills and knowledge gained since then? [PROBE If so, get full details of occasion – which/when/why?
   Confidence - have they extended their skills through working alone since the course e.g. using the new Medline interface?]

10. Do you access the library services web site?
   
   If yes:
   
   (A) How regularly?
   
   (B) What were you looking for the last time you accessed the web site?
(C) How did you go about finding the information you were looking for?

(D) How did you use the information you found?

11. Do you order documents using the online request form found on the library services web page?

......If yes:

   (A) How often do you use the service?

   (B) What do you perceive to be the benefits or disadvantages of this service.

12. What are your feelings about the current level of information support available through the library?

13. Are there any enhancements to the library service you would like to see?

14. What means are there locally for disseminating information from health professionals to the public? (PROMPT: PILs/Patient Information Service – where else is existing information physically available for patients?/patient choices/waiting lists etc.)

15. Are you aware of any of your patients or clients having used the Internet to obtain health information?

16. How does this come into the consultation?

17. What do you think patients should have access to?  
   [PROMPT, e.g. Cochrane?]

[Thank them for their time]
Appendix 4: Vignettes

Primary care clinician vignette 1:
You have a colleague who is interested in finding out whether there are alternatives to the use of antibiotics in treating acute otitis media in young children. She wants to know whether there have been clinical trials to test the effectiveness of antibiotics compared to other treatments for this condition. How would you advise her to go about looking for information on this topic?

Primary care clinician vignette 2:
A colleague is to give a lecture on ‘responding to death and bereavement’ to a group of trainees. How would you advise him to search for existing research into GPs’ attitudes to the death of a patient?

Community nurses vignette 1:
You have a colleague who works as a nurse in a primary care practice. To develop her role your colleague is hoping to take on more responsibility for treating minor illnesses. Before presenting her idea to the practice she would like to find information on other practices where nurses have set up a similar service. She is interested in how patients reacted to these services and whether GPs’ time was saved. How would you advise her to go about looking for this information?

Community nurses vignette 2:
You have a colleague who has been asked to participate in a trial relating to the provision of out-of-hours consultation through a nurse-run telephone service. The service would operate in the evenings and at weekends and would cover a group of primary care practices. Your friend would like to know about any research into similar projects to find out about training and support given to nurses involved. How would you help him to find information and advice?

Community staff vignette 1:
You have a colleague who has been asked to investigate whether it would be beneficial to develop a structured system of preventive home visits to elderly people living in the community. She needs to find out whether studies have been conducted to assess the effectiveness of preventive visits in terms of improving functionality in daily activities and in terms of the elderly people’s self-perceptions of their health status. How would you help her to locate any information or advice?

Community staff vignette 2:
A colleague has been asked to give first-aid training to new parents as part of an awareness campaign about child-safety in the home. She wants to find out whether there has been any research into the effectiveness of child-safety advice. How would you advise her to go about looking for any information?
Preliminary Report for Leicester Site

Value and Impact of Virtual Outreach Services (VIVOS) Project

March 2001
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Abstract

The Trent FUTURES project, which provides NHS staff, University staff and students with 24-hour access to Medline and a collection of electronic journals through the NISS Biomed service, is one of six projects investigated by the Value and Impact of Virtual Outreach Services (VIVOS) research team. The aim of the VIVOS project is to evaluate existing health information outreach projects. It will use the findings and the cumulative experience of information professionals at the research sites to inform project management guidelines for the successful implementation and application of future programmes. A range of research methods was adopted with a view to identifying those that are most appropriate to evaluations of this nature. In Leicester, the VIVOS team carried out a qualitative evaluation to establish how staff perceive the service, how they use it, and how it could be developed to keep pace with changing needs.

Semi-structured interviews and postal questionnaires, based around the use of the Critical Incident technique, were employed to survey a sample of registered NHS users (interviews/questionnaires) and staff from The University of Leicester (questionnaires only) who have access to the NISS Biomed service through the University network. Qualitative data methodology was the preferred approach because in-depth analysis was required and data handling was facilitated by the use of the NUD*IST 4 software program. Statistical data was analysed using SPSS software. The structure of the report parallels the themes drawn out during data analysis. To add value to the study, a cost–benefit analysis was carried out by a health economist from ScHARR.

The cost–benefit analysis concluded that there were indications that provision of the NISS Biomed service led to savings in staff time – a mean net cost saving in excess of £23,000 equating to staff time saved of £920,000 – although the health economist stressed the poor response rate to the questionnaire (22%) which resulted in skewed data. These results were borne out by the survey respondents themselves who were enthusiastic about the benefits of accessing the service, particularly in terms of time saved and flexibility of access-location. Levels of use of the service were, however, not consistent amongst all respondents. Reasons given for low levels of use included: time pressures, lack of familiarity with the service and with the potential advantages of accessing it, and limited IT-skills. These issues could be addressed through a programme of promotion of NISS Biomed, training, and information-support. These components are already available through the Clinical Sciences Library, part of The University of Leicester Library and based at Leicester Royal Infirmary NHS Trust, but not all staff were aware of the full range of services provided by the library.

Acknowledgements

The VIVOS research team is grateful to all the Leicester staff who participated in the evaluation. Without their participation in the survey-work there would be no evaluation. The Leicester team provided invaluable advice and support, which is gratefully acknowledged. The team is indebted to Re:source for funding the VIVOS project and to Allan Wailoo at ScHARR for the cost–benefit analysis.
**Abbreviations used in main report**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CINAHL</td>
<td>Cumulative Index to Nursing and Allied Health Literature</td>
</tr>
<tr>
<td>CP</td>
<td>Clinical Practitioner</td>
</tr>
<tr>
<td>FUTURES</td>
<td>Full-Text Using Regional Electronic Resources</td>
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<tr>
<td>HBM</td>
<td>Hospital-Based Management</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>M</td>
<td>Midwife</td>
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<td>MIDIRS</td>
<td>Midwives Information and Resource Service</td>
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<td>N</td>
<td>Nurse</td>
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<td>NHS</td>
<td>National Health Service</td>
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<td>NISS</td>
<td>National Information Service and System</td>
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<tr>
<td>PAM</td>
<td>Professions Allied to Medicine</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
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<tr>
<td>PDF</td>
<td>Portable Document Format</td>
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<tr>
<td>PRHO</td>
<td>Pre-Registration House Officer</td>
</tr>
<tr>
<td>RM</td>
<td>Research Management</td>
</tr>
<tr>
<td>ScHARR</td>
<td>School of Health and Related Research (Sheffield)</td>
</tr>
<tr>
<td>SCP</td>
<td>Senior Clinical Practitioner</td>
</tr>
<tr>
<td>SHO</td>
<td>Senior House Officer</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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<tr>
<td>TGC</td>
<td>Training-Grade Clinician</td>
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<tr>
<td>VIVOS</td>
<td>Value and Impact of Virtual Outreach Services</td>
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Part 1: VIVOS Report on Leicester site

1 Introduction

1.1 VIVOS aims / objectives

VIVOS was a one-year project running from February 2000 to the end of January 2001. It was conducted by the Department of Information and Library Studies, The University of Wales Aberystwyth and received funding from Re:source – the Council for Museums Archives and Libraries. The research team was based at Aberystwyth and collaborated with information professionals from Leicester, Cornwall, West Suffolk, Salford and Trafford, South Humber, Devon and North Thames to assess the Value and Impact of Virtual Outreach Services. Development of research skills by the information professionals was seen as an integral part of the project.

The project had three main aims. The first two related to work carried out by health libraries to promote ease of access to information sources, particularly amongst primary-care and community staff. Outreach services should promote access to information resources for all healthcare staff and it is therefore important to establish a toolkit of methods for assessing the effectiveness of the services themselves and of associated training programmes. The VIVOS definition of ‘Virtual Outreach Services’ was fairly broad and covered any services that enable healthcare professionals to access pertinent information without physically coming into the library premises. In most cases this equates to electronic information sources, but at one of the VIVOS research sites it involves the dissemination of a hardcopy digest of topical evidence-based issues.

The third aim of the project was suggested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via the People’s Network. This proved challenging since the People’s Network is not yet established enough for an evaluation of its role in supplying health information to the public. The project team therefore decided to concentrate on locating schemes that are currently operating and on investigating healthcare professionals’ attitudes to provision of health information on the Internet. The researchers also looked at links established between the librarian at one of the VIVOS research sites and local public-library staff and observed a training session on using evidence-based sources.

The five original sites selected for participation in the VIVOS study were chosen because their outreach services were already established. This had the advantage that a certain amount of baseline data were already available but also gave opportunity to investigate how to maintain the momentum of projects beyond the initial enthusiasm. The sites were also selected because they provided a variety of project types and environments. Two additional sites (Exeter and North Thames) were included once the project was underway. A specific aspect of each project was identified for evaluation by VIVOS:

- Leicester: A feature of the Trent FUTURES Project giving remote access to NISS Biomed databases through the issue of Athens passwords.
- Cornwall: An electronic-resources training programme run for community staff by Cornwall Library Services.
- Bury St Edmunds: The Pink Book developed by library staff at the West Suffolk Hospitals’ NHS Trust, originally as a directory of information for primary care clinicians.
- Salford and Trafford: A three-day training programme to accompany the e-STABLISH project.
South Humber  The bulletin *evidence matters!*, a regular digest sent out to local primary-care and community staff alerting them to topical issues in clinical effectiveness and evidence-based practice. This investigation also looked at access to the CINAHL database and the information-related problems faced by nursing staff in community settings.

Exeter  The Website set up by Exeter Medical Library.

North Thames  Additional data analysis for an existing database-access project evaluation.

This report is part of a set of preliminary reports produced for each of the participating sites, primarily to give an early indication of the results of each site evaluation. Work is still continuing on the data analysis and the full project-report will discuss common themes and issues raised across the site evaluations. The final report will draw upon the collective experience of the information professionals from the sites, along with the observations of the research team, to produce a set of guidelines to help other information professionals wishing to develop their own services. The results of the investigation into attitudes towards health information on the Internet and provision of health information to the public will also be presented at a later stage.

1.2 VIVOS and the Trent FUTURES Project

The Trent FUTURES (Full-Text Using Regional Electronic Resources) Project was launched in March 1998 with the aim of providing NHS staff with 24-hour access to Medline and a collection of electronic medical journals (see Appendixes for a list of the journals and databases included, although the collections have since been expanded). The service is hosted by NISS, an academic organisation aimed providing online information services for the UK education sector, and is known as NISS Biomed. Funding for the project has been provided by the Trent Postgraduate Deans for Medical and Dental Education and is reviewed on an annual basis. Access to the service is from any Internet-connected PC within the Trust or at home through the use of an Athens password. This is an important feature of the service since it potentially enables staff to exploit the service outside working hours and from variety of access-points. (Trent FUTURES Project, 1999)

The aim of the VIVOS project in Leicester was to carry out a qualitative evaluation of how staff are using the service in an attempt to establish current feelings about the service and how it could be developed to keep pace with users’ changing needs. The original arrangement covered a consortium of twenty-seven NHS Trusts and three university medical schools across the Trent region (Trent FUTURES Project, 1999). The VIVOS evaluation focused on NHS staff registered for access at Leicester Royal Infirmary. The evaluation also encompassed staff from the Faculty of Medicine and Biological Sciences at The University of Leicester who have access to the service through the academic network.

2 Methodology

2.1 Population surveyed

2.1.1 Interviews

An initial randomised and stratified sample was selected from NHS users who had registered during 1999 and up to 6 April 2000 (excluding any whose contract would be up before end of June 2000 when interviewing would be taking place). The stratification was
carried out according to job categories as given on the registration form itself and in the Trust's Annual Report, dividing the sample into:

- Medical and dental (included consultants/dentists/SHOs/Specialist registrars/PRHOs and other unspecified doctors)
- Nursing and midwifery
- PAMs (including pharmacists/theatre staff/technicians)
- Other trust staff (including admin/managers/ancilliary staff)

After discussion with librarian it was decided to make the sample representative of the numbers of each group subscribing to the service and a final sample of 202 names were randomly selected as follows:

- Medicine/dentistry: 32.25% (further stratified to ensure an appropriate representation of the different job-roles within this section)
- Nurses/midwives: 36.31%
- PAMs: 24.14%
- Others: 7.3%

It was decided that a sample of 80 potential interviewees should be contacted from the original 202 names. After several attempts at making contact (at least two in each case) it proved possible to arrange 35 interviews.

2.1.2 Questionnaires

After a piloting process, 175 postal questionnaires were sent out to 80 of the original NHS sample who had not been interviewed plus 95 members of University staff stratified by job type (research staff/clinical research/academic) selected randomly from staff lists supplied by the University. The University users had access to the NISS Biomed service through the University network and had therefore not actively gone through a registration process.

Sixty-nine completed questionnaires were returned, giving an overall response rate of 39.4%.

An attempt was made to survey 100 medical students (20 from each of the five years) by email questionnaire. Despite chasing-up, the response rate was too poor to permit analysis (4%).

The questionnaire was divided into two sections to be returned depending on whether the respondent did or did not use the NISS Biomed service. If respondents had used the service they completed Section 1 of the questionnaire which asked them about their experiences of using NISS Biomed. If they had not had experience of the service they were asked to complete Section 2 of the questionnaire which used the Critical Incident technique (Abad-Garcia et al., 1999; Chell, 1998) to explore their broad information needs and information-seeking behaviour. The Critical Incident technique asks respondents to describe a specific occasion when they had an information need and how they attempted to meet that need. It is hoped that respondents will find it easier to recall a specific incident and will therefore give a more expansive answer. Another potential advantage is that respondents can be asked to confirm how they used the information acquired.
Thirty-nine of the sixty-nine questionnaire-respondents returned Section 1 (56.5%), with the remaining thirty returning Section 2. In a couple of cases respondents returned both sections. Where this happened Section 1 was analysed since it related to use of NISS Biomed.

2.1.3 Cost–benefit analysis

One objective of the VIVOS project was to develop research and evaluation skills among information practitioners through active involvement in the project. To encourage this process, the site librarians were consulted about the sampling processes and the design and content of the survey instruments. They were also invited to participate in two workshops and were given the opportunity to propose how the sum of £2000 per site allocated for ‘research assistance’ could be effectively utilised. The Leicester site librarian opted for a cost–benefit study to be carried out by a health economist from ScHARR (School of Health and Related Research) in Sheffield. The data for the study was collected through the questionnaire. The first eight questions of Section 1 were used by the health economist to produce his report. The full report can be found in Part 2.

For the purpose of this report, individual respondents are identified by job category to protect their identity. The authors feel that it is important to attribute job type as this has a bearing upon an individual's 'world view' of their work environment (Checkland and Scholes, 1990; Mason and Willcocks, 1994). Details of job categories and numbers of survey participants are presented in Appendix 3. Quotes that are used are verbatim unless otherwise specified.

2.2 Methods employed

A qualitative approach was followed using semi-structured interview schedules administered at the interviewees' place of work. The interview schedule and questionnaires were designed in consultation with the site librarian at Leicester Royal Infirmary. Copies of the survey instruments are included in the Appendices. The interview schedule was refined over the course of the first few interviews to ensure optimum effectiveness.

2.3 Chronology of site survey

The interviews were carried out in two rounds: mid-June 2000 and early August 2000. The questionnaires were sent out in July 2000 and non-respondents were reminded during September 2000. The tasks of transcription and analysis were carried out between September 2000 and January 2001. Textual analysis was completed using NUD*IST 4 software and statistical analysis using SPSS. The cost–benefit analysis was prepared in January 2001.

2.4 Navigation of report

The structuring of the report corresponds to the emerging categories and themes from this process following the 'grounded theory' approach developed by Glaser and Strauss (1967). These concepts are used as a framework for this report, rather than simply listing responses to the questions. The sub-heading structure is designed to facilitate ease of reference to specific issues and themes.
Following this interim report, there will be formal discussion of the preliminary results with the site librarians to further validate the findings prior to preparation of the final report.

3 Work environment

The themes in the following sections emerged from analysis of the data obtained from semi-structured interviews. These comments were, in most part, volunteered by the interviewees, as asides, or additional explanations to the questions being asked. The analysis sheds light on the way work environment shapes attitudes towards professional practice and the role of electronic media in finding and using information.

3.1 Motivation

In common with the other sites surveyed by the VIVOS team, practitioners in Leicester revealed personal enthusiasm and motivation for developing IT- and information-skills.

'It all stemmed from my children going to school and I thought, this is becoming a digital world...so it sort of gave me initiative to go and buy my own computer and this is where it stemmed off, and through reading the manuals of installing my own computer I read about databases.' [N]

'I would love to be able to use it, but we are so limited on time here.' [PAM]

'...and for me it was such a great achievement, to roll all that together just seemed like something that I would never ever ever be able to do and it came very slowly. [N]

There was a wide variety of IT-skills levels amongst participants with some interviewees lacking confidence:

'But I am a bit stupid about computers.' [TGC]

whilst others felt that they had mastered the necessary skills and were able to use electronic resources effectively and quickly:

'I wouldn't say I spend a lot of time searching, usually hit quite accurately, because I do have a lot of skill in searching.' [N].

Yet regardless of skills-level there was evidence of general support for the use of IT in information, with practitioners recognising the potential benefits for themselves and colleagues:

'I found during the period of time in the last six months, six months to twelve months, I found that a lot of colleagues don't actually know much about database. So what I did was, having been in touch with the library and having used it myself, I have in turn sort of spoken to my senior manager and I think it came to light to her that not many people...know how to use, and she has in turn initiated group sessions...of going to the library and people being trained up to a standard.' [N]

'So I mean if we can put it onto the Internet, or can have it sort you, you know on the computers, then it will give us all access at a lot quicker rate than going around the libraries and looking for it...and hopefully it will be more up-to-date as well.' [N]

'I think it was last year I did actually go down to the Clinical Sciences Library, and I was shown how to do sort of searches on the Net. Unfortunately, because we don’t have the time to go off and do that very often because we haven't got the facility within our own
office areas, I don’t feel as I have got confidence and expertise in that, it is certainly something I think all of us would benefit from.’ [CP]

3.2 Using electronic information resources to support practice

During the course of the interviews several practitioners mentioned the use of electronic databases and the Internet in their daily practice. The most frequently-mentioned electronic information-source was Medline but MIDIRS and CINAHL were also cited.

When recalling a specific occasion when they looked for information (the Critical Incident technique), interviewees were asked how they had approached locating the information. Of the eighteen practitioners who responded to this question, seven said that they had referred to databases as part of their quest and three mentioned the Internet (see Figure 6 in Section 7.2 for full details). Consulting databases was the most popular approach taken.

Electronic resources are being integrated into practitioners’ daily work environments to support recent changing trends in practice.

3.2.1 Standardised care

As an implication of the moves towards professional accountability, health authorities are seeking to standardise documentation of treatment interventions and management of care. This is facilitated through the use of guidelines, protocols and policy documents.

Clinical guidelines based on the systematically analysed results of research and carefully introduced to doctors can improve clinical practice and outcomes. (Feder, 1994 p.1457).

Interviewees in Leicester recognised that electronic resources can facilitate production of and access to these documents, giving greater scope for inter-organisational communication and for the dissemination of guidelines with a foundation in Evidence-Based research.

‘…we used the literature search to actually to arrange to make some protocols for the department.’ [PAM]

‘…we were looking at writing a policy document and having sort of pathways of care related to that client group….so we were like searching the literature for anything on that' [CP]

‘…if you want to make sure your standards of care, or standards of care in a hospital, or in a unit, are what they should be then really if you can access what somebody else’s are like then you can see if you are on a par.’ [N]

‘I subscribe to MIDIRS, where you can have …I have forgotten what you call them now …..searches. I have used them in the past, you have to pay for it, but yes. …the Midwives’ Journal that comes monthly and, they are having guidelines written here that are Evidence-Based now and they are…..referenced, so you can, you can use those to help you find articles.’ [M]

3.2.2 Multidisciplinary teamworking

The trend towards standardised interventions necessitates a more cohesive team approach across and between professionals in practice. IT has an important role in promoting inter-discipline liaison and encouraging an environment conducive to teamworking:
'Yes, a whole host of PAMs going on [to NISS Biomed]...like for us we need to be aware of what the physios are doing, and you know probably vice-versa, not to do their job, but to be aware of their input. Yes, I think it would be brilliant.' [PAM]

'I actually did go on the Internet and have a look at more, not job descriptions but type of job roles...particularly on occupational therapists and physios which I did find was useful. Sort of their job roles and where we overlap 'cos we are sort of, this seamless care that we have got.' [N]

3.2.3 The informed patient

'I think patients should have a say in what they believe and how they should be treated. But I think we would both have to start off with the same type of information.' [PAM]

As the above comment shows, practitioners are responsive to the participation of patients and their carers in active decision-making about treatment and care-management. This reflects the emphasis on the ‘informed patient’ and ‘patient involvement’ in government policy documents such as Information for health: an information strategy for the modern NHS 1998-2005 (Department of Health, NHS Executive, 1998).

'It is important that people have as much access to as much information as possible.' [PAM]

'I think you have got to empower people.' [PAM]

'You get people coming in because they have found information and it's really useful 'cos it has to them into our department. And, and it's great because they know a little bit but they want a bit more.' [N]

'And actually that was quite positive actually, 'cos we talked about our aims and objectives and our goals for [therapy] and we had a lot more open discussion on that as a result of it.' [PAM]

For patients to be able to participate effectively in these decisions they must have access to current and accurate information but some interviewees expressed concerns that this is not always the case. This is particularly an issue when patients have access to the wealth of information available through the Internet:

'So you could end up with people getting hopes up or terribly, terribly misinformed under, about conditions just because some nutter has decided to put up a Web site and put a load of rubbish on it.' [TGC]

Not only do patients need access to quality sources of information, they must also be able to be able to understand and contextualise that information. This engenders a new role for health professionals as 'mediators of information' and creates ethical problems in terms of how information should be made available.

'I think the more information they have the better, but the thing is with that, for the want of a better word, sometimes deciphering what's available...’ [PAM]

'I think it should be guided because each patient they think individually and they can be easily misguided and they can misinterpret the information as well. So interpretation and understanding is quite important.’ [N]

‘...most patients who are that interested understand that doctors can't know everything. And I think if you are prepared to admit that you don't know everything that's not a bad thing.’ [TGC]
'I think generally, you know, I think it is important that this information is available to patients, it is really a case of screening what shouldn't really be given out. I don't know whether that would be possible. I don't know whether that would be morally the correct thing to do.' [SCP]

The traditional relationship between health professionals and their patients/clients is being challenged by these developments with considerable implications for practitioners:

**Raised expectations**

"They see certain lists of investigations for what something they think their child has, and they will demand things…" [TGC]

"I think it is good but it makes my life harder...some of the information I think can give them false hope about their child or about the services that will be available to them" [PAM]

"What worries me is when people read stuff and then don't, they don't have the background to understand what it is about. And then they come on all aggressive because you haven't done something that they read in some paper…" [TGC]

"I think they do tend to become confrontational, because they have obviously spent the time searching for this, they think it is new research, it is something very positive…and they think it is very negative when I say "well hang on, let's sit down and look at it, and discuss it and pick it out and try and draw the threads out from it as to whether it is appropriate, whether it is good-quality research, whether it is sensible and whether it is feasible in this country" because a lot of it is from abroad anyway." [PAM]

**Pressure to keep up with developments**

"I'm sure it must be a good thing because in a way it will force doctors to keep up-to-date. They won't be able to get away without being up-to-date." [SCP]

**Time implications**

"So you can have to spend a lot of time trying to undo misinformation if you like." [TGC]

**Re-definition of the established relationship and need for good communication skills**

"They got all the information they needed before they got a second opinion from their GP." [N]

"I believe in sharing information rather than professionals holding it all." [CP]

"…look at some ways really, not looking at practice but looking at about how we approach, how we talk to patients…” [PAM]

**3.3 Information barriers**

More than ever before, practitioners require timely and accurate information yet they still face constraints on meeting that goal. Various information barriers were identified by the interviewees. Some were general problems (e.g. location of appropriate information), some were organisational (e.g. negotiating time for literature-searching), and others were concerned with the technical problems which aggravate the problems of juggling priorities for patient care and personal development.
3.3.1 Infrequent use

‘...because I don’t use it frequently it takes me a bit of time to get into actually do the searches…’ [PAM]

'I am not doing it very often, and it seems as though things change very quickly. The way that you find out whether or not they have got what you want in the library seems to change, and the technology involved.’ [M]

3.3.2 Skills- and confidence-deficit

'I am not very computer-literate and when I think something is obvious it doesn't do that….I think people that know computers well don't find it a problem. But what seems to me the logical thing to do isn't necessarily so.’ [TGC]

'I am a bit phobic of that and it is quite hard for me to do it.’ [PAM]

‘...I am sure this is partly due to my lack of experience of using the system and due to my inability to use the system properly.’ [N]

'I don't feel as I have got confidence and expertise in that.’ [CP]

3.3.3 Organisational barriers

'I know there is a lot more available if you sort of went to the University, they have taken a lot away from us [a reference to the nursing library moving off-site to de Montford University].’ [M]

'You get pressures off the doctors to see the patients, and you say "Oh, I am just going off to do a literature search!" It wouldn't go down well.' [PAM]

Several interviewees stated that they find it difficult to negotiate dedicated time within the working day for accessing the information they need for coursework or clinical practice. In some cases practitioners had successfully managed to agree a time-slot with line managers but felt that they had to be able to provide concrete evidence that they used the period effectively or that it was available in specific circumstances only.

'I think you have got to negotiate time, we don't actually have time built in and I know a few of us have suggested that professionally there should be time for reading of whatever sort and doing this sort of thing.’ [CP]

'If I leave the site to go and do a search, it all depends on the staffing level on the ward, whether it's relevant to my job. I have to actually declare that to the manager that I am doing it. I have approached them to allow that time zone and normally I get given roughly about I think it is one afternoon per month…I have to justify that I have been actively doing something…that I am actually retrieving some sort of solid info.’ [N]

'Yes, if it is like our appraisals and things then we are allowed study time. Obviously not great big chunks out of every week, but we are allowed some study time.’ [PAM]

3.3.4 Logistical barriers and IT problems

'And I think to a certain extent departments are at fault because they don't always allow staff to use the facilities that are available.’ [PAM]

'It's usually evenings, because we haven't got online access at work.’ [SCP]
'It is only available on two computers, but I mean it depends 'cos I don't, I mean usually it is not a problem but there is just certain times when it is difficult to get on them.' [PAM]

'I tried to organise some [training] but the library staff weren't available when I was and I never got around to trying again.' [TGC]

'...if we have there is only one, it would be the ...service manager's computer but other than that I would have to go to the library.' [PAM]

'Unfortunately because we don't have the time to go off and do that very often because we haven't got the facility within our own office areas.' [CP]

'...in the library there are only a couple of computers you can access isn't there? And they are quite slow when I am attempting the plans.' [PAM]

3.3.5 Time pressures

'...in reality there are so many patients waiting just for [therapists]. There is so much stress off the wards to see the patients, in reality there is not the time anyway, it doesn't happen.' [PAM]

'Time really at the moment, just so tied up in your job role and you don't get time to get over there unless it is out of hours.' [M]

'You know the information is there if you have the time to go and look for it.' [PAM]

'I don't have a specific session where I would have time away form my office or time within my office away form my clinical supervisory role and I find that that is the main reason why I don't get to go in and use it.' [SCP]

'Unfortunately we don't have time for the research that, I mean, I would like to do.' [PAM]

'...we are too rushed at work and I don't have a lot of time to go to the library and to do a manual search.' [PAM]

3.3.6 Problems locating appropriate information

'...I found that in my line of work that there is a lot of information I need to access but is not readily available on the ward.' [N]

'There's been occasions when I have, like [professional organisation] I have contacted them for help with something, and had very little from them, yet on other occasions, you go somewhere for something, even, them again and you get flooded with information, so it's very....It seems to be at times it's better than others...It is a bit inconsistent.' [N]

'I learnt not to look too deeply I must admit because sometimes you get overwhelmed.' [N]

'...sometimes it says that it's got full text, and when you actually pull up the full text it gives you lots and lots of details about the reference. But it doesn't tell you what the actual full text is.' [TGC]

4 Use of NISS Biomed

4.1 Levels of use amongst survey participants

Of the sixty-nine questionnaires returned, thirty-nine respondents had completed Section 1 indicating that they had used the NISS Biomed service. These data were used by the
health economist from ScHARR in preparing the cost–benefit analysis report, a full copy of which can be found in Part 2. In the latter part of Section 1 respondents were given the opportunity to state reasons for not using the service. The following comments illustrate those supplied:

'Need to be in library to use, lost password, other methods seemed easier.'

'Easier to ask someone on the ward instead of leaving the unit to go to the library'

'I need training to use a computer.'

'Cannot remember details of how to access service.'

'Parking access. Also time as I am based 11 miles away from library.'

'Lack of time to access training as a good distance from place of work.'

'Peripheral interest in medical topics – I may consult journals in the future.'

'Never been made aware of it.'

'I feel de-skilled. If you don't use these things frequently you lose ability and confidence in using them.'

'Was not obviously relevant for the topics in question.'

'I've always used BIDS for literature searches.'

In the interviews, twenty-four people said that they had used the service at least once, although some were initially unclear as to whether they had accessed the databases through NISS Biomed or by other routes. The eleven who had not accessed it gave the following reasons:

<table>
<thead>
<tr>
<th>Reason given for lack of use</th>
<th>Number of interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of time</td>
<td>3</td>
</tr>
<tr>
<td>Lack of need at present</td>
<td>3</td>
</tr>
<tr>
<td>Doesn't have the password with them</td>
<td>1</td>
</tr>
<tr>
<td>Doesn't know enough about it</td>
<td>1</td>
</tr>
<tr>
<td>Lack of IT skills</td>
<td>1</td>
</tr>
<tr>
<td>No dedicated time-slot allocated</td>
<td>1</td>
</tr>
<tr>
<td>Lack of access to a computer (not based at Leicester Royal Infirmary)</td>
<td>1</td>
</tr>
</tbody>
</table>
4.2 Purpose of use

Interviewees were asked whether they could describe what they have used the service for in the past. Nineteen practitioners gave details of why they needed the information they had looked for on NISS Biomed as follows:

<table>
<thead>
<tr>
<th>Purpose of use</th>
<th>Number of interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>To support research and/or education</td>
<td>12</td>
</tr>
<tr>
<td>For patient care</td>
<td>3</td>
</tr>
<tr>
<td>To support teaching</td>
<td>1</td>
</tr>
<tr>
<td>Producing guidelines</td>
<td>1</td>
</tr>
<tr>
<td>Finding information on behalf of others</td>
<td>1</td>
</tr>
<tr>
<td>For a journal club</td>
<td>1</td>
</tr>
</tbody>
</table>

"Yes, I have used it during a live consultation with a patient to check out up-to-date information regarding patient's condition." [SCP]

"I have used it when I have been doing projects on courses to look for research data." [N]

"...when there is something relating to a patient's condition that I don't know about." [N]

"We use them for our journal clubs, which we do every month so we search specialist journals related to our area of work." [PAM]

4.3 Frequency of use (see also cost–benefit report in Part 2)

When interviewees were asked to estimate how often they accessed the NISS Biomed service there was a wide range of replies with three practitioners saying they have used it just once since registering whilst others access it at least once a week.

Access once every two or three months was the most popular pattern followed by a group of practitioners who use it several times a month. Other interviewees were unable to give an estimate, saying that use was sporadic and depended very much on need. One simply stated 'very rarely'. Nurses appeared to be amongst the most frequent users and this may be related to the demands of continuing professional education since several stated that use was closely tied to course requirements, for example:

"Well, I did, so that was a nine-month course that I did and I did seven modules in it. So it was very intense, so I was using it at least twice a week, if not more some weeks depending on where the due date was for the assignment." [N]
### 4.4 Point of access

Both the interviews and the postal questionnaires attempted to ascertain where users tended to access NISS Biomed from. A potential benefit of the service is that, once issued with an Athens password, users can access the service from any Internet-connected PC giving them the opportunity to search whenever and wherever it suits them. The VIVOS evaluation aimed to establish whether users were in fact taking advantage of this facility.

Of the interviewees who responded to this question, 17 percent said they accessed the service at home with 21 percent saying that they used it at work (i.e. in office or unit). Twenty-five percent said that they went to the Clinical Sciences Library to access the service and the remaining 37 percent said that they used a combination of these locations to suit their convenience. Of those in the last category the vast majority (nearly 90 percent) mentioned home as one of their preferred locations.

Respondents to the questionnaire were given the option of indicating as many locations as were applicable. The spread was fairly even:

<table>
<thead>
<tr>
<th>Number of times indicated</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital department</td>
<td>16</td>
</tr>
<tr>
<td>Home</td>
<td>14</td>
</tr>
<tr>
<td>Clinical Sciences Library</td>
<td>14</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
</tr>
</tbody>
</table>

Of those respondents who stated 'Other' most said that they accessed NISS Biomed from their University department. On reflection, this category should have been included in the questionnaire.

Comments made by some of the interviewees imply that the choice of location is often motivated by logistics, cost and/or time issues, for example:

'Yes, I do do searches at home…..but now, now having discovered that the search done at library is free, I tend to go for the….library in our own hospital.' [N]

'it's usually evenings because we haven't got online access at work.' [SCP]

'No, it's in my own time. No, there is not time available for studying.' [N]
4.5 A specific example of use of NISS Biomed

In a similar approach to the Critical Incident technique used in the questionnaire, interviewees were asked to recall one specific occasion on which they accessed the NISS Biomed service. They were then asked questions about this occasion with a view to exploring their use of the service in greater depth.

Practitioners were asked to estimate how much time they spent searching the databases and then retrieving and reading the articles identified in the search. The time spent searching ranged from 'a couple of minutes' through to 2–3 hours with most interviewees (10 out of 24) saying that they spent 1–1½ hours. Participants struggled with estimating how much time they spent retrieving the articles since several of them had been unable to find any relevant hits during their initial search. Others said that they had problems locating the actual articles because they were not available in full-text versions online and a trip to the library had been necessary. Those interviewees who did attempt to estimate time spent retrieving articles gave answers ranging from 10–15 minutes to 4–5 hours (with two people saying they spent 2 hours). Understandably, it proved equally difficult for participants to estimate how much time they spent reading the articles. Few answered this question and of those that did only three were able to specify time spent: one said '5 hours roughly' and two thought they had spent 'a couple of hours'. Others said that it varied for each article, that they were still reading the articles or that they kept the articles to share with colleagues.

The researchers then asked what interviewees would have done on that specific occasion had NISS Biomed not been available and explored whether respondents could estimate whether time was either saved or spent extra through using NISS Biomed as opposed to the alternative sources. Although interviewees found it difficult to quantify the amount of time saved/spent extra they did express the conviction that on the whole time was saved by accessing NISS Biomed as the examples below indicate:

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Alternative sources</th>
<th>Time saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Look in current issues of journals</td>
<td>'It would have been a nightmare!'</td>
</tr>
<tr>
<td>SCP</td>
<td>Visit to specialist library in Birmingham</td>
<td>'Birmingham and back – funnily an afternoon!'</td>
</tr>
<tr>
<td>PAM</td>
<td>Visit to library or would ask colleagues</td>
<td>'I do feel I would have saved quite a bit of time'</td>
</tr>
<tr>
<td>TGC</td>
<td>Hardcopy Index Medicus</td>
<td>'I would imagine it's a lot quicker if you can do it on the computer'</td>
</tr>
<tr>
<td>N</td>
<td>3–4 hours spent at library</td>
<td>'This was excellent...you can actually look it up when your kids have gone to bed ...that is the golden key'</td>
</tr>
<tr>
<td>N</td>
<td>Internet</td>
<td>'Days! A long time, yes, just searching for things on the Internet can be difficult'</td>
</tr>
</tbody>
</table>

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Finally, practitioners were asked whether they thought the information they had acquired would have any impact on their clinical decision-making. Eight participants replied to this question. One said that it would have no impact and one said that it would have an impact if more information was readily available on databases. The others said that it would have an impact and had used/intended to use the information in the following ways:

- To develop departmental protocols
- To review departmental practice
- To help in clinical reasoning because gives more background knowledge
- Will be written into an audit
- Will use it with patients
- Will give more insight into things when working on them

5 Health professionals' views on the NISS Biomed service

Interviewees and questionnaire-respondents gave their views on aspects of the NISS Biomed service that they have found particularly useful and made suggestions for possible enhancements to the service.

5.1 Useful features

Users were impressed with:

5.1.1 Accessibility

'The ability to use it at home, and that is great.' [N]

'As a working mother, I do not have time to visit libraries etc. in my "spare time", I can log on at any time.' [from questionnaire]

'It enables me to perform literature searches from home, without inconvenience of booking a terminal restricted to 1 hour.' [from questionnaire]

'Ease of use, i.e. from my office I can log in.' [from questionnaire]

'Can achieve most of my literature searching and reading from my office.' [from questionnaire]

'Ease of access to search when want to.' [from questionnaire]

'Access to service independent of the library.' [SCP – not direct quote, interview not recorded]

'Easy access at your convenience.' [from questionnaire]

'Easier to intercalate literature review with other duties.' [from questionnaire]

5.1.2 Ease of use

'I think it's easy to use.' [PAM]

'Well, the first time I got through really easily to do the Biomed and the CINAHL, so that is what I wanted.' [PAM]
"Easy access of material." [from questionnaire]

'The instructions, when I could use them, the instructions were good…The ones I saw on the screen.' [PAM]

'I think it is quite simple to use.' [PAM]

'Easy, instant access to info.' [from questionnaire]

5.1.3 Speed and convenience

'Large economies of time.' [from questionnaire]

'Access to many articles/papers without having to search through many books/journals in several libraries.' [from questionnaire]

'Saves time in searching for info.' [from questionnaire]

'Valuable time saved on literature searching. Medical/nursing journals at my fingertips.' [from questionnaire]

'Perhaps speed and retrieval of appropriate articles.' [N]

'Quick and gives you what info you need on the particular subject in question without going round the house wasting time trying to find relevant info.' [from questionnaire]

'Able to quickly find relevant publications when undertaking research, audits or projects.' [from questionnaire]

'Saves time.' [from questionnaire]

'Quick access to relevant information.' [from questionnaire]

5.1.4 Comprehensiveness and currency

'When I have used it, it has just been useful to have so many things there in the one area.' [N]

'Provides wider range of info that [sic] just what's in library.' [from questionnaire]

'Search large numbers of articles using keywords of author names.' [from questionnaire]

'Well, it's quick and, I mean, you do get a lot of information. There's lots of topics that you can see.' [PAM]

'Comprehensiveness' [from questionnaire]

'Allows you to find articles on general subjects (although I've never found any!)' [from questionnaire]

'Access to up-to-date information.' [from questionnaire]

'Up-to-date references available.' [from questionnaire]
5.1.5 Availability of full-text journals

'Access to full text.' [from questionnaire]

'Full-text journal availability.' [from questionnaire]

'Indication and access to full text is the most useful.' [from questionnaire]

'Some full-text journals are available.' [from questionnaire]

'Full text on a lot of articles.' [from questionnaire]

5.1.6 Search- and navigation-features

'Selection of time period, limiters, combination functions' [CP – not direct quote, interview not recorded]

The limiters, combining, being able to look at specific dates rather than having to scan the whole lot.' [PAM]

'Saving previous searches....ease of combining searches.' [from questionnaire]

'...it allows you to do different things doesn't it, like expand your search or narrow it down, which is useful...and combining, looking at different keywords...and the way you can say cut off the year.' [PAM]

'Good cross-referencing.' [from questionnaire]

'I think it is always, it's useful that you are able to actually filter in English, and also as well you can actually decrease the years because obviously using literature, we tend not to use literature over five years old if we can. So that is helpful sometimes and it makes the search a bit quicker.' [N]

'Author search, specific word search' [N – not direct quote, interview not recorded]

'Ability to combine searches'. [from questionnaire]

5.1.7 Pertinence of abstracts

'Good article/abstract reviews.' [from questionnaire]

'I think, because you got quite a lot of information about what each article was about so that was helpful.' [PAM]

5.1.8 Lack of subscription fees

'Free to use.' [from questionnaire]
The questionnaire-respondents were asked to indicate features of NISS Biomed that they had made use of. Their responses can be seen in Figure 1 (each respondent was given the facility to indicate more than one feature).

Figure 1 NISS Biomed features used

It can be seen from the Figure that the searchable databases are particularly popular with users, followed by full-text journals and the convenience of being able to access the service outside working hours.

5.2 Suggested enhancements

Both the interviews and the questionnaires gave participants the opportunity to suggest enhancements that they would like to see to the NISS Biomed service. In the interviews many people claimed that they did not have sufficient experience of using the system to venture potential enhancements but the comments gleaned from other interviewees and the questionnaire-respondents fall into seven groups of suggestions.

5.2.1 Increased provision of full-text articles, preferably in PDF format

There were widespread pleas for an increase in the number of full-text articles available through the NISS Biomed with several practitioners specifying that they would like these articles to be available in PDF format.

'More journals available electronically on full-text.' [SCP – not direct quote, interview not recorded]

'Full text and pictures!' [from questionnaire]

'PDF version download.' [from questionnaire]

'So I have been having to get a fair number of interlibrary loans and it would be much better if I could just call them up.' [TGC]

'More full-text journals/articles.' [from questionnaire]
'More full-text journals.' [from questionnaire]

'more full-text journals available online.' [SCP – not direct quote, interview not recorded]

'PDF format articles and more of them.' [from questionnaire]

'More access to full-text in PDF format.' [from questionnaire]

'More full-text please.' [from questionnaire]

Indeed, several questionnaire-respondents returned to this theme when they were invited to add any ‘further comments about the NISS Biomed service’:

Please offer all full-text as PDF

Very user friendly, but could do with PDFs

Please provide more full-text journals

One respondent said that s/he tends to use PubMed for literature searching but uses NISS Biomed

'to retrieve full-text articles where I cannot otherwise get them. However, the full-text articles are not formatted very well and would be much better in PDF.'

5.2.2 Improved access

Although many participants clearly appreciate the improved access to information provided by the NISS Biomed service, others are still struggling with access issues. If people are unable to access directly from their department/unit they will often turn to the computers in the library which can place pressure on the facilities located there.

'Access from my department at work.' [from questionnaire]

'More Internet terminals in the Clinical Sciences Library.' [from questionnaire]

5.2.3 Increased coverage for certain specialties

Some participants felt that there was limited information available for their specialty or that the online journal-archives did not cover sufficient timespan.

'More rehab/manual therapy literature.' [from questionnaire]

‘…less medical-oriented really.’ [PAM]

'Addition of Psychlit database.' [from questionnaire]

'…we found that the articles and the things that I wanted hadn’t been completed, and we could only see the titles and we couldn’t actually get to see… even a citation of what might be in it. Um the actual things we wanted, I wanted were probably over, I think they were over six years, or over five years and they had only got as much as five years on… Which really wasn’t, you know I mean I know you are meant to use current things, but current to us we were told was ten years, and a lot of the things I wanted were sort of the ten year mark.’ [N]
5.2.4 Technical/skills issues

Some interviewees had experienced frustrations attempting to use the service. At times these were due to technical problems but frequently practitioners felt that they were maybe not using the service to its full capacity because they were inhibited by lack of experience and familiarity with the system.

‘But the second time I had difficulty actually getting through, and then I couldn't actually pull up abstracts to have a look at, to see whether I thought they were relevant or not, so I sort of gave up.’ [PAM]

‘I have no problem getting abstracts, but when it says full text it doesn’t seem to give me any obvious way, but I am a bit stupid about computers.....so it could be me.’ [TGC]

‘...it takes quite a while doesn’t it.....the actual accessing the computer, it takes a little while to actually, you know, getting the relevant...but that could also be down to myself and my own lack of experience mightn’t it? Rather than the actual system.’ [N]

One interviewee would like to see an onscreen 'idiots' guide' to using the service with very clear instructions at a basic level. This interviewee explained that

‘...exploding trees don't mean anything to me! ...we're not all academics.’ [RM]

5.2.5 Enhancements to features of the service

Suggested enhancements focused on ways of making the searching and retrieval processes simpler and faster. As can be seen in Section 5.2.1 there was strong support for increased access to online full-text journals, where full-text is not available online then respondents expressed a preference for online document-request facilities because they felt this would be quicker than having to order interlibrary loans through traditional methods. The VIVOS researchers understand that there is currently a facility for online ordering of interlibrary loans so it may be that some users are not aware of the full range of library services available to them.

‘Ordering copies of documents online. It would save me considerable time if it was possible to generate a photocopy request form/interlibrary load whilst browsing searches. It would also be very useful to exclude literature that has already been brought to light from other databases, to save trawling though it over and over again, and potentially requesting photocopies twice.’ [from questionnaire]

‘Links to be able to order articles not available locally.’ [from questionnaire]

Respondents would also like to reduce the time it takes them to locate relevant articles whilst searching. Some felt that the interface was not particularly user-friendly or that the search facilities could be improved. However, since not all questionnaire-respondents indicated whether they had received training on the use of NISS Biomed, it is possible that appropriate training may help some refine their searching skills and hence lead to faster retrieval.

‘Easier to find relevant articles it does tend to throw up anything remotely connected.’ [from questionnaire]

‘Higher degree of specificity when conducting searches for specific topics.’ [from questionnaire]

‘Greater speed. Easier interface.’ [from questionnaire]

‘Easier search methods – it's hard to go back and change search criteria. More articles.’ [from questionnaire]
‘Faster searching.’ [from questionnaire]

‘Increase speed – it can get slow at busy times. Increase number of full-text journals.’ [from questionnaire]

Another way of making the search process easier is to ensure that articles are indexed in a logical and accessible way. One respondent felt that this did not always happen:

‘Better indexing of qualitative research’ [from questionnaire]

The timed log-out caused frustrations for one nurse:

‘It tends to log you out after ten minutes which can be a bit of a pain, especially you know, if you have got to deal with something and...if you are not careful and you haven't saved what you have already scanned through and you have to start all over again. And I have cried a couple of times over that!’ [N]

5.2.6 User-support

Participants were asked about their perceptions of information-support and their responses are covered in Section 6. However, several did mention issues relating to provision of support in the context of possible enhancements to the NISS Biomed service. The first comment below relates to earlier issues raised about ease of accessing articles identified through literature searches. The latter quotes refer to the need to support use of electronic resources through training programmes for both users and library staff.

‘All the text in the library – there is a lot of missing journal issues.’ [from questionnaire]

‘Better training online.’ [from questionnaire]

‘Better response to enquiries.’ [from questionnaire]

‘Better locally-trained librarians.’ [from questionnaire]

5.2.7 Review of password policy

One of the key features of the NISS Biomed service is the provision of an Athens password for registered users. This is aimed at promoting ease of access by making NISS Biomed available from a variety of locations yet ironically several respondents found it a disincentive to use the service. One interviewee [SCP] said that he preferred to access Medline through the BMA Website. He felt that ‘at the end of the day the Athens password was horrendous and made no sense at all’ and found the BMA password a lot easier. He found that ‘in a world where we all carry about fifty passwords around with us’ it seemed sensible to continue using one that he found easy to remember. A couple of the questionnaire-respondents also raised the issue of passwords. One suggested dispensing with the Athens passwords as a possible enhancement to the service and the other said that, although s/he liked the NISS Biomed service, PubMed was easier to use since it required no password.

In fact several questionnaire-respondents stated that they accessed PubMed in preference to NISS Biomed, for a variety of reasons beyond the password issue:

I now find PubMed easier to access and has PDF links for some articles.

I use PubMed as a first search as it has more articles and is easier to use.

I do not usually use NISS for database searching. PubMed is excellent for this.
6 Information support

6.1 Training on use of NISS Biomed

Interviewees were asked whether they had received training on the use of NISS Biomed. Of the thirty who gave answers to the question, twelve said that they had received training, although in some cases the training had been in general database-searching skills rather than specifically tailored to the NISS Biomed service. The range of reasons given for not having attended training encompassed:

- Not having felt the need for formal training.
- Lack of time.
- Reliance on library staff for assistance.
- Lack of availability of library staff at time interviewee hoped to arrange a training session.
- Has not been offered any training.
- Use of written instructions from the library.

'No, but I have been offered it though.' [N]

'I am aware but I have not followed it up. It's again the caseload priorities…' [PAM]

'I was offered it when I initially went into the library, if there were any problems I could come back and they would go through it with me.' [SCP]

'No because I was actually with a representative from the library anyway who actually did the accessing for me.' [HBM]

'I tried to organise some, but the library staff weren't available when I was, and I never got round to trying again.' [TGC]

'...I had a list of instructions to start off with.' [N]

There was no typical pattern of experience amongst those interviewees who had attended training sessions. Some had received dedicated NISS Biomed training from the library staff at Leicester Royal Infirmary, whether formally or informally:

'...I did when I first set up, joined the library. They run regular courses.' [N]

'I got offered the one at the Clinical Sciences Library and I couldn't actually make the one…..but she did give me a quick one-to-one…she did say if you want some increase there please come to one of the sessions.' [N]

whereas others had received more general training in the past or at other institutions. Several had actively sought out the training by contacting the library staff and requesting a session. Two interviewees mentioned that they thought they would benefit from further training:

'...I think initially on the first time when you meet such sort of facility, it doesn't quite sink into your head so a second session is normally required for better understanding.' [N]

'...it was such a long time between, I find it difficult to go back. I probably really need to have more training.' [PAM]
Other participants revealed a potential need for training (for both information- and IT-skills) through other comments during the interviews:

‘...I think it's something I would need further practice on. I think there are specific skills that you need to search effectively, and I mean not convinced that I have got those skills.’ [PAM]

'I find that at the moment there is just so much information out there I don't necessarily know the right course of action to take to cost-effectively get the right information I actually want.' [HBM]

'I think it is just basically ringing Computer Services and saying "can somebody come over and sit with me for an hour or two and just go through basics on here as to what I can get into".' [M]

The questionnaire also broached the issue of training and asked whether respondents thought that adequate training for information-skills was available. The responses are given in Figure 2.

**Figure 2 Questionnaire-respondents' perceptions of training for information-seeking skills**

Several of the questionnaire-respondents did not know that training was available through the library:

‘...not advertised very well – don't really know what's available.’

'If so, not publicised.'

'None given.'
Others seemed aware that sessions could be organised but did not feel that they needed to attend:

'Not required.'

'Good documentation but not a training course is needed.'

'Not yet needed to use.'

One questionnaire respondent felt that full provision of training was hampered by availability of (presumably library) staff, whilst another suggested that an online training/help service could be developed.

The questionnaire also asked for feedback about the help-sheets issued by the library. Again, few respondents had taken advantage of the help-sheets with seven saying that they did not remember receiving a sheet. Two had referred to the sheets but found them 'confusing' and limited in scope ('only gave log-on introductions, username and password and contact numbers'). When NHS users register for NISS Biomed access at the Clinical Sciences Library they are given a two-page help-sheet. A further help-sheet is located from the library and would be available to University staff. When registering, NHS staff are also given a brochure advertising the range of library-run training courses.

6.2 Views on current information-support services

This quotes in this section mainly represent the views of the interviewees (i.e. NHS staff registered at the Clinical Sciences Library) because the interviews gave much greater scope for discussion of views on information support than the questionnaire.

6.2.1 Support from library staff

The majority of respondents were satisfied with the support they receive from information professionals. They clearly rely heavily on library staff for help with searching – whether with compiling search strategies or by asking staff to entirely take over the search:

'I have found them very helpful at the Clinical Sciences Library…whenever I have asked anything they have always been fine and they have always given the information by a set day and it has happened. So it has been good.' [CP]

'I seek advice and I depend on the librarian to give me some advice and idea as to what the quickest route is, that is what I normally do before I make any search at all.' [N]

'Yes, they are doing it for me and I think, to be honest, for most things that is more effective because they are doing it all the time and it is quicker.' [CP]

'Well I do it through the library, if I ring up…usually they call me the next day to collect it when it is ready.' [N]

'...they have done quite a few searches for us recently on different topics, and they have come back with quite a few titles and abstracts so that has been very useful for us.' [PAM]

'...I have tried to do it myself but I often ask them at the library to do it for me.' [PAM]

Participants were also appreciative of the training courses run by the library and feel that the Clinical Sciences Library compares well with others they have experienced:

'...if there wasn't a training session for the time I would go into the library, they are very helpful in there, and just ask them for that...session. They have helped me in the past actually.' [PAM]
'Well, it was good 'cos it was hands-on, in a special room in the library so you can actually use the computers and make your own searches.' [PAM]

'I think it is very good. I mean I have worked in a smaller hospital previously and done lots of placements in six other hospitals, I mean I think the LRI is very good. It does a lot of training sessions, especially in the library, that have been good.' [PAM]

Library staff are generally seen as being helpful and approachable:

'I tend to go to the librarian they are very helpful.' [N]

'Whenever I have needed information I have been able to get it. They were very helpful. …I certainly went on an introductory course with the library which I found extremely useful and they did offer support after that.' [SCP]

'…when I had problems with it, the library staff tried to help me though.' [PAM]

'Seems good actually, just helpful. I think there is training available if you want it and they are willing to do searches for you as well.' [PAM]

and the overall impression is positive.

In library support v. good.' [from questionnaire]

'The Clinical Sciences Library I think is quite good. You know, we have got access to the Internet and things like that, and the computer systems you know aren't always fully used so you know we always tend to have access.' [N]

'I find the library resources extremely useful.' [HBM]

'I think it is very good.' [PAM]

'It's very good actually, I think the library could probably generally do with being expanded.' [N]

Most questionnaire-respondents who gave their opinion on this subject were also satisfied with the level of support (see Figure 3).

6.2.2 Inhibitors to library use

The final comment in Section 6.2.1 illustrates that, although there is considerable goodwill towards library services, some practitioners feel that the scope could be wider. Several mentioned that the Clinical Sciences Library could not satisfy all their information needs and that they were forced to look to other libraries such as that at the University or to specialist libraries at other sites for supplementary support, for example:

'I think from the medical side of things it is probably very good, but for my speciality in particular I think it's limited…' [SCP]

'For nursing there isn't as much as I think there ought to be, it is predominantly medical and the other disciplines.' [N]

Other respondents were concerned that they find it difficult to access the library for information or for training sessions during normal working hours.

'Out of hours at library desk is not good.' [from questionnaire]
Figure 3 Questionnaire-respondents’ views on whether help-desk support either by phone or in person is adequate.

<table>
<thead>
<tr>
<th>Q23: Adequate help-desk support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing</td>
</tr>
<tr>
<td>Count</td>
</tr>
</tbody>
</table>

‘Library access is not always available when needed.’ [SCP – not direct quote, interview not recorded]

‘But there is not training to sort of, you know, how to use the Internet and things like that. You would have to go to the library here and then they would be able to tell you things very, very briefly…[interviewer asks whether going to the library would be an obstacle]…Yes, it certainly is within the hours of nine to five when you are stuck here.’ [TGC]

Practitioners appreciate that there are many demands on library staff time but like to have personal support when they encounter problems:

‘…it does say if you need help you can email this or that number. I wouldn't have a clue how to go about that. Because I would want them to look at the screen in front of me.’ [TGC]

One interviewee suggested that a ‘trouble-shooting’ role could be developed to provide instant support, maybe by telephone, without impacting on other library services.

‘…I mean, the ladies in the library have got other things to do as well so the can’t spend their whole time just with you…so maybe a trouble-shooter, or maybe, I don’t know, even telephone-access to a trouble-shooter while you are actually at the computer as opposed to somebody, you know, after the event has happened.’ [PAM]
6.2.3 Promotion of library services

There does appear to be general awareness of the services provided by the Clinical Sciences Library and one interviewee had experienced active involvement of library staff in team-meetings. Others had been made aware of training courses through leaflets produced by the library or through communication from library staff.

'Well, we recently actually had one of the librarians come in…we had a big staff meeting…and she said…that groups of six people can actually go, book a time with the librarian, and they will show you Internet access, how to sort of play around with NISS, and things like that. So the support is there, it is getting yourself organised to go there really.' [PAM]

'I think it [information support at Leicester Royal Infirmary] is very good. It is regular and it's an opportunity to access it at very short notice and I just think they make it aware that they provide…they actually advertise it as part of one of their services from the library.' [N]

'I think the library do quite a comprehensive leaflet. We had to go over and pick it up but we have booked in quite a lot of training with them as a team.' [PAM]

'I think when you join they do explain that there's courses. And I think there's also leaflets in the library.' [N]

However, some practitioners did feel that the library could capitalise further on opportunities to advertise its services.

'…I am not convinced that they probably promote what they do enough.' [PAM]

'Well, basically the computer was delivered and put there and you are left to get on with it. It is up to you to try and find somebody who can show you what to do with it, but there is no sort of organised programme of teaching as far as I am aware.' [M]

Specifically, the fact that several interviewees were unsure as to whether they had actually used the NISS Biomed service to access databases implies that awareness levels may need raising through wider promotion of the NISS Biomed 'brand'.

'I have used a system on the Internet, but I couldn't even tell you whether that is the system that you are talking about.' [PAM]

'Right, it is probably easier I tell you what I do use because I am not sure what I use.' [CP]

'I think so…if it is what I think it is …' [PAM]

One interviewee suggested that the service could actively be promoted through the noticeboard system to alert new members of staff. Since Leicester Royal Infirmary is a large teaching hospital there is a regular turnover of health staff and promotion of services is potentially a challenge.

'I think it could be better introduced to, to the staff at the hospital through the library. I think the library should sort of advertise it more, sort of on the noticeboard because you are always getting student doctors, student nurses and a lot of health staff which are newly starting…I think if they sort of leave a notice on the noticeboard then people will be more attracted to know about info. [N]'
7 Information needs and use

Interviewees and questionnaire-respondents who had not accessed NISS Biomed were encouraged to elaborate on their typical information-seeking behaviour through the use of the Critical Incident technique. This technique investigates a particular instance of information-need and the steps taken by participants to resolve that need. The prompts varied slightly between interview schedule and questionnaire (see Appendices) but the same general approach to the Critical Incident was followed in each case.

7.1 Information required

Figure 4 Critical Incident: why the information was needed by interviewees
Figure 5 Critical Incident: Why the information was needed by questionnaire-respondents

Leicester Question 17

Patient care was the main driver for the interviewees whereas research and publication featured very strongly amongst replies from the questionnaires. This is probably due to the fact that interviewees were all NHS staff whilst the questionnaires were sent to a broader sample that included research and academic staff at The University of Leicester. Questionnaire-respondents were given the opportunity to list ‘other’ reasons for their information-need if applicable. Only one respondent completed this category and explained that the information had been needed for planning a clinical service. However, the fact that research and education were also popular drivers for the interviewees indicates that overall these are important precipitators of information-seeking.

7.2 Where participants looked for the information

Here the wording differed slightly between interview schedule and questionnaire. The interviewees were asked where they looked for the information whereas the questionnaire-respondents were given a checklist of sources and asked to indicate those they had used. The interviewees’ responses can be seen in Figure 6 and those from the questionnaire-respondents in Figure 7.
Both sets of replies indicate established use of electronic media but continued use of more traditional sources such as libraries or tailored collections held personally or in departments/units. The questionnaire-respondents who supplied details of ‘other’ sources of information cited: services of a researcher, BIDS and ‘phone call to National Headquarters’ A total of ten respondents stated that they had turned to colleagues for
help with information-seeking on this specific occasion. On further discussion with interviewees it became clear that several others had also approached colleagues for guidance although they did not specifically mention this in answer to the initial question.

"I asked colleagues…other [PAMs] yes.’ [PAM]

'I suppose I did, I did speak to a colleague actually.’ [CP]

'Some of the staff in department know about neurology, asked them.’ [PAM – not direct quote, interview not recorded]

'I went to my tutor, Help! Help!’ [N]

There is a strong tradition of using personal networks in information-seeking, particularly identified amongst nursing staff:

'This pattern of use of informal sources confirms the accepted thinking that nurses will, unsurprisingly perhaps, use local colleagues as a source of information. Reliance is also placed on local specialists, whether nursing or allied health.’ (Urquhart and Crane, 1994 p241).

and the above comments show that these networks still have an important role to play, for practitioners from a variety of job types, in spite of the growth of electronic resources.

7.3 Were participants successful in their quest?

When asked whether their information quest had been successful, the majority of respondents confirmed that it had been, at least partially, productive (see Figures 8 and 9). Most interviewees said that they had either located exactly the information they required or that they had retrieved several satisfactory articles on the topic although some were more relevant than others. One said that she had located 'lots and lots of information' but that she was still a bit disappointed because her topic was specialised and she suspected that there was potentially more relevant information in journals not covered by the CD-ROM she had searched.

Figure 8 Critical Incident: were interviewees successful in their quest?
Questionnaire-respondents were further asked whether the information-seeking example given in the Critical Incident was typical of their information-seeking behaviour. Their responses are found in Figure 10.

**Figure 9 Critical Incident: were questionnaire-respondents successful in their quest?**

![Bar chart showing success in obtaining information needed](image)

**Questionnaire-respondents were further asked whether the information-seeking example given in the Critical Incident was typical of their information-seeking behaviour. Their responses are found in Figure 10.**

**Figure 10 Critical Incident: was this a 'normal' search for questionnaire respondents?**

![Bar chart showing Q20: Normal or usual type of search](image)
7.4 Were participants satisfied with the information they found?

The interviewees were encouraged to talk about their levels of satisfaction with the information they located on that specific occasion. Overall, most (15) said they were generally pleased with what they had found even though some felt it didn't entirely meet their needs:

'Well, yes, it gave me the background I needed to talk to colleagues about this patient, yes.' [SCP]

'Yes, yes, very satisfied.' [PAM]

'More or less, yes.' [N]

'Yes, yes. I learnt not to look too deeply I must admit because sometimes you get overwhelmed.' [N]

Five interviewees had not been successful. The reasons given for this were:

- Document required had been superseded
- Hasn't yet managed to find the information
- Information not available on the age-group required
- Not able to locate a suitable staff-member to ask

7.5 How will this information be used by participants?

When asked whether they thought the information acquired might be useful to them in the future, the interviewees gave the responses in the Table below. The categories of potential use are taken from showcards (see Appendices) used with most of the interviewees to prompt discussion. The research category was not on the showcard but was identified by one interviewee. 'Improved quality of life for patient and/or family' was the most frequently-cited category but this may be because it is somewhat nebulous since improved quality of life for patients is the ultimate aim of many different activities performed by health professionals.

<table>
<thead>
<tr>
<th>Potential use</th>
<th>Number of times mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved quality of life for patient and/or family</td>
<td>9</td>
</tr>
<tr>
<td>Audit or standards of care</td>
<td>7</td>
</tr>
<tr>
<td>Initial assessment of patient</td>
<td>6</td>
</tr>
<tr>
<td>Evaluation of outcomes</td>
<td>6</td>
</tr>
<tr>
<td>Legal or ethical issues</td>
<td>6</td>
</tr>
<tr>
<td>Monitoring of care</td>
<td>5</td>
</tr>
<tr>
<td>Interpersonal relations with colleagues</td>
<td>5</td>
</tr>
<tr>
<td>Interpersonal relations with clients/patients</td>
<td>3</td>
</tr>
<tr>
<td>Care administration</td>
<td>2</td>
</tr>
<tr>
<td>Practical nursing techniques</td>
<td>2</td>
</tr>
<tr>
<td>Revision of treatment plan</td>
<td>2</td>
</tr>
<tr>
<td>Choice of diagnostic test</td>
<td>1</td>
</tr>
<tr>
<td>Recognition of condition</td>
<td>1</td>
</tr>
<tr>
<td>Confirmation of proposed therapy</td>
<td>1</td>
</tr>
<tr>
<td>Identification/evaluation of alternative therapies</td>
<td>1</td>
</tr>
<tr>
<td>Minimisation of risks of treatment</td>
<td>1</td>
</tr>
<tr>
<td>Research</td>
<td>1</td>
</tr>
</tbody>
</table>
8 Conclusions

The aim of the VIVOS evaluation at the Leicester site was to use qualitative research techniques to investigate how users of NISS Biomed perceive the service and to look for indicators of how the service could be developed to meet the changing needs of existing and potential users. The survey was conducted in the form of interviews and a postal questionnaire with a random sample of NHS staff from Leicester Royal Infirmary (who had registered for Athens passwords) and academic/research staff from The University of Leicester. The sample was stratified to ensure that a range of job-types was included in the survey. To extend the evaluation, a health economist, based at ScHARR, the School of Health and Related Research in Sheffield, was commissioned to produce a cost–benefit analysis using data collected by the Aberystwyth research team.

There was evidence of the widespread motivation and acceptance of a role for electronic information resources amongst the interviewees at Leicester Royal Infirmary. This was perhaps to have been expected since the interviewees had been (randomly) selected from lists of practitioners who had registered to use the NISS Biomed service. In spite of this, many found that their opportunities to convert motivation into practice were limited by time, skills and logistical barriers. Services such as NISS Biomed are being developed with a view to overcoming some of these barriers by facilitating ease of access from a variety of locations and outside working hours and those survey participants (both interviewees and questionnaire-respondents) who had made use of the service were impressed by its ready accessibility which has resulted in substantial time-saving. When asked about potential enhancements to the NISS Biomed service, the overwhelming response was for an increase in the availability of online full-text journals in PDF format. Users have identified full-text as a key feature of the services and one which, if expanded, could result in greater time-savings still.

The cost–benefit analysis (see Part 2) was necessarily limited in scope due to the small survey sample, the contracted timescale (since it was part of the larger VIVOS project), the low response-rate, and to the fact that the questions dedicated to the cost–benefit analysis formed just part of a larger questionnaire. The health economist therefore focussed his study on establishing the cost-impact of use of the NISS Biomed service in terms of staff time. To achieve this he compared the whole amount of time spent on NISS Biomed-related activities (including searching, travelling, retrieving and reading the information) with the time that would have been spent on these activities if respondents had used alternative sources of information. His conclusions, though constrained by the limited scope of the analysis, indicate that there is a cost-saving in terms of staff time. This has implications for providers and funders of the service since savings in staff time can be related, somewhat simplistically, to return on investment (King Research, 1984).

However, although all of those surveyed were entitled to access the service, either through the University network or through having registered with the Clinical Sciences Library, not all did. Data from both types of survey show that there is a willingness to incorporate electronic resources into information-seeking routines however some participants were not using NISS Biomed to build on these foundations. In some cases participants simply had a preferred alternative source of information (e.g. PubMed) but in other cases the reasons given focussed on lack of time, of need, of familiarity with the service and of IT-skills to use it competently.

Information needs vary depending from individual depending on job-type and on issues such as involvement in research or education commitments. The current trends towards standardisation of care, increased teamwork and patient-involvement in decision-making, all within an Evidence-Based context, impact on all health professionals and generate information needs. The issue of lack of time is related to participants’ perceptions of their need to negotiate time, either in relation to their personal priorities or to those imposed by line managers. Since there is obvious scope for an experienced user
of NISS Biomed to save time it is possible that a period of personal investment of time and energy spent learning the service could reap benefits in the future.

To assist existing users, attract new ones and nurture the inexperienced as they gain skills and confidence, a comprehensive and timely information-support service is required. Questionnaire respondents were very positive about the levels of information-support available in Leicester, and the interviewees expanded on this with appreciative comments about the helpfulness of librarians at the Clinical Sciences Library. One interviewee was so impressed with her experience of using the library facilities that she approached her manager in the hope of encouraging colleagues to attend library-run training sessions.

If users spread the message and librarians continue to promote their services, for example through visits to clinical and allied-health team-meetings or by postings on noticeboards as suggested by one interviewee, there is opportunity for awareness of a coordinated package of library services (such as NISS Biomed) and associated training and ongoing support to grow.
References to Part 1
Part 2: VIVOS Cost Analysis (prepared by ScHARR)

1. Introduction

The VIVOS project is an attempt to evaluate the impact of providing electronic access to journals in full-text format for NHS staff as an alternative to usual library facilities. It is anticipated that electronic provision in this way will be a more efficient method for NHS staff to find information and that, ultimately, clinical practice will be improved.

The purpose of this section is to provide an indication of the likely cost implications of providing the service. It is a pilot study that addresses one element that would be required for an economic evaluation to be undertaken. No consideration of outcomes are made in this report for a number of reasons. To identify the impact on patient outcomes of providing the NISS Biomed service would be extremely difficult. At the least it would require a large number of participants and a level of randomisation not feasible within the scope of this study. Even if suitable intermediate outcomes measuring the degree of change in clinical practice could be identified study design would be extremely complex. The likelihood is that such a study would have to restrict itself to a particular category of staff within a tightly defined clinical area. This would constitute a very small sub sample of the total number of users of the service. However, the study presented here is useful as a means of informing design of potential future studies of cost-effectiveness.

Users of the NISS Biomed system fall into two categories. Firstly, there are those users who substitute, in whole or in part, usual use of the library for the new electronic system. Users in this group may spend the same amount of time in finding information but their use of NISS Biomed means that the output from this time is greater. They find the information they require more quickly. It is also possible that because the system is more efficient individuals in this group spend a lesser amount of time engaged in searching, retrieving and reading activities. It is also possible that the system identifies a greater amount of relevant information and/or greater ease of access to information may encourage a greater amount of time to be spent in these activities.

A second group of users of the service are new users. This group consists of those who previously would not have used the alternative library facilities to find information and have been attracted by the relative ease of use the system provides.
These distinctions are made at this stage because they are crucial in identifying the potential opportunity costs of the electronic system and for highlighting the fact that the system may either be cost saving or cost generating depending on the balance between the different types of users.

The next section describes the methods used to collect the data on resource use and the unit cost information employed. Section three presents the results and section four concludes.
2. Methods

A total of 175 postal surveys were sent out (see Section 2.1 of main report for details of sampling method). Of these 39 were returned and were included in the analysis giving a response rate of 22%. A number of methods could improve this rate and would be employed in a full study including reminder letters and restructuring of the survey instrument.

The concern of the survey was to establish the extent to which individual had used the NISS Biomed system and activities which resulted from the use of the system. This allowed the identification of time spent on searching, retrieving and reading articles. Additionally, respondents were asked to think about their information retrieval activities in the absence of the electronic system so that opportunity costs could be identified.

Finally, respondents were asked to indicate their job title and grade so that appropriate unit cost information could be applied.
3. Results

i) Occupations

In order to identify appropriate unit costs to apply to the resource use in terms of staff time occupations and grades were questioned. Table 1 shows the job titles given by respondents. These span a range of occupations within the NHS including positions involving research, administration and direct patient care.

Respondents were also asked to indicate their grade where appropriate. Table 2 shows information relating to this question. Of the four nurses who responded the modal grade was grade E and this was used in the calculation of unit costs. The majority of academic staff and PAMs classed themselves as senior whereas more of the clinicians were of junior, training grade.

Unit costs were calculated using a range of publications and values used are shown in table 3. Occupations which involved direct contact with patients were costed using Netten and Curtis (2000) which reports costs at 1999/2000 prices. In each case the value used was for an hour of staff time, including training and overhead costs, not an hour of patient contact time. This was considered most the most appropriate measure.

The senior clinician role was assumed equal to medical consultant. This differs only slightly from the equivalent surgical and psychiatric consultant costs and was considered the most appropriate. Training grade clinicians cost £17 per hour on duty.

The value for nurses was taken directly from the staff nurse on a day ward valuation which is calculated on the mid-point of the salary for grade E nurses. PAMS cover a range of possible occupations including physiotherapy, occupational therapy, speech and language therapy and chiropody. Since most respondents classed themselves as senior the value for physiotherapists was used. The only PAM valued higher than this is that for clinical psychologists. “Manager” was costed as a ward manager.

Values for researchers were calculated using standard academic salary scales. Those identified as “research staff” were junior and valued at the mid-point of scale 1. The research/practitioner title was considered equal to the mid-point of scale 2. Those who called themselves academic staff were predominantly senior and classed at the mid-point of scale 3. Salary on costs and overheads were included. Educational costs were more difficult to estimate. It was decided to use information from comparable vocations from Netten and Cutis for this and information on expected numbers of hour work, absences, etc. Educational costs were estimated at £5000 per annum.

ii) Frequency and duration of use of NISS Biomed
Respondents were asked to indicate the frequency with which they used the NISS Biomed system either on a weekly, monthly or annual basis. Respondents were also asked to indicate the number of times they had used the system since registering. Where only the latter information was given it was assumed that registration had taken place six months earlier. From these responses individual annual use rates were calculated. This is shown in table 5.

There is a huge range in the data. Several respondents reported using the system several times per day. The mean annual usage was over 100. A number of descriptive statistics are included to describe the distribution of the data which would be useful for those planning a full economic analysis which made use of this type of cost. For example, the skewness statistic of 2.9 indicates that the data is significantly positively skewed and therefore normal statistical tests must be used cautiously.

Table six indicates the duration of sessions and the associated activities of retrieving articles and reading. The equivalent total annual time has also been calculated. Values show that the mean duration of a NISS Biomed session is 45 minutes and is relatively normally distributed (0.817 skew). The mean respondent is involved in each of the three activities for 90 hours per annum.

iii) Cost of NISS Biomed time

Table 7 shows the results of combining information on annual duration with unit costs. The mean annual cost for each respondent is £2808 which, when totalled across all respondents sums to almost £110,000. The median respondent cost is lower at £1819.

iv) Time saved by NISS Biomed

An important element of staff costs from the system is the potential savings compared to alternative arrangements if the system had not been available. To identify the extent of these savings respondents were asked to indicate how much time they thought had saved as a result of the availability of the system or if they thought they had actually spent more time. This question received a lower usable response rate than previous questions. Non response, or inappropriate response, was treated as a zero observation. Mean imputation was used for respondents who chose “don’t know” or “unquantifiable” responses. The results of this analysis are shown in table 8. The mean time saving from the availability of the system was estimated at 7.35 hours per session although this is significantly and positively skewed (4.116). The median time saving was estimated at 2.5 hours per session.

v) Cost Saving of NISS Biomed.
In order to calculate the net costs of the system, time savings per session were multiplied by the estimated number of visits per year for each respondent. This figure was then costed by multiplying by unit costs per hour. The results of this are shown in Table 9.

The skewed nature of the data is clearly evident in these results. Whilst the mean saving associated with using the NISS Biomed system is in excess of £26,000 this is relatively high due to the small number of respondents for who there are very large cost savings. The median value is therefore much lower at £990. 95% confidence intervals may not be reliable. However, it should be noted that for the purposes of economic evaluation it is the mean value that is of importance.

vi) Net Costs.
The net costs of the scheme in terms of impact on staff time is calculated by valuing the time spent on all activities associated with using the NISS Biomed system, including searching, travelling, retrieving and reading information, less the time that would have been spent on such activities in the absence of the system. Table 10 shows these results.

The mean net cost saving is in excess of £23,000 which, when summed across the 39 respondents equates to a value of staff time saved of £920,000. The 95% confidence intervals are wide and indicate a range of £40,000 - £600,000 savings. It is interesting to note that these intervals remain within the cost saving boundary, although as previously mentioned skewness in the data diminishes the reliability of these figures. Alternative bootstrap techniques could be used to address this possibility in a full study. The median value is much more conservative at £400 savings, reflecting the skewness. To further emphasise the extent of this effect figure 1 shows the distribution of net costs. The figure shows that most observations are clustered around the zero figure (cost neutral) and that the reason for such large potential cost savings based on mean results arises from a few extreme cases. In fact 17/39 (44%) of observations are positive (cost generating).

4. Conclusions
This study reports part of a pilot project to establish the potential cost impact in terms of staff time by introducing an electronic journal system for NHS staff. The aims are therefore limited to a partial cost analysis but it is envisaged that the results and methods used could inform any attempt to do a more detailed economic analysis.

Results based on mean figures indicate that the scheme is cost saving but that this is influenced by extremely skewed data. Response rates were small and a full study would require both larger numbers of respondents and better response rates. This could be helped by changing certain elements of the survey instrument.

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Another potential bias arises from the self-selection of respondents. It is feasible that respondents are the most regular users or most enthusiastic users of the service and therefore the cost savings are high. The mean use figure of 102 times per annum appears high but it would be useful to check the representativeness of this against mean uses for a different and larger sample.

No sensitivity analysis has been undertaken here as this is only an exploratory study. Confidence intervals have however been presented. Again, a full study would be required to investigate the reliability of these CIs and present a sensitivity analysis.

The results provided here could be combined with information relating to other costs of the scheme, such as the costs of providing the scheme, library staff time from dealing with the administration and training issues associated with NISS Biomed, likely reductions in photocopying and travel expenses, to estimate the broader cost implications.
References

## Tables for VIVOS report

### Table 1: Sample Occupations

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Senior clinician</td>
<td>2</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Training grade clinician</td>
<td>3</td>
<td>7.7</td>
<td>12.8</td>
</tr>
<tr>
<td>Nursing auxiliary</td>
<td>1</td>
<td>2.6</td>
<td>15.4</td>
</tr>
<tr>
<td>Nurse</td>
<td>7</td>
<td>17.9</td>
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</tr>
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<td>Research / practitioner</td>
<td>5</td>
<td>12.8</td>
<td>46.2</td>
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<td>3</td>
<td>7.7</td>
<td>53.8</td>
</tr>
<tr>
<td>Teaching / practitioner</td>
<td>1</td>
<td>2.6</td>
<td>56.4</td>
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<tr>
<td>Academic staff</td>
<td>11</td>
<td>28.2</td>
<td>84.6</td>
</tr>
<tr>
<td>Professions allied to medicine</td>
<td>4</td>
<td>10.3</td>
<td>94.9</td>
</tr>
<tr>
<td>Management</td>
<td>2</td>
<td>5.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100.0</td>
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</tr>
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</table>

### Table 2: Occupation by Grade

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Senior</th>
<th>Junior</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>G</th>
<th>H</th>
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<tbody>
<tr>
<td>Senior clinician</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Training grade clinician</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing auxiliary</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td></td>
<td>1</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research / practitioner</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Research staff</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching / practitioner</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic staff</td>
<td>8</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Professions allied to medicine</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
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</table>
Table 3: Unit costs

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Unit costs per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior clinician</td>
<td>82</td>
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<tr>
<td>Training grade clinician</td>
<td>17</td>
</tr>
<tr>
<td>Nursing auxiliary</td>
<td>11</td>
</tr>
<tr>
<td>Nurse</td>
<td>17</td>
</tr>
<tr>
<td>Research / practitioner</td>
<td>31</td>
</tr>
<tr>
<td>Research staff</td>
<td>27</td>
</tr>
<tr>
<td>Teaching / practitioner</td>
<td>37</td>
</tr>
<tr>
<td>Academic staff</td>
<td>37</td>
</tr>
<tr>
<td>Professions allied to medicine</td>
<td>24</td>
</tr>
<tr>
<td>Management</td>
<td>22</td>
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</tbody>
</table>

Table 4: Calculation of researcher costs

<table>
<thead>
<tr>
<th>Scale</th>
<th>Salary on costs</th>
<th>Overheads</th>
<th>Training</th>
<th>Annual total</th>
<th>Hours per yr</th>
<th>Equivalent hourly</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>24227</td>
<td>30768.29</td>
<td>40459.09</td>
<td>45459.09</td>
<td>1695</td>
<td>26.81952</td>
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<tr>
<td>16</td>
<td>28275</td>
<td>35909.25</td>
<td>47219.25</td>
<td>52219.25</td>
<td>1695</td>
<td>30.80782</td>
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<tr>
<td>22</td>
<td>34601</td>
<td>43943.27</td>
<td>57783.67</td>
<td>62783.67</td>
<td>1695</td>
<td>37.04051</td>
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</table>

Table 5: Annual frequency of use of system

<table>
<thead>
<tr>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual frequency of use</td>
<td>39</td>
<td>780.00</td>
<td>0.00</td>
<td>780.00</td>
<td>102.4872</td>
<td>204.4947</td>
<td>2.991</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 6: Duration of sessions

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated time spent searching (per session in minutes)</td>
<td>39</td>
<td>0</td>
<td>120</td>
<td>46.41</td>
<td>32.73</td>
<td>.817</td>
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<tr>
<td>Time spent retrieving articles (per annum in minutes)</td>
<td>39</td>
<td>30</td>
<td>6240</td>
<td>1445.26</td>
<td>1641.84</td>
<td>1.556</td>
</tr>
<tr>
<td>Time spent reading retrieved articles (per annum in minutes)</td>
<td>39</td>
<td>0</td>
<td>6240</td>
<td>1440.67</td>
<td>1707.97</td>
<td>1.684</td>
</tr>
<tr>
<td>Total number of hours per year</td>
<td>39</td>
<td>.50</td>
<td>311.20</td>
<td>90.7355</td>
<td>82.6589</td>
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<td>Valid N (listwise)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>39</td>
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</table>

### Table 7: Cost of all NISS activity

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Statistic</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2808.5286</td>
<td>455.1031</td>
</tr>
<tr>
<td>95% Confidence Interval for Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Bound</td>
<td>1887.2206</td>
<td></td>
</tr>
<tr>
<td>Upper Bound</td>
<td>3729.8366</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>1819.1667</td>
<td></td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>2842.1177</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>18.50</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>10323.00</td>
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<tr>
<td>Range</td>
<td>10304.50</td>
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</tr>
<tr>
<td>Interquartile Range</td>
<td>3747.1667</td>
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</tr>
<tr>
<td>Skewness</td>
<td>1.215</td>
<td>.378</td>
</tr>
<tr>
<td>Sum</td>
<td>109532.62</td>
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</table>
Table 8: Estimated time saved by NISS Biomed per session in hours

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Mean</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time costs using NISS</td>
<td>7.3500</td>
<td>2.5196</td>
</tr>
<tr>
<td>95% Confidence Interval for Mean</td>
<td>Lower</td>
<td>2.2494</td>
</tr>
<tr>
<td>Mean</td>
<td>Upper</td>
<td>12.4506</td>
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<tr>
<td>5% Trimmed Mean</td>
<td>4.4687</td>
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</tr>
<tr>
<td>Median</td>
<td>2.5000</td>
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<tr>
<td>Std. Deviation</td>
<td>15.7347</td>
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</tr>
<tr>
<td>Minimum</td>
<td>.00</td>
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<tr>
<td>Maximum</td>
<td>88.00</td>
<td></td>
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<tr>
<td>Range</td>
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</tr>
<tr>
<td>Interquartile Range</td>
<td>7.3500</td>
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<tr>
<td>Skewness</td>
<td>4.116</td>
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</table>

Table 9: Cost Savings

<table>
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<tr>
<th>Statistic</th>
<th>Mean</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings from NISS use</td>
<td>26413.02568820.2830</td>
<td></td>
</tr>
<tr>
<td>95% Confidence Interval for Mean</td>
<td>Lower 8557.2962</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>Bound 44268.7551</td>
<td></td>
</tr>
<tr>
<td>5% Trimmed Mean</td>
<td>18227.2507</td>
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</tr>
<tr>
<td>Median</td>
<td>990.0000</td>
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</tr>
<tr>
<td>Std. Deviation</td>
<td>55082.6498</td>
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</tr>
<tr>
<td>Minimum</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>212121.0</td>
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<td>Range</td>
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<tr>
<td>Interquartile Range</td>
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<tr>
<td>Skewness</td>
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<tr>
<td>Sum</td>
<td>1030108.00</td>
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</table>
## Table 10: Net Costs

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<tr>
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<th>Statistic</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net costs of</td>
<td>Mean</td>
<td>-23604.49708495.3083</td>
</tr>
<tr>
<td>scheme(cost-saved costs)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>95% Confidence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower Bound</td>
<td>-40802.3495</td>
</tr>
<tr>
<td></td>
<td>Upper Bound</td>
<td>-6406.6445</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5% Trimmed Mean</td>
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<td></td>
</tr>
<tr>
<td>Median</td>
<td>-399.5000</td>
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</tr>
<tr>
<td>Std. Deviation</td>
<td>53053.1833</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
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<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>5270.00</td>
<td></td>
</tr>
<tr>
<td>Range</td>
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<td></td>
</tr>
<tr>
<td>Interquartile Range</td>
<td>13002.2333</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
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<td>.378</td>
</tr>
<tr>
<td>Sum</td>
<td>-920575</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Distribution of net costs
Appendix 1: List of electronic journals available through NISS Biomed at start of the FUTURES project and of databases available at the time of the VIVOS survey

Core collection (1993 to date)
American Journal of Obstetrics and Gynecology
American Journal of Surgery
Annals of Internal Medicine
Archives of General Psychiatry
British Medical Journal
Canadian Medical Association Journal
Circulation
JAMA: Journal of the American Medical Association
Journal of Bone & Joint Surgery (US)
Journal of Clinical Investigation
The Lancet
New England Journal of Medicine
Pediatrics
Science

Biomedical Collection II (1995 to date)
American Journal of Cardiology
American Journal of Psychiatry
Archives of Internal Medicine
Archives of Neurology
Archives of Surgery
Arteriosclerosis, Thrombosis & Vascular Biology
British Journal of Surgery
Circulation Research
Fertility and Sterility
Gut
Journal of Pediatrics
Mayo Clinic Proceedings
Medicine
Quarterly Journal of Medicine
Thorax

Biomedical Collection IV (1995 to date)
American Journal of Health-System Pharmacy
Anesthesia & Analgesia
Annals of Rheumatic Diseases
Archives of Diseases in Childhood
Archives of Otolaryngology
Archives of Pediatrics & Adolescent Medicine
Critical Care Medicine
Diabetes Care
Genitourinary Medicine
Journal of the American Board of Family Practice
Journal of Bone and Joint Surgery
Journal of Medical Genetics
Journal of Trauma
Occupational and Environmental Medicine

Databases
Medline
CINAHL
Evidence-Based Medicine Reviews
Appendix 2: Details of numbers and job categories of survey participants

<table>
<thead>
<tr>
<th>Interviewee job role</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>11</td>
</tr>
<tr>
<td>PAM (includes Physiotherapists, Occupational therapists, Sonographers and some Scientific/technical staff)</td>
<td>11</td>
</tr>
<tr>
<td>Senior Clinical Practitioner</td>
<td>4</td>
</tr>
<tr>
<td>Clinical Practitioner</td>
<td>3</td>
</tr>
<tr>
<td>Training-Grade Clinician</td>
<td>2</td>
</tr>
<tr>
<td>Midwife</td>
<td>2</td>
</tr>
<tr>
<td>Hospital-Based Management</td>
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</tr>
<tr>
<td>Research Management</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category of intended questionnaire-recipient</th>
<th>Number of questionnaires despatched</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS staff</td>
<td>80</td>
</tr>
<tr>
<td>University staff: research</td>
<td>25</td>
</tr>
<tr>
<td>University staff: clinical research</td>
<td>8</td>
</tr>
<tr>
<td>University staff: academic</td>
<td>62</td>
</tr>
</tbody>
</table>
Appendix 3: Interview schedule

INTERVIEW SCHEDULE LEICESTER

1. Check details [name, job title]

2. Do you use the NISS BIOMED service? [National Information Service and System]

3. (A) If yes, what have you used it for? [e.g. type of search conducted/type of information required. Go to Question 4]

(B) If no, why haven’t you used it? [PROBE, what do they use instead? Go to Question 10]

4. When answering these questions please give your best estimates – we appreciate that it can be difficult to recall the exact amount of time you spend on tasks.

A. Your use of NISS Biomed may have been sporadic but, in general, how often do you access the service? E.g.:
   .... Times a day
   .... Days per week
   .... Days per month
   .... Days per year
   .... Times since registering for the service

B. When you use the service can you estimate how much time you spend on the searching process?

C. In the past year (or since registering), how much time have you spent retrieving articles as a result of searches?

D. How much time have you spent reading the articles you have found?

Please think back to the last time you used NISS Biomed:

E. On this occasion, what would you have done if NISS Biomed was not available?
   [ ] Nothing
   [ ] Searched in the library
   [ ] Searched other databases
   [ ] Asked colleagues
   [ ] Other..............................................................................................

F. How much time do you think you saved/spent extra as a result of using NISS Biomed on this occasion (please consider time spent searching, travelling to the library, retrieving and reading articles)
G. Would you mind telling me your job grade please?

5. Has using NISS Biomed had any impact on your clinical decisions or actions?

6. Are there any features of NISS Biomed that you have found useful?

7. Where do you access the service from [e.g. home/work – in own time]?

8. Have you received any training on the use of NISS Biomed? (time spent?)

9. Are there any enhancements you would like to see? [Go to question 11]

10. **Critical Incident**

   Please think back to an occasion when you needed to find information that you personally did not have. The need may have been for research purposes, related to patient care, teaching or for post-registration/continuing personal education/audit, etc. and the occasion need not necessarily have involved using a computer.

   (A) What were you looking for?

   (B) and why?

   (C) What were you expecting to find?

   (D) Where did you look?

   (E) Did you need to ask anyone else?

   (F) Was there any particular reason you chose to look there or contact this group/person?
(G) What did you find?

(H) Were you satisfied with what you found?

[PROBE – if at all possible try to obtain an answer to the following]
(I) How might that information be useful to you in the future?
[PROBE – are you likely to use it for any of these activities? SHOWCARD]

11. What are your feelings about the current level of information support?

12. What are your opinions on patients'/clients' access to sources such as Cochrane?

13. Are you aware of patients' use of the Internet to obtain information?

[THANK THEM FOR THEIR TIME]
Appendix 4: Questionnaire

Questionnaire on your information-seeking behaviour and use of 24-hour access NISS Biomed

If you have used the NISS Biomed service since registering for it please complete Section 1 of the questionnaire (on the blue sheet).

If you have not yet used the NISS Biomed service please complete Section 2 (on the green sheet).

Please answer the questions by placing an "X" between the "[]" or by writing an answer.

When you have completed your questionnaire, please return it in the Freepost envelope provided.
SECTION 1

When answering the following questions please give your best estimates – we appreciate that it can be difficult to recall the exact amount of time you spend on tasks.

1. Your use of NISS Biomed may have been sporadic but, in general, how often do you access the service?
   .... Times a day
   .... Days per week
   .... Days per month
   .... Days per year
   .... Times since registering for the service
   Other: ............................................

2. When you use the service can you estimate how much time you spend on the searching process?
   ........................................................................................................

3. In the past year (or since registering), how much time have you spent retrieving articles as a result of searches?
   ........................................................................................................

4. How much time have you spent reading the articles you have found?
   ........................................................................................................

Please think back to the last time you used NISS Biomed:

5. On this occasion, what would you have done had NISS Biomed not been available?
   [ ] Nothing
   [ ] Searched in the library
   [ ] Searched other databases
   [ ] Asked colleagues
   [ ] Other.................................................................

6. How much time do you think you saved/spent extra as a result of using NISS Biomed on this occasion (please consider time spent searching, travelling to the library, retrieving and reading articles)
   ........................................................................................................

7. If you found information on this occasion, what did you use it for?
   ........................................................................................................

8. Would you mind telling us your job title/grade please?
   ........................................................................................................

9. Please indicate which features of the NISS Biomed service you make use of:
   (please tick all categories that apply)
   Access outside working hours [ ] 1
   Access outside workplace (e.g. from home) [ ] 2
   Medline and/or other searchable databases [ ] 3
   Full text journals [ ] 4
   Links between Medline search citations the relevant full-text documents [ ] 5
   CINAHL [ ] 6
   Evidence Based Medicine Review [ ] 7
10. Where do you usually access the service from?  
(please tick all categories that apply)  
Clinical Sciences Library [ ] 8  
Hospital Department [ ] 9  
Home [ ] 10  
Other [ ] 11  

Comments ……………………………………………………………………

11. Do you feel the help sheet you received on registering for the service was adequate?  
Yes [ ] 12  
No [ ] 13  

Comments ……………………………………………………………………

12. Do you feel that adequate training is available?  
Yes [ ] 14  
No [ ] 15  

Comments ……………………………………………………………………

13. Do you feel that help-desk support either by phone or in person is adequate?  
Yes [ ] 16  
No [ ] 17  

Comments ……………………………………………………………………

14. What are the major benefits to you of the service?  
…………………………………………………………………………………..  
…………………………………………………………………………………..  
…………………………………………………………………………………..  

15. What enhancements would you like to see?  
…………………………………………………………………………………..  
…………………………………………………………………………………..  

16. Please add any other comments you would like to make about the service  
…………………………………………………………………………………..  

Thank you very much for your completing the questionnaire. All information given will be treated confidentially; no individuals will be identified in the results.
SECTION 2

Please think back to a specific occasion during the last week or so when you needed to find information that you personally did not have. The need may have been for research purposes, related to patient care, teaching or for post-registration/continuing personal education... and you may not necessarily have used a computer to find the information.

17. On this occasion I needed the information for:
(please tick ALL categories that apply)
- Patient care – administration/management (e.g. records, rotas) [ ] 18
- Patient care – specific drug or therapy [ ] 19
- Patient care – rare condition or specific problem [ ] 20
- Patient care – audit/standards/guidelines [ ] 21
- Patient care – patient education/advice/counselling [ ] 22
- Teaching – staff/student/colleagues (e.g. mentoring) [ ] 23
- CPD – updating knowledge [ ] 24
- Personal – own interests [ ] 25
- Learning – coursework, assessment requirements [ ] 26
- Research – e.g. for funded project, research degree [ ] 27
- Other [ ] 29

Comments………………………………………………………………………………

18. On this occasion I used the following resources:
(please tick ALL categories that apply)
- Department/ward collection (e.g. reference book) [ ] 30
- Patient information centre or helpline [ ] 31
- Personal collection (books, journals, etc.) [ ] 32
- Colleague [ ] 33
- Visit to local health library (e.g. Clinical Sciences Library) [ ] 34
- National library service (e.g. BMA) [ ] 35
- Drug information service/hospital pharmacy [ ] 36
- Internet (e.g. using a search engine such as Yahoo, AltaVista) [ ] 37
- Computer-based resource other than NISS Biomed [ ] 38
- Other [ ] 39

Comments………………………………………………………………………………

19. On this occasion I was
Successful in obtaining all the information I needed [ ] 40
Partly successful (e.g. information incomplete, ran out of time) [ ] 41
Unsuccessful [ ] 42

20. Was this a normal or usual kind of search for you?
Yes [ ] 43
No [ ] 44

21. Do you have particular reasons for not using the NISS Biomed service?
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................

22. Do you feel that adequate training for information-seeking skills is available?
Yes [ ] 45
No [ ] 46
23. Do you feel that help-desk support either by phone or in person is adequate?
Yes          [   ]47
No            [   ]48

Comments ……………………………………………………………………...

Thank you very much for your completing the questionnaire. All information given will be treated confidentially; no individuals will be identified in the results.
Appendix 5: Email questionnaire for medical students

Questionnaire on your use of 24-hour access NISS Biomed.

Firstly, please think back to a specific occasion when you needed to find information that you personally did not have. The need may have been for any reason – e.g. coursework, research purposes, related to patient care, personal interest... and you may not necessarily have used a computer to find the information.

Please answer the following questions by placing an "X" between the "[]" or by typing an answer:

1. On this occasion I needed the information for:
   (please tick ALL categories that apply)
   - Learning – coursework, assessment requirements [ ] 1
   - Preparing a presentation [ ] 2
   - Patient care – administration/management (e.g. records, rotas) [ ] 3
   - Patient care – specific drug or therapy [ ] 4
   - Patient care – rare condition or specific problem [ ] 5
   - Patient care – audit/standards/guidelines [ ] 6
   - Patient care – patient education/advice/counselling [ ] 7
   - Updating knowledge [ ] 8
   - Personal – own interests [ ] 9
   - Research – e.g. for funded project [ ] 10
   - Other [ ] 11
   - Comments………………………………………………………………………

2. On this occasion I used the following resources:
   (please tick ALL categories that apply)
   - Department/ward collection  (e.g. reference book) [ ] 12
   - Patient information centre or helpline [ ] 13
   - Personal collection (books, journals, etc.) [ ] 14
   - Colleague/lecturer [ ] 15
   - Visit to local health library (e.g. Clinical Sciences Library) [ ] 16
   - Visit to University library [ ] 17
   - National library service (e.g. BMA) [ ] 18
   - Drug information service/hospital pharmacy [ ] 19
   - Internet (e.g. using a search engine such as Yahoo, AltaVista) [ ] 20
   - Computer-based resource not available on NISS Biomed [ ] 21
   - Niss Biomed [ ] 22
     If possible, indicate which parts of the service: databases [ ] 23
     electronic journals [ ] 24
   - Other [ ] 25
   - Comments………………………………………………………………………

260
3. On this occasion I was
Successful in obtaining all the information I needed [ ] 26
Partly successful (e.g. information incomplete, ran out of time) [ ] 27
Unsuccessful [ ] 28

4. Was this a normal or usual kind of search for you?
Yes [ ] 29
No [ ] 30

The following questions cover your use of NISS Biomed

5. Please indicate which features of the service you make use of:
(please tick all categories that apply)
Access outside working hours [ ] 31
Access outside workplace/college (e.g. from home) [ ] 32
Medline and/or other searchable databases [ ] 33
Full text journals [ ] 34
Links between Medline search citations the relevant full-text documents [ ] 35
Cochrane [ ] 36
Best Evidence [ ] 37

6. Where do you usually access the service from?
(please tick all categories that apply)
Clinical Sciences Library [ ] 38
University library [ ] 39
University Department [ ] 40
Hospital Department [ ] 41
Home [ ] 42
Other [ ] 43
Comments ………………………………………………………………………

7. Do you feel the help sheet you received on registering for the service was adequate?
Yes [ ] 44
No [ ] 45

Comments ………………………………………………………………………

8. Do you feel that adequate training is available?
Yes [ ] 46
No [ ] 47

Comments ………………………………………………………………………

9. Do you feel that help-desk support either by phone or in person is adequate?
Yes [ ] 48
No [ ] 49

Comments ………………………………………………………………………

10. What are the major benefits to you of the service?
……………………………………………………………………………………
……………………………………………………………………………………
……………………………………………………………………………………
11. What enhancements would you like to see?

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

12. Please add any other comments you would like to make about the service

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

Thank you very much for your completing the questionnaire. All information given will be treated confidentially; no individuals will be identified in the results.

«year»/«number»
Appendix 6: Showcards of categories of potential use of information for Critical Incident

SHOWCARD: HOW MIGHT INFORMATION BE USED IN FUTURE (CLINICIANS)

- Choice of diagnostic test
- Recognition of an abnormal or normal condition
- Differential diagnosis
- Confirmation of proposed therapy
- Identification/evaluation of alternative therapies
- Minimisation of risks of treatment
- Revision of treatment plan
- Audit or standards of care
- Improved quality of life for patient and/or family
- Legal or ethical issues

SHOWCARD: HOW MIGHT INFORMATION BE USED IN FUTURE (NURSES AND ALLIED HEALTH STAFF)

- Initial assessment of patient
- Monitoring of care
- Evaluation of outcomes
- Care administration (e.g. planning rotas)
- Practical nursing techniques (e.g. lifting/IV lines)
- Interpersonal relations with colleagues
- Interpersonal relations with clients/patients
- Audit or standards of care
- Improved quality of life for patient and/or family
- Legal or ethical issues
Preliminary Report for South Humber Site

Value and Impact of Virtual Outreach Services (VIVOS) Project

March 2001
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Abstract

The 'evidence matters!' bulletin disseminating information on topical issues in clinical effectiveness and evidence-based practice for primary- and community-care practitioners is one of six projects investigated by the Value and Impact of Virtual Outreach Services (VIVOS) project. Usage of Cumulative Index to Nursing and Allied Health Literature (CINAHL), the nursing bibliographic database was also evaluated at the South Humber site. The aim of the VIVOS research is to evaluate existing health information outreach projects. It will use the findings and the cumulative experience of information professionals at the research sites to inform project management guidelines for the successful implementation and application of future programmes. A range of research methods was adopted with a view to identifying those that are most appropriate to evaluations of this nature.

A triangulation of methods was achieved through semi-structured interviews which incorporated the Critical Incident Technique (e.g. Abad-Garcia et al., 1999; Chell, 1998). Community-based health professionals from the area were surveyed. Qualitative data methodology was the preferred approach because in-depth analysis was required and data handling was facilitated by the use of the NUD*IST 4 software program. The structure of the report parallels the themes drawn out during data analysis.

Findings indicated motivation for the adoption of electronic resources and for improving IT-skills. However turning the motivation into practice is inhibited by factors including lack of time, lack of skills and, importantly, lack of equality of access to IT facilities. This may account for the small number of subscribers to the CINAHL database Some groups of staff and some practices have better facilities than others and it is possible that as access to facilities increases an associated programme of training and awareness-raising could improve the subscription rates and levels of use.

Motivation for IT is paralleled by enthusiasm for Evidence-Based practice and clinical effectiveness, and recipients of 'evidence matters!' see it as a useful component of their toolkit. The survey identified six ways in which the bulletins promote Evidence-Based practice and facilitate the communication between teams and across disciplines so important in the moves towards standardised care.

Acknowledgements

The VIVOS research team is grateful to all the South Humber staff who participated in the evaluations of the bulletin 'evidence matters!' and CINAHL. Without their participation in the survey work there would be no evaluation. The team is indebted to Re:source for funding the VIVOS project.
Abbreviations

CINAHL  Cumulative Index to Nursing and Allied Health Literature
CBM    Community-Based-Management
CD-ROM  Compact Disc Read Only Memory
CN     Community Nurse
CP     Clinical Practitioner
GP     General Practitioner
HRR    Health-Related Researcher
HV     Health Visitor
IT     Information Technology
NHS    National Health Service
PAM    Professions Allied to Medicine
PC     Personal Computer
VIVOS  Value and Impact of Virtual Outreach Services
1 Introduction

1.1 VIVOS aims/objectives

VIVOS was a one-year project running from February 2000 to the end of January 2001. It was conducted by the Department of Information and Library Studies, The University of Wales Aberystwyth and received funding from Re:source - the Council for Museums Archives and Libraries. The research team was based at Aberystwyth and collaborated with information professionals from Cornwall, Suffolk, Leicester, South Humber, Devon, North Thames and Salford and Trafford to assess the Value and Impact of Virtual Outreach Services. Development of research skills by the information professionals was seen as an integral part of the project.

The project had three main aims. The first two related to work carried out by health libraries to promote ease of access to information sources, particularly amongst primary-care and community staff. Outreach services should promote access to information resources for all healthcare staff and it is therefore important to establish a toolkit of methods for assessing the effectiveness of the services themselves and of associated training programmes. The VIVOS definition of ‘Virtual Outreach Services’ was fairly broad and covered any services that enable healthcare professionals to access pertinent information without physically coming into the library premises. In most cases this equates to electronic information sources, but at this VIVOS research site it involves the dissemination of a hardcopy digest of topical evidence-based issues.

The third aim of the project was suggested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via the People’s Network. This proved challenging since the People’s Network is not yet established enough for an evaluation of its role in supplying health information to the public. The project team therefore decided to concentrate on locating schemes that are currently operating and on investigating healthcare professionals’ attitudes to provision of health information on the Internet.

The five original sites selected for participation in the VIVOS study were chosen because their outreach services were already established. This had the advantage that a certain amount of baseline data were already available but also gave the opportunity to investigate how to maintain the momentum of projects beyond the initial enthusiasm. The sites were also selected because they provided a variety of project types and environments. Two additional sites were included once the project was underway. A specific aspect of each project was identified for evaluation by VIVOS:

- **South Humber**: The bulletin *Evidence matters!,* a regular digest sent out to local primary-care and community staff alerting them to topical issues in clinical effectiveness and evidence-based practice. This investigation also looked at access to the CINAHL database and the information-related problems faced by nursing staff in community settings.
- **Bury St Edmunds**: The Pink Book developed by library staff at the West Suffolk Hospitals’ NHS Trust, originally as a directory of information for primary care clinicians.
- **Salford and Trafford**: A three-day training programme to accompany the e-STABLISH project.
- **Cornwall**: A database-training programme run for community staff by Cornwall Library Services.
- **Leicester**: A feature of the Trent Futures project giving remote access to NISS Biomed databases through the issue of Athens passwords.
- **Exeter**: The Website set up by Exeter Medical Library.
North Thames Additional data analysis for an existing database-access project evaluation.

This report is part of a set of preliminary reports produced for each of the participating sites, primarily to give an early indication of the results of each site evaluation. Work is still continuing on the data analysis and the full project-report will discuss common themes and issues raised across the site evaluations. The final report will draw upon the collective experience of the information professionals from the sites, along with the observations of the research team, to produce a set of guidelines to help other information professionals wishing to develop their own services. The results of the investigation into attitudes towards health information on the Internet and provision of health information to the public will also be presented at a later stage.

1.2 VIVOS, !evidence matters! and CINAHL

Using in-depth interviews, the VIVOS evaluation at South Humber investigated two distinct resources of information firstly, the bulletin !evidence matters!, and secondly, the nursing and allied health database - CINAHL. Current users of either resource were identified, as were the reasons for their use, and their views on these information sources. Attention was paid to evidence-based practice and clinical effectiveness issues.

South Humber is in the second year of funding from the Education and Training Consortium for the provision of CINAHL. In spite of initial efforts at promotion there has been poor uptake of the service from healthcare professionals in the region. No further promotion has taken place and the site librarian was keen to establish the current levels amongst registered users as well as perceptions of how the service could be promoted to the healthcare community.

!evidence matters! is a regular digest of current developments in clinical effectiveness and evidence-based practice on specific topics. For the past two and a half years (at the time of the survey) it has been distributed on a monthly basis to named individuals in primary care practices. The bulletins are produced on A4 sheets and are intended to be succinct summaries of key points relating to topical issues of local interest. The editorial board, comprised of a primary-care practitioner and a pharmaceutical advisor as well as representatives from the Health Authority and information and library services, ensures that the information contained in the bulletins is taken from standard evidence-based resources such as the Cochrane Library. The evaluation of !evidence matters! focused on how recipients use the information supplied through the bulletins, whether they feel it is appropriate to their needs, and how the editorial team can ensure that it keeps pace with changing requirements of the target audience.

2 Methodology

2.1 Population surveyed

Interviewees were randomly selected, though the sample was stratified to reflect the spread of job roles across primary care and community staff from the South Humber region. The samples were drawn, as applicable, from the list of registered users of CINAHL or from the distribution list for !evidence matters!. Prospective interviewees were telephoned by the researchers, with a view to arranging an interview. In all, twenty-two interviews were conducted with health professionals from the original sample: seven users of CINAHL and fifteen from the !evidence matters! distribution list. The numbers selected for the samples were proportionate to the number of names on each list, hence the inequality between the numbers interviewed for each topic. The !evidence matters! sample contains nine community-based managers. This number may appear disproportionate but is due to the fact that names were taken from the distribution list. It became clear during the interviews that many Practice Managers act as gatekeepers and post destined for practice-members is directed through them.
Where possible, face-to-face interviews were conducted, and telephone interviews were held when it proved impossible to arrange a mutually agreeable time. In South Humber 77 per cent (n = 17) of the interviews were face-to-face and the remaining 23 per cent (n = 5) were conducted by telephone. With the exception of one interview all were audio-tape recorded, comments and quotes are taken verbatim from the interview transcriptions.

In the interviews concerning the use of CINAHL the Critical Incident technique was used (Abad-Garcia et al., 1999; Chell, 1998). The interviews explored broad information needs and information-seeking behaviour of the health professionals, and attempted to identify areas of their work in which they have specific problems locating information with particular reference to evidence-based decisions and personal studies. The Critical Incident technique asks respondents to describe a specific occasion when they had an information need and how they attempted to meet that need. It was hoped that respondents will find it easier to recall a specific incident and will therefore give a more expansive answer. Another potential advantage is that respondents can be asked to confirm how they used the information acquired.

For the purpose of this report, individual respondents are identified by job category to protect their identity. The authors feel, however that it is important to attribute job type as this has a bearing upon an individual's 'world view' of their work environment (Checkland and Scholes, 1990; Mason and Willcocks, 1994). The interviewees' job categories are shown in square brackets after quotes along with code-numbers representing the practice or unit where the interview took place. Details of job categories and numbers of survey participants are presented in Appendix 1.

2.2 Methods employed

A qualitative approach was followed using semi-structured interview schedules and these were administered at the interviewees' place of work. The interviews were designed in consultation with the librarian at South Humber Health Authority. Copies of both interview schedules are included in the Appendices.

2.3 Chronology of site survey

The interviews were conducted in September 2000. The tasks of transcription and analysis were carried out between September 2000 and January 2001. Textual analysis was completed using NUD*IST 4 software.

2.4 Navigation of report

The structuring of the report corresponds to the emerging categories and themes from this process following the 'grounded theory' approach developed by Glaser and Strauss (1967). These concepts are used as a framework for this report, rather than simply listing responses to the questions. The sub-heading structure is designed to facilitate ease of reference to specific issues and themes.

Following this interim report, there will be formal discussion of the preliminary results with the site librarians to further validate the findings prior to preparation of the final report.
3 Work environment

The following sections illustrate people's daily work environments and the factors that impact on them and their use of information. The themes in the following sections emerged from analysis of the data obtained from semi-structured interviews. These comments were, in most part, volunteered by the interviewees, as asides, or additional explanations to the questions being asked. The analysis sheds light on the way the work environment shapes attitudes towards professional practice and the role of electronic media in finding and using information.

3.1 Standardisation of care

As an implication of the moves towards professional accountability, health authorities are seeking to standardise documentation of treatment interventions and management of care. This is facilitated through the use of guidelines, protocols and policy documents.

Clinical guidelines based on the systematically analysed results of research and carefully introduced to doctors can improve clinical practice and outcomes. (Feder, 1994 p.1457).

The importance of guidelines and standardised practice traverses all areas of medical and health provision and reference to these issues was made by interviewees from a variety of healthcare roles:

'Yeah, there's a travel, there it's like a protocol of what uh recommend, recommended inoculations and things like that….We get them regularly, so we sort of put out the up-to-date one and pin it on the wall.' [CBM: 6]

'You don't actually change the evidence but what you do is make the evidence more usable. ....So that's what we do now, well that's what I do and I suspect it's what the nurses do because I've sent them off to do another bit about checking .......' [PCC: 15]

'We talked about this a, a few weeks ago and we were saying, we need to find some Evidence-Based, and to what to base our own toys on....and cleaning of the toys...’ [HV: 16]

3.2 Multidisciplinary teams and the sharing of information

As the emphasis and responsibility for care and provision shifts back to the primary-care setting it is vital that multidisciplinary team-working becomes the norm. The importance and focus on communication between professionals is illustrated through interviewees' comments: (see also Section 3.2.1 for the challenge of improving communications)

'We are a team.......' And later ‘ anybody who might be involved with a particular patient. Also providing our own resources as necessary....... But, if they already have physiotherapy in the hospital we carry on with that and liaise with them. We then carry on visiting as necessary. We usually set up what's called a clinical review forum in which we get everybody who's involved together if possible....' [CP: 2]

'Um, when we go to regular practice meetings, there are, if there's anything on sort of an issue that no-one's sure on, we always sort of bring up any questions um and raise them at the meetings really. Or the mangers get together throughout the town.' [CBM: 6]

'And we are hoping eventually just, I am just putting a case together for um a nursery nurse to assist me and another team of health visitors......’ [HV: 16]

'Uhm there's professional meetings. You can spread the word via professional meetings.' [CN: 13]
Interviewees readily demonstrated many varied instances of sharing information between all elements of their organisation. The importance of using regular team-meetings as a forum for this purpose is highlighted. The first comment also refers to the deployment of Evidence-Based practice.

"Right, well I mean if I personally wanted to get hold of something around Evidence-Based practice I would either use the services on the NHS-Net or I would actually approach the staff within our clinical governance directorate to get hold or relevant information for me." And later..'...I've got a number of if you like mechanisms within the PCT both through commissioning and clinical governance where they would be accessing Evidence-Based practice to inform the work that we are doing as a PCT in terms of our own quality development programme."[CBM: 18]

"No, I, I ring the Health Authority.....Like the Registration Department or, Items of Service Department.....'Cos we are linked via a computer........straight to them, so, there is always somebody there that will you know......."[CBM: 3]

"You know things like that um they send us up-to-date things. There's also, as I say there's PCT......our main the lead manager and she passes information through and I can always get anything from her if I wish."[CBM: 12]

"Uhm, we have a fortnightly team meeting so that if any of us have found any useful articles they are always circulated at the team meeting. Our leader usually has a big wodge that she's come across and she says, "I've found this "......so you know, we do discuss things.......at our professional meetings."[HV: 8]

"So I would take that to one of the meetings and discuss there with the other managers what they do........Things like that, to me that was an issue [back pay] and I took that up with the other managers."[CBM: 6]

"...to use our practice meetings less for sort of running the business and more for sort of professional interaction..."[PCC: 15]

"They, they we have just started actually, I'm just started going to those meetings......so that things can be discussed between surgeries, which I think is a very good thing you know."[CBM: 1]

"......um I always circulate, any other documents, or there's ...Um reports that we get through."[HV: 16]

The sharing of information with colleagues from other disciplines reinforces the links between team-members.

"But if there is anything on midwifery or, or obstetrics or maternity I now will put one in, they have got a basket for information so I, I'll give it them, yeah."[CBM: 5]

"Um it's usually just by things that come through us and sometimes through meetings from, you know with other practice managers, um primary healthcare teams, quite useful to us you know. They, they keep us informed."[CBM: 10]

"But, if they already have physiotherapy in the hospital we carry on with that and liaise with them."[CP: 2]

"There's not often a lot of crossover in the sort of treatment that we do but we would do, we do discuss generalised things that do crossover between us, yes."[HV: 8]
3.2.1 Communication issues

The importance of communications with colleagues and others has been highlighted through the earlier parts of this section. The following comments demonstrate significant personal feeling about the inherent difficulties of keeping all the relevant health professionals informed.

‘Again, communication is a very big stumbling block because no matter how hard you try it seems to be always the thing that falls down. We have the same problem when we’re trying to disseminate any information around the Trust’. And later ‘We are self-managed teams but some of the teams are more integrated than others. Which means that sometimes information isn’t passed right through that whole team, we try but it doesn’t always happen.’ [CN: 13]

’Sometimes I feel that even the in-house communication, it’s truly difficult to sort of keep everybody informed’. And later ‘But if it’s difficult for us to keep communication, out there it’s even more so…….from my experience in [job role] I’m sure that communication is one of the most important things of all. Make sure everybody knows what’s going on all working towards the same, the same object.’ [CP: 2]

‘I think if we can all sort of really know what is going on at the moment because just now we’re getting very little from them. If we’re lucky we might hear from our local [job role] that the [treatment] has been changed to, other, you know otherwise we just don’t get told anything at all, and all of a sudden you see more [treatment] for one thing than another.’ [CP: 9]

3.3 The informed patient

3.3.1 Patient involvement in decision-making

‘I think you know patients have a right to know uh everything about themselves and, and the, and the ways they can treat themselves.’ [CBM: 5]

As the above comment shows, practitioners are responsive to the participation of patients and their carers in active decision-making about treatment and care-management. This reflects the emphasis on the ‘informed patient’ and ‘patient involvement’ in government policy documents such as Information for health: an information strategy for the modern NHS 1998-2005 (Department of Health, NHS Executive, 1998).

For patients to be able to participate effectively in these decisions they must have access to current and accurate information. Provision of good-quality patient-oriented information is a concern for health practitioners who are finding that a new role of ‘information mediator’ is increasingly becoming part of their daily practice. On the whole, interviewees expressed positive feelings about these developments and the resulting ‘empowerment’ of patients and their families. In an unrecorded interview, the respondent said of her colleagues, the doctors will always listen, look and help if they can [CBM: 14].

‘I want to check up as much information as I can about it so that when they start asking questions……..well, the patient’s carers, relatives, family. You know how this will affect me,……. you can give the basic genetic information…’ [CP: 2]

‘I actually find it quite uplifting when people come in and say to me, because it’s quite often the case you find people, parents particularly of children with rare syndromes, and one thing and another; or patients with very rare conditions are very clued up about what they’ve got and know far more than you do. And actually that’s an asset…’ And later ‘And if they get understanding from somewhere else, fine….in the past they have actually enriched my knowledge…’ [PCC: 15]
"You know say with a disabled child they might go out there and find it all themselves. Whereas you know you could argue years ago, people didn't have that access, and they relied on health professionals to do the signposting and that for them. Well, now they will be able to do that themselves." [HV: 16]

"Patients have a lot more knowledge than they used to have anyway, they're a lot more eager now. not just "Oh you've got this Mrs so and so" but they want to know……..I haven't got a problem with that." [CN: 13]

"With the patients using the Internet. Um I suppose it gives them more information, uh give the patient more information so I suppose in a way they, they know more what questions to ask, about their own treatment." [CBM: 10]

‘…And, that patient knows more about that condition than the, than doctor does because they have done so much research into it……. I think most doctors are willing to listen…..’ [CBM: 5]

“Well, I ask them for help sometimes I must admit. And uhm, I actually think it's quite healthy. We run MS groups and some of the people in the MS groups look things up and they bring it to the group and it opens up general discussions around issues.” [PAM: 2]

‘…..it's something we've talked about as nurses that we should encourage patients to do and we've sort of suggested that in the future it would be nice to have an Internet corner in the surgery for patients to look things up for themselves.” [HV: 8]

3.3.2 Implications for practitioners

Although respondents were generally positive about patients being able to access more information about their health, some practitioners had concerns about the impact of patients’ interpretations of the information.

‘I think that my only concern is that they get evidence which doesn't……..because there are all sorts of oddbods out there and I don't know what they're reading…and you don't even know about the professional qualifications of a lot of it.’ [PCC: 15]

‘I think it would cause quite a lot of concern which wouldn't have any base at all you know…I mean people would diagnose themselves as having cancer if you know they had a stomach problem.’ [CN: 13]

‘If anybody reads anything I think they can imagine they have got something.’ [CBM: 12]

‘And sometimes it's like something that is put in a medical term can sound so much worse than what it actually is in, in normal speaking terms.’ [CBM: 1]

‘Sometimes they're accessing fairly basic information and it may not be relevant and sometimes they may be drawing absolutely perfect information about the wrong complaint.’ [CP: 7]

This is where the role of 'information mediator' becomes important as practitioners guide patients through the wealth of information available.

‘…..well usually they will need guidance as to the meaning of technical terms and it's no good just banging information at people unless they're trained to make use of it basically.’ [CP: 2]

‘…..and if they have landed on a Website that might be aimed at healthcare professionals then it may be in a language they don't understand and we have had cases
where people have come in and asked me to help them interpret information that they've got, which is fine.' [CP: 7]

Other potential implications for practice identified by interviewees included:

**Raised public-expectations**

'Um, I think there uh, generally there's higher expectations because patients um,...know where to go, and so I think that's coming anyway....And I think it's a, it's a positive thing really – keep on your toes and, and it, it makes you explore other avenues.....[HV: 16]

'.......that's it because they think because it's available there it should be available here. And uh for various reasons it isn't.....And then of course they want to know why it's not available here....' [CBM: 1]

'Uhm sometimes it can raise unrealistic expectations for people about their treatment. Because America seem to be quite good at certain, certain treatments and they're often not available in this country anyway. I think there's good and bad things about it.' [PAM: 2]

'.....you know they seem to think that I can put them on it [drug to induce weight loss] and things. They don't seem to realise that the doctors......'[CN: 4]

**Pressure for professionals to keep up-to-date with developments**

'I'm all for people finding out things and getting to know a bit. It makes more work for the doctor but I suppose that's what we're here for........I think it's a good thing, it keeps the professionals on their toes too.' [CP: 2]

**Challenges to the traditional doctor–patient relationship**

'I mean I do know of people, not necessarily patients but people that including relatives that try and catch you out because they'll read up about their problem and then ask you what you think and then compare notes.' And later 'You don't want to see people sort of having that information and then testing out the doctor.' [CN: 13]

'They get too much information and it's taken to extreme a bit....... Um I think, I think the one that sticks out is people coming about uh drugs, those drugs to lose, to lose weight.....And tell me how it should be used and things....' [CN: 4]

Greater empowerment of the patient through availability of information reflects wider moves within society towards increased rights of the individual:

'And also with the Human Rights Act that's come into force this week... I mean one of the things that we're looking at, at the moment is setting up an appeals mechanism that patients can use if they disagree with decisions around out-of-area treatments or low-priority procedures....' [CBM: 18]

### 3.3.3 Socio-economic factors

The socio-economic context of the environment is always a critical factor in social research. Health information-seeking behaviours by individuals or groups and interviewees' perceptions of patients must be seen in their social context (Kuhlthau. 1998). Consideration was given to this aspect by some interviewees who reflected on the social composition of their practice and/or working area.

'.....for all our patients over sixty-five ......we have got three hundred and something.' [CBM: 3]
...it's probably because I mean a lot of clients are elderly and so they wouldn't possess a computer. I think maybe that...the younger ones probably do access a computer, but none of them have ever said that they have.' [CN: 13]

'It's not that kind of area.' [CP: 9]

'A lot of my caseload is in an area that I wouldn't expect people to have access to a computer anyway....' [HV: 8]

'But it's really quite a poor area of the town that I work in..you know. I think, in, in those cases people really don't seem to care very much about their own health. They are not very health conscious....' [CN: 4]

'There are no suitable libraries of reference around here because there aren't any schools of [specialism] around here.' And later 'there aren't any cybercafés or anything. [town] isn't quite that advanced.' [CP: 7]

3.4 Information barriers

More than ever before, practitioners require timely and accurate information yet they still face constraints on meeting that goal. Various information barriers were identified by the interviewees. Some were general problems (e.g. location of appropriate information), some were organisational (e.g. policies on information-provision), and others were concerned with the technical problems which aggravate the problems of juggling priorities for patient care and personal development.

3.4.1 Access to IT facilities

The lack of available equipment hinders practitioners' access to, and use of information. For one practitioner the problem is one of unfriendly clinical information systems.

'Whereas if we had access to a computer here and I had more time in my working day I'd use it more....' [PAM: 2]

'I would love to have a computer at work on my desk just to quickly like you know......but it just doesn't happen.' [HV: 17]

'......how they need training and how it would be helpful to have the equipment. If you haven't got the equipment then there's no point in having the training!........' And later '.....although having IT would help my other role......I feel that I should have information to hand so that I can distribute it and I haven't got that facility whereas some [CNs]...have that facility but we're very very segregated with being........' [CN: 13]

'.....I don't know if there would be Internet on it or not but we don't because our computers are too old. Money again.' And later 'They need more computers, there's not enough with CINAHL on .....'[CN: 11]

'.....but there's an in-house computer system a clinical information system it's called. Which seems to me to be remarkably user unfriendly.' [CP: 2]

3.4.2 Skills' deficit and technophobia

A few of the respondents expressed personal feelings relating to skills' deficit, for others the perceived problem is one of fear of technical equipment.

'I'm not very good at my own computer that's why. Pre-programmed things I'm better with but I've never done courses in computers.' [CN: 11]
"I'm not very confident on the computer."

'...I think it's the age as well it comes easier early on but the older you are the less sort of technologically-minded you are. It's a fear......And my difficulty obviously reflects a lot of [CNs].' [CN: 13]

'At the moment I think it's fear, it's fear of that ....I must admit we've got a computer at home, I walk past it because, or ask the kids!' [CN: 13]

The theme of fear of IT is identified by one interviewee's perceptions of colleagues' attitudes to IT.

'No, I think it's like some people do and are into it and others aren't probably `cos thy are just not aware...... It's just scared, you know......I think some of them are just a bit scared......Because you think there is so much to know and it's difficult....' [HV: 17]

3.4.3 Organisational barriers

'So, I mean I found it quite difficult getting it on my own computer because you have to go through getting passwords and things.....' [CN: 11]

' we're becoming quite frustrated that this team is falling behind in IT in comparison with other........so we've got a lot of skills between us but we can't use them to the full ....' [CN: 13]

'I know that other councils are doing work on the area but it's difficult to get hold of the information......They don't disseminate it particularly widely...Uhm particularly here's issues about ownership of research and there's also issues about staff and resources to disseminate research programmes.' [HRR: 19]

3.4.5 Logistical barriers

For several of the interviewees inconvenience is caused by a lack of access to, and reliability of, equipment. However, one respondent expressed the problems of not having a medical library nearby.

'You go in there and you're either waiting....or the computers are sometimes down....' [CN: 11]

'I mean we don't work with a computer, we have no computer here. The access to the computer is actually down at the other end of the building...... it's not free access so it would be by arrangement with surgery staff.' And later  'I think as a team we're sort of saying, "well, come if nobody's going to buy this piece of equipment let's see if we can, you know buy a piece of equipment ourselves which, really, we shouldn't have to do but I mean it would benefit the GPs.....' [CN: 13]

'Oh it would be lovely to be able to be linked up and just go and sit down and think oh I want that and just search for it. So everything's quite difficult, and when you've not got time to actually access it...' [CN: 13]

'I have got access at work, but it is at another clinic so it's awkward, you have to sort of make an effort to go.....And when you get there, there's often lots of other people in the clinic that are also using it so.....' [HV: 17]

'...it would be a lot more convenient, ideally if we had a clinical library here.'[CP: 2]
‘…so some teams are obviously further on than others, at the at the moment we're not sort of equitable. Certainly not with IT. That information would have helped me, you know access to that.’[CN: 13]

3.4.6 Anomalous State of Knowledge

In an unrecorded interview the respondent expressed the concept of ASK by Belkin (1980). In preparation for the interview this manager had asked healthcare practitioners at the practice what topics they would like covered by the evidence matters! bulletins and they said it was a difficult question to answer because you don’t know what you need until you need it. [CBM: 14]. The implication of this for health-information providers is that information needs can be difficult to anticipate.

3.4.7 Availability of information

For a range of reasons information is not easily accessible to practitioners, these comments were offered by respondents.

‘…..but they're not always that easy to find. By the time you've written off, you know put in a request to the library locally…you've lost interest haven't you?’[PCC: 15]

“You know it’s kind of specific information that isn’t collected well enough to be used or whatever, and partly actually getting a hold of stuff that isn't downloadable that can be difficult and can actually take considerable periods of time.’[HRR: 19]

3.4.8 Time and information saturation

Several respondents stressed the lack of available work time in which to read work-related material this position is also exacerbated by the volume of information they receive. Some of the interviewees stated that they tend to read the literature or access computers from home because of a lack of equipment at their work premises or lack of time within working-hours. Clearly, for the first two respondents working on home-based computers there are financial and personal implications:

‘Yeah, I would at work. I would love to have a computer at work on my desk just to quickly like you know……but it just doesn't happen’. And later ‘So I have got um Internet at home, I tend to do it at home now because it is just easier….Despite…. As I say, despite my phone bill!’ [HV: 17]

‘If I had more time I would use it more. Uhm, `cos the only time I really get a chance to use it is when I’m at home. When I'm right tired.’ [PAM: 2]

'I don't have access much to a computer here. I do at home which is where I tend to get my medical information from…' And later..'……and I go home and have a look at the computer and see what we come up with.’[CP: 2]

‘Um in any job you're just um trying to keep your head above water and it’s, it's a luxury to actually sit down and have time to browse and you know probably the only time you have got like is your own time.’ [HV: 16]

‘……and the time as I say the time to learn how to do it.’ [CN: 13] And later ‘and as I say time is very important because obviously we're trying to run case loads and trying to do all this extra….’ [CN: 13]

‘And I don't know about everything that comes through because we get so much stuff….It's time really, having the time to read it’ [CBM: 10]
'Well, like I say we get that much mail through, there's no reading time, there's just not enough reading time in this position. We try and pass a lot onto doctor, and they try and pass a lot back, but there is just insufficient reading time........And everybody is just flat out....Totally, so when we do get post there, there's quite a lot of bedtime reading that is just piling up, and to be fair there's just not enough hours in the day.....You know every book and magazine and leaflet we got, if we was to sit and read it we would never get anything else done.' [CBM: 6]

'I mean as a health professional I don't get chance to read ........ `cos I haven't got time so, I question who's got time to do all that.' [HV: 16]

3.4.9 Biases in published information

' I mean the problem about being local, the difference about being local I suspect is whether they retain uhm, or whether there's any bias.......' And later ' but what I need is a more dispassionate approach than just the media and the drug industry trying to force it down my throat see and I need something that actually allows me to say, well hold on guys yes, does it work.....?' [PCC: 15]

3.4.10 Frequent interface changes and problems of infrequent use

Yeah even though I've done it in the past you lose it. They change these Websites so often! [PCC: 15]

' because if you're not using it like on a regular basis then the same will happen, I'll forget....' [CN: 13]

3.5 Motivation to use electronic resources

The South Humber interviewees revealed considerable enthusiasm for the uptake of electronic resources and for developing IT- and information-skills. Several mentioned that they had been motivated enough to develop IT-skills through their own efforts, whilst acknowledging that there are pitfalls to this approach.

'No, nothing no, I have worked it out for myself.' [HV: 17]

'You pick things up as you play around. I think if you are interested and you want to find out, you'll go and get it.' [HV: 17]

'.....so I said, what I'll have to do is to bring a sandwich and then sit there over lunchtime. Have a designated lunch break and sit and......Sit on there browsing really..... Playing, that's the way to learn really. [HV: 16]

Medline is a resource that has wide appeal for the interviewees, and health professionals from a variety of job-types divulged that they refer to it, particularly for the management of rare conditions.

'Like the most recent thing I looked up, we got, um I had a child that has just been diagnosed with a really rare syndrome.....and I didn't know anything about it...'.[HV: 17]

'Yeah, you know there are some very rare conditions, which the doctors will never come into, come into contact during the whole of their medical career, but they perhaps have got one patient who has it.....' [CBM: 5]

'In fact one practice just up the road from us uhm a patient actually self-diagnosed a rare illness.....using information from the Net.....the GP had never seen it before.'[CBM: 17]
'I think for something that is probably a little bit more obscure, I think it's a good idea.'
[[CBM: 12]]

'You know I think I get most of the information off the computer, off the Net, ……well I suppose there's things like Medline if you want recent research.'[[CP: 2]]

3.5.1 Perceptions of IT-skills training needs

Interviewees from the CINAHL sample were specifically asked about their perceived training needs and this topic also arose spontaneously during one of the evidence matters! interviews. The comments in this Section reflect a whole spectrum of perceived training needs from very basic training to guidance on how and where to access the available electronic resources.

Before the benefits of time-saving computer software can be realised by individuals a considerable level of personal investment is necessary to acquire the necessary skills to access and exploit the available programs. For the community nurse cited in the first quote this obstacle appeared insurmountable due to other responsibilities.

'I've just done this two-year course and because we were sort of doing these fairly lengthy assignments I just couldn't, I mean it was easier to write it down and then have someone type it up for me than do it myself. Uhm because of time limits at home and family, uhm than to actually put an assignment on the computer, I'd have had to start it weeks before I actually did……'[[CN: 13]]

'I suppose training on to, on using it on your own computer at home……..I know one way of using it but there's probably lots of different ways of using it that I don't know about because I just use the same route, subject headings, search that subject….'[[CN: 11]]

'…..I suppose when you've sort of grappled with it over a period of time you develop bad habits. You get into a way of doing it that perhaps isn't quite so easy to correct but yeah, initial training would have been useful……' [[HRR: 19]]

'Not very confident with the computer, uhm certainly need some training.'[[CN: 13]]

'So, hopefully I am going to be, uh getting some lessons and having a go with that.'[[CN: 4]]

'…..but for me they'd have to go back to basics again, you know sort of logging in and things like that. And how you can do lots of different words and link them together. I've forgotten what it's called…..which narrows the field.'[[PAM: 2]]

'……..And it's probably very general whereas you can go into it more specific but I don't, I've never used it in that way I use it in the same way every time.'[[CN: 11]]

'Well, I don't think I would probably need training on using it no. Where it's accessed from. How do I get onto the thing?'[[CP: 2]]

4 Interviewees' use and perceptions of the CINAHL database

4.1 Current use of CINAHL

Although considerable enthusiasm for the use of electronic resources emerged from the interviews, only a small number of practitioners had registered for CINAHL access. Of the seven registered users interviewed, four confirmed that they had used the service themselves. The two registered users who had not actually accessed the service gave the following reasons: lack of immediate need, and lack of confidence in using computers.
Levels of use ranged from ‘not recently’ to one long-standing user who offered very strong support for the database as a comprehensive source of information.

‘I would just either use the Internet now or use CINAHL and I can pretty much get whatever you want. Again I mean I haven’t looked about looking for information any other way because I’ve found all the information I need……I would say I like CINAHL. I mean I’ve used it since the beginning since I started my training in 1989.’ [CN: 11]

In respect of helping patients find information and the accompanying personal satisfaction another user demonstrated her motivation to use CINAHL in these comments:

‘Lots of different things, and I quite like that aspect of it, I like finding out things for people….It gives you a buzz, you know when you….’[HV: 16]

When asked what they tended to access the service for, all said that use was related to involvement in research and education. For some, research was the main focus of their job but others participated in projects as part of a Continuing Professional Education course or as part of unit-based initiatives.

On interviewee said that she had not used the service personally but that she often sought assistance with information-seeking from colleagues and was unclear as to what resources they had used. She knew that they had accessed Medline in the past and thought that she may have accessed CINAHL in collaboration with a colleague earlier that day. This interviewee's comments are included in the data relating to use-patterns.

When interviewees were asked about frequency of use of CINAHL, their responses illustrate themes already identified in this report: information-need related to education/research; use inhibited by time-pressure; and use inhibited by lack of familiarity and confidence.

‘Every time I do a course.’ [CN: 11]

‘[five or six times] probably since last September time…if I had more time I would use it more. ‘Cos the only time I really get a chance to use it is when I’m at home. When I’m right tired…whereas if we had access to a computer here and I had more time in my working day I’d use it more.’ [PAM: 2]

‘…it’s very ad hoc at the moment. If we was familiar and comfortable with it, it is something that we would probably use weekly, as and when the, I think we would just browse probably.’ [HV: 16]

Both the professional researchers had used it in the context of their work, one had last accessed it within the previous couple of months whereas the other had not used it in his current job.

Interviewees were asked to think back to the last time they accessed CINAHL and were encouraged to talk about their use of the database on that particular occasion. This approach is a version of the Critical Incident technique, used with interviewees who had not used the database. The researcher who had not accessed CINAHL in his present job (i.e. as a South Humber registered user) was treated as a non-user, leaving four interviewees to elaborate on their patterns of use.

When asked what they had been looking for the last time they accessed CINAHL the responses fell into the following categories:

- Patient needs
- Practice needs (production of protocols)
• Educational needs
• Research needs.

Participants explained that they had used the information located in the following ways:

'It's as part of a study that is being undertaken at the moment.' [HRR: 19]

'...we will put that into practice...what we are hoping to do...we talked about this a few weeks ago and we were saying we need to find some evidence-based, and what to base our protocols on.' [HV: 16]

'Basically just getting hold of journals, photocopying information [for inclusion in an essay].' [CN: 11]

The fourth interviewee had been looking for two separate pieces of information and had used one for patient care and the other for research purposes:

'I was asked to see the patient and I wanted to know really what the prognosis was and the type of symptoms that she needed to manage.' [PAM: 2]

'...we printed out and we've used that in presentations because there was a lovely diagram.' [PAM: 2]

Interviewees were asked about the location from which they tend to access CINAHL. Two mentioned working at home because they had little time during the working day and limited access to computers. One also mentioned access from libraries. The health visitor relied on support from colleagues at work and, until recently, had not had Internet-access available from the office. The researcher was the most fortunate, with desk-based access to the database.

4.2 Motivation amongst non-users

Some interviewees who had registered for the service but did not access it regularly expressed high levels of motivation surrounding its use:

'I would love to have a computer at work on my desk just to quickly, like you know.' [HV: 17]

and one was particularly keen to exploit the offer of a free connection.

'I originally came back with a pack and because it was a free link-up for a year I went to the practice manager and said, "look we can have this for a year, is that OK?"' [CN: 13]

Despite the enthusiasm and support of the practice manager however, momentum could not be maintained because it was some considerable time before access to the free service was achieved at the practice.

4.3 Training and awareness issues

4.3.1 Training

Of the seven interviewees, only one had received dedicated CINAHL training although others had received training on basic IT- and information-skills. However, three said that they thought they would benefit from training, with one specifying that she would be prepared to travel to receive it.
'Somewhere in travelling distance really, but for me they'd have to go right back to the basics again, you know sort of logging in and things like that. And how you can do lots of different words and link them together, I've forgotten what it's called, which narrows the field.' [PAM: 2]

'Uhm, one of the reasons is I'm not very confident on the computer……..uhm certainly need some training.' [CN: 13]

'I think I would actually……just really, getting, knowing the way around.' [HV: 16]

Even the long-standing user said that she had problems retaining familiarity with the database because her use was sporadic.

When asked whether they had any preferences for how a potential training course could be organised to suit their needs the following suggestions were made:

- Training on how to use it on own computer at home.
- Examples the database's versatility and of different approaches to searching – to establish whether interviewee was currently using the most efficient route.
- A rolling programme so that practitioners could take advantage of training sessions as their practices/units became fully connected to the network.
- Location of training at practitioner's workplace – preferably at own machine.
- Training given to small groups.

One interviewee, talking about training in IT-skills in general, pointed out that a necessary adjunct to training must be the provision of access to IT facilities:

'If you haven't got the equipment then there's no point in having the training!' [CN: 13]

4.3.2 Awareness

Since only a minority of eligible practitioners had registered for access to CINAHL, interviewees were asked if they had views on how the service could be effectively promoted to their colleagues. Three ideas were put forward:

'They need more computers, there's not enough with CINAHL on it. You go in there and you're either waiting or the computers are sometimes down and you don't know when you go in if it's going to be, but mainly there's not enough.' [CN: 11]

'There's professional meetings. You can spread the word via professional meetings.' [CN: 13]

'The research clubs in Trusts, in research Trusts. And then there's Trent Focus, they are an organisation focused on the Trent area regarding research and training. I'm sure they'll have it.' [PAM: 2]

5 Interviewees' use and perceptions of !evidence matters!

The editorial board of !evidence matters! use evidence-based resources, monitoring of media coverage, and feedback from the librarian at the Health Authority to identify 'hot topics' with local relevance for inclusion in the bulletin. The intention is that the bulletin should provide a regular and accessible digest of sound information with an evidence-based foundation to cover issues of immediate interest to healthcare professionals in the South Humber region.

As part of the policy of responding to local needs, the Health Authority librarian suggested that VIVOS should carry out an evaluation of !evidence matters! to investigate how recipients use the information supplied through the bulletins, whether they feel it is appropriate to their needs, and how the editorial team can ensure that it keeps pace with changing requirements of the target audience.
5.1 Use of evidence matters!

5.1.1 Awareness of evidence matters!

Of the 15 interviewees, 13 confirmed that they received evidence matters! regularly. The two who did not receive the bulletins said that they would be interested in seeing them in future.

5.1.2 Use of information contained in evidence matters!

When asked how they used the information contained in the evidence matters! bulletins, interviewees’ responses fell into eight categories as indicated in Figure 1. Some interviewees mentioned more than one use and all stated uses are included in the Figure. The range of uses is illustrated in the quotes below. It can be seen that, although recipients may not have an immediate need for the information they are very likely to circulate it to colleagues or keep it themselves for future reference.

![Figure 1: How interviewees used the information contained in evidence matters!](image)

‘Unless it’s something that is particularly relevant to something I’m doing at the time, it’s pretty much like all reading that you do, it pads out your knowledge and gives you things to think about.’ [CP: 7]
‘It just depends, sometimes I pass it on then to GPs or to practice nurses. If I think it is useful to me then I’ll probably file it and keep it for future reference.’ [CBM: 10]

‘We all, actually we all get a copy in this office so we tend to all read it and then, depending on what it’s talking about, I do discuss it.’ [HV: 8]

“Well, if, if anything’s applicable to the surgery then we would, we would carry it out you know.” [CBM: 1]

Interviewees were asked what happened to the bulletins once they had finished reading them. Three had already mentioned that they retained them (as indicated in Figure 1) and, when specifically asked about this issue, a further seven revealed that they too would keep back-issues for future reference. Some retained only those issues they considered particularly relevant but others kept them all. There were differences too in the approach taken to storing the bulletins. Some filed them away or kept them in boxes or on shelves at work, one said that she would take them home and a couple said that the bulletins would be kept for a while and then cleared out.

5.1.3 Dissemination of !evidence matters! to colleagues

As indicated by the previous section, the information contained in !evidence matters! is frequently shared with others. Five interviewees said that they would circulate the bulletins around the practice, and discussion with colleagues either informally or in the context of practice meetings is also stimulated by issues raised in the bulletins.

When specifically asked about the sharing of information it was clear that Practice Managers would often be the named recipient of the bulletin. They would then either pass it on to the healthcare practitioner within the practice, sometimes to specific individuals with interest in content of a particular bulletin, or retain it for general discussion at practice meetings.

‘……I think if there’s anything relevant to the nurses I pass it on to them I also highlight anything for GPs….’ [CBM: 17]

‘If anything in them is relevant and to look at our protocols and the way we carry out the practice or, or, impinges on our drug formulary within the practice then we will raise it at the practice meeting.’ [CBM: 5]

‘…..so what would happen is you’d see one, it’s always circulated, people always write comments on it, ….you see we tend to circulate these……it tends to do the rounds with people writing comments on – “I do this anyway” or “should we be doing that” or you know that kind of stuff.” [PCC: 15]

‘Well, there’s …health visitors …and then the district nurses on this desk. There’s not often a lot of crossover in the sort of treatment that we do but we would do, we do discuss generalised things that do crossover between us yes.’ [HV: 8]

5.2 Content and design of the bulletin

5.2.1 Timeliness of content of !evidence matters!

‘…..I probably read Drugs and Therapeutics…the Merrick bulletins, !evidence matters! and Bandolier whenever I see them and we probably all get them every month. They’re only informative if they hit the right spot in many respects.’ [PCC: 15]

Editorial policy is to make the content current and relevant to issues of local interest. Understandably, it is not possible to ‘hit the right spot' for everybody all of the time given
the variety of interests and environments in which the recipients work. Some issues will be more relevant to each individual or practice than others:

‘I think it depends what we’re currently looking at within the practice on whether it’s most useful or not.’ [CBM: 17]

‘Usually, there’s subjects connected with things I am interested in. We, we all have our own little areas of work.’ [CN: 4]

However there is strong support for the bulletins and all of the interviewees with access to the !evidence matters! said that it contains useful information (whether for themselves or colleagues). The frequency of relevant topics occurring ranged from ‘occasionally’ [CN: 4] to ‘it’s always something of, of interest of one type or another.’ [CBM: 5].

Participants were particularly impressed by the following aspects:

The importance given to topical issues

‘…they don’t tend to go in for the obscure items.’ [CBM: 5]

‘…they cover the topics that are, that are…what's happening at that time.’ [CBM: 1]

The local focus

‘So I think it’s just important that the editorial staff try and sniff out what the local issues are.’ [PCC: 15]

‘….the last one was on obesity,…which is, um I found quite an important subject in our job.’ [CN: 4]

The provision of useful contact details

‘It seems to be well, well presented with uh the references, and uh where you can get hold of people for more information…….contact points available and, and uh Websites as well’[CBM: 10]

‘…contact points available and, and different Websites as well that, that keeps, may be of interest. No, it’s a good little document.’ [CBM: 5]

The fact that the bulletins can act as a catalyst for further information-seeking

‘The other thing that journals like !evidence matters! tend to do is to make you go and look up the original article.’ [PCC: 15]

The fact that the bulletins can introduce recipients to new sources of information

‘I actually, it was from that, um the !evidence matters’ where I think I found out about CINAHL’ [HV: 17]

5.2.2 The design and presentation of !evidence matters!

Other very favourable comments emerged when interviewees were asked to comment on the design and presentation of !evidence matters!. Interviewees were appreciative of the concise and readable nature of the editorial style and liked the fact that the information could be quickly digested by busy practitioners.

‘….it’s short and pithy which I actually like.’ [PCC: 15]
'I quite like it really, I mean it's fairly undemanding, it doesn't take too long to read. And I mean it's, if I can get through something in five minutes I'm happy.' [PCC: 15]

'I think it's a very good format because uhm' being fairly lightweight in terms of how easy to read it is you do tend to read it, rather than add it to the pile…’ [CP: 7]

The last quote illustrates how important it is for producers of information to stay in touch with the daily work environment and needs of users and to provide information in a form appropriate to those needs, otherwise documents will simply be 'added to the pile'. Several other interviewees took up this theme and praised the fact that 'evidence matters! remained easily identifiable and was printed on a single sheet of paper.

'…..it's quite distinctive, because it's usually blue, so it stands out to you when it comes, so that is quite useful…' [CBM: 10]

'It's good, `cos you don't get reams of, you know when you get reams of stuff to read through the post….It's good `cos it's just one piece of paper…..And it's to the point' [HV: 17]

Opinions were summed up by this health visitor:

‘…I like it like that because it's brief but it's to the point and it's relatively easy to read.’ [HV: 8]

5.3 Potential enhancements

Participants were encouraged to suggest potential enhancements to the service. Many found it hard to think of improvements that could be made and those that did focused on the issues identified above, i.e. the need for ensuring brevity and an immediately-recognisable appearance:

'….I think it seems quite fine, quite, quite well-presented as long as it doesn't become too long I think that's the main thing……..I think as it becomes longer you tend to lose interest a bit.' [CBM: 17]

'I mean it’s nice enough isn't it but you just wonder whether it would make a bit more impact if it was, if it was set out. I mean it's a bit like black on grey isn't it. But that's all there is, I quite like it really. [PCC: 15]

'I think it could be more eye-catching…… It's the sort of bit of paper that can easily get lost'[CP: 9]

This last comment illustrates how difficult it is to satisfy all users since others particularly favoured the one-sheet format. One practitioner had a word of warning about the need to keep 'one step ahead' by constantly reviewing how information should best be presented to make an impact on healthcare professionals who are constantly inundated with information from many quarters.

'I wonder if there are too many, almost now getting to be too many of these. Of these you know more newsy type of formats in that you start then having to decide which one you're actually going to read. I suspect that most GPs read a half of what they receive and make a conscious decision not to even open some of them and the same probably applies to these other things.' [PCC: 15]

One health visitor felt that sometimes the print was a bit small but appreciated that this is probably an attempt to keep the length down and said that on balance she preferred the one-sheet format even if it meant small print at times.
The efforts of some recipients to ensure successful circulation of the bulletins were hindered by the behaviour of colleagues:

‘...because when, if I've been asked in the past to leave stuff out for the locums it either gets lost or they take it away or they totally ignore it.' [CP: 9]

“Yes, I file them in the practice. I don't think I necessarily file them all but I file most of them. Sometimes to be brutally honest they never actually make it back to me, if you see what I mean, too far. I mean that's the problem of sending them round, they get lost sometimes.' [PCC: 15]

‘...we had a practice manager at the time that sort of was good at filing stuff straight into the bin!' [CN: 4]

This is a difficult problem for the !evidence matters! team to overcome. Greater promotion of the bulletins may result in more practitioners asking to be put on the distribution list in their own right but, as indicated earlier, the preferred approach of many practices does appear to be use of the Practice Manager as an information-gatekeeper. One Practice Manager suggested a possible solution: that of having an electronic version of !evidence matters!. She felt that the GPs in her practice (who all have PCs in their rooms and are on NHS Net) would be equally likely to look at an electronic version as at hardcopy. Whilst this may be a solution for some, the factors identified as Information Barriers (see Section 3.4) illustrate that not all groups of practitioners have equal access to IT facilities.

The essential themes of relevant and timely information also reappeared when interviewees were asked about potential enhancements and about topics they would like to see included in the bulletins:

'So I think it's important that the editorial board try and sniff out what the local issues are.' [PCC: 15]

Current issues, probably like at the moment we are doing meningitis campaigns, flu vaccines um so anything that is current.'[CBM: 10]

‘Certainly anything around chronic diseases would be useful....particularly at the moment see, you know the heart disease…….’[CBM: 17]

'I don't know if they could really research it, but behaviour modification and behaviour, there seems to be so many behaviour and family issues around.'[HV: 17]

'But I think it maybe needs to be something that's affecting all the primary care. So it might be something that's sort of relevant through the PCG...that they're using. You know that they are dealing with at the moment.'[CP: 9]

This final comment indicates a wish for further promotion of the topics to appear in future issues of the bulletins:

'I think it's fine, um I would probably like more information about um how often....I mean I don't really know how often it comes out.......and what subjects they are going to bring out.'[CN: 4]

6 Information use

During the interviews, participants revealed details of their general information behaviour, i.e. not necessarily directly related to use of !evidence matters! or CINAHL. This was encouraged through probing by researchers on the topic of how interviewees (from the !evidence matters! sample) go about obtaining information on matters relating to
Evidence-Based practice and clinical effectiveness and by the use of the Critical Incident technique (for interviewees from the CINAHL sample who had not accessed the database). The responses fell into the following main categories:

- Use of library services
- Use of personal networks
- Use of hardcopy sources including journals
- Use of electronic resources

6.1 Use of library services

Respondents spoke highly about the library services provided by the Resource Centre at South Humber Health Authority and the flexible information support provided by the Centre staff.

'Yes, yeah we have got the medical library, the library here. And as I say, we have got Medline, CINAHL, any….Anything that I wanted, I can't see that I'll be unable to obtain….' [HV: 16]

'Well, we would order through the Resource Centre…..' [HRR: 19]

'Uhm yes I would go to the library …….I've been to the public library as well….' [CN: 13]

'I have actually rung other people to actually do the literature searches for me…..And [Resource Centre staff member], is very, very good.' And later 'Well, when we couldn't get the document off the computer here we, I rang [Resource Centre staff member] and he accessed and sent it….' [CN: 13]

One nurse had attended training sessions organised by the Resource Centre and was very pleased with the experience although limited access to IT facilities at the practice meant that she had not been able to benefit from her new skills:

'It was very interesting, uhm and having been on a course recently it was interesting to learn how to do it but I didn't actually get the full benefit of using that I have actually rung other people to actually do the literature searches for me…[member of Resource Centre staff] is very very…good.' [CN: 13]

Although satisfaction levels were high amongst the interviewees, some participants did have suggestions for ways in which services could be expanded to further meet their needs:

'Well I would, I personally would like to see community journals, and um paediatric and things associated around health visiting. That's being very selfish. But anything on general practice really. [HV: 16]

'It would be really lovely if they had full text.' [PAM: 2]

'I email them for articles but it takes a week or two you see ………for it to come through' [PCC: 15]

One group of interviewees had access to resources through a research-support unit at their place of work and found this more convenient than attempting to visit their local health library at the hospital:

'Yes, yes that's in the Learning Centre. They have disks and whatnot. They have it [Medline] on CD-ROM…..' [CP: 2]
6.2 Use of personal networks

'This pattern of use of informal sources confirms the accepted thinking that nurses will, unsurprisingly perhaps, use local colleagues as a source of information. Reliance is also placed on local specialists, whether nursing or allied health.' (Urquhart and Crane, 1994 p241).

As has been found at the other VIVOS research sites, there was heavy reliance on colleagues and other contacts from interviewees’ personal networks. This trend has been identified (in the case of nurses) in earlier research such as that by Urquhart and Crane. In South Humber practitioners from a range of job roles indicated that direct contact with colleagues or other organisations plays an important part in satisfying their information-needs.

'Uhm, we have got a very good [title of specialist] who I happen to know at the local hospital. Uhm xxx the [title of specialist] at the Health Authority is also an amazing source of information and if either of those gentlemen don't know they'll tell me somebody who will! Or I'll go to the rep if the rep pops in. But you know I usually get the answers that I need from one of the two sources.' [CP: 9]

'Sometimes we'd share information within the group. If somebody could access it they would share it, share it within the group so that's other ways we accessed it.' [CN: 13]

'I mean if we have got a problem I tend to um as a practice manager phone up the road I go and she talks me thorough. But I have had no formal training.....' [CBM: 3]

'Um you know I can find out from Leeds or Sheffield who the consultant who would deal with this particular speciality....Or, or particular expertise and so no they are, they are you know willing to go into it and look into it and take it further.' [CBM: 5]

'And limited access to computers as well. We do have a research assistant here and uhm she will look things up for us...which is really helpful because she’s a lot quicker than I am.' [PAM: 2]

'...well I can get to know what I need to know through, through the rest of the staff like.' [CBM: 1]

'What I have tended to do if I needed any information, was there's a lot of other people in the building who will do that for me.' [HV: 16]

6.3 Use hardcopy sources

6.3.1 Journals

Access (whether through personal or unit subscription) to wide range of medical journals was mentioned by practitioners, one of whom noted the importance of having up-to-date information to match individual practice needs.

'Well, the practice gets it [Wound Care journal] for me but I'm the only one who reads it and I take them home.' [CN: 11]

'....RCN they produce a booklet every quarter, Nurse Researcher it’s called……I've not actually used them as yet but I'm sure they’ll come in useful at some point.' [CN: 13]

'Well, I read the health visiting magazine, the Nursing Times.' [HV: 8]

'....if there's changes with claims for travel vaccines and things like that I would probably consult, there is a magazine called Pulse.' And later ‘It's up-to-date medicine.' [CBM: 6]
'Well, I get the Health Services Journal at home. I buy The Professional Nurse, Nursing Standard, Nursing Times.........I also get sent to me the Primary Healthcare Journal.' [CN: 13]

'Well, I get the BMJ at home. The British Medical Journal and the Journal of the Royal Society of Medicine.' [CP: 2]

6.3.2 Use of other hardcopy information

One interviewee expressed a preference for hardcopy information, perhaps due to the perceptions of the more social or informal nature associated with printed journals.

'I don't actually find reading stuff on a computer screen terribly helpful because a lot of this I read, a lot of the stuff I think doctors read, they read at home.......I would read it just like I would a newspaper in the evening.....mark a few bits of stuff that catches my interest and bring it back in.....' [PCC: 15]

Others referred to more work-based uses for hardcopy sources and for one books are available in tandem with electronic sources.

'Uh, depending what it was for, if it was financial then we would, I would consult MedEconomics 'cos that's always a very up-to-date.....' And later 'Well it's, it's everything the Red Book, yeah it's like the doctor's Bible if you like. All the rules and regulations and......[CBM: 6]

'I have a core base of reference books for sort of standard clinical information.' [CP: 7]

'Um, we, do keep quite a lot of books at work and we are um now on the Internet at work' [CN: 4]

6.4 Use of electronic resources

As illustrated in Section 3.5, considerable motivation to use electronic resources was evinced by the interviewees. In some cases, attempts to turn motivation into practice are inhibited by a variety of issues discussed in Section 3.4. However, the use of electronic resources to locate information was mentioned by several participants, including one health visitor who though that the days of hardcopy information may be numbered.

'I think books are going out a bit now, because by the time they are printed. You just get what you want off the Internet now.....' [HV: 17]

'And the BMJ also has a very good Website.....You can get any, you can search on contents of past years ......' [CP: 2]

'You know I think I get most of the information off the computer, off the Net, it's extraordinary.' [CP: 2]

6.5 Problems obtaining relevant information

The CINAHL sample of interviewees were asked whether there were areas of their work for which they found it difficult to locate information. Of the seven interviewees, two said that they had no problems:

'No because I would just either use the Internet now or use CINAHL and I can pretty much get whatever you want.' [CN: 11]

'I don't think there is really, I think if I ever wanted anything we would get it.' [HV: 16].
One said that he had experienced problems in the past but did not elaborate. The remaining four who did find difficulties locating appropriate information gave the reasons:

- Lack of time for searching
- Lack of IT facilities and in confidence using computers
- Little information available on the topic concerned (mentioned twice)
- Limited amount of information on topic in a downloadable format
- Difficulty accessing a clinical library locally.

7 Conclusions

The VIVOS research team used semi-structured interviews supplemented by the Critical Incident technique to investigate use and perceptions of the CINAHL database and the 'evidence matters!' bulletins in South Humber.

The team found widespread interest in the adoption of electronic resources and motivation to improve IT-skills. However, current use of the CINAHL database is very limited. This may be due to a variety of reasons including perceived lack of need but several of those interviewed found that limited access to IT facilities and low confidence levels exacerbated the problem.

The database had few registered users in spite of initial efforts at promotion by the Resource Centre staff. There has, however, been little recent promotion and it is possible that a renewed attempt supported by a programme of skills-training may reawaken interest as increasing numbers of practices improve their IT facilities. Certain groups of practitioners appear to have easier access to computers, with PCs installed on General Practitioners’ desks, yet the CINAHL database is primarily aimed at nursing and allied-health staff and their access to IT equipment remains patchy.

The 'evidence matters!' bulletins are well-received and appear to be meeting their aim of providing topical locally-relevant information in a succinct and accessible format. Although one interviewee did suggest an electronic version of the bulletins most were satisfied with the current format and viewed the one-sheet approach favourably in terms of brevity, ease of circulation to colleagues and ease of storage for future reference.

The bulletins effectively promote the adoption of Evidence-Based practices and clinical effectiveness in the South Humber region by:

1. Increasing awareness of current 'hot topics'.
2. Ensuring that the topics covered are appropriate to local interests.
3. Providing access to good-quality Evidenced-Based research findings for a range of healthcare practitioners including those groups who often have limited access to IT equipment.
4. Encouraging discussion of Evidence-Based practice between team- or practice-members and across disciplines.
5. Providing an accessible reference-base of information that can be kept in whichever location suits the individual/team and is not reliant on IT facilities.
6. Giving useful contact details and references so that recipients can pursue any issues of particular interest.

In most environments surveyed there appeared to be an effective system for ensuring that all appropriate members of staff were able to read the bulletins (often through the
gatekeeping offices of the Practice Manager). However, comments from some interviewees revealed that these systems can go awry and that at times copies of 'evidence matters' can disappear before circulation is complete.

When pressed for suggested improvements, some participants said that they thought the bulletins could perhaps be more 'eye-catching' but most comments focused on topics of special interest that interviewees would like to see addressed and on urging the editorial team to keep the scope local. The needs of practitioners are constantly changing as practices develop their areas of interest and it is difficult for information providers to pre-empt trends. The 'evidence matters' team use various methods, including the identification 'hot topics' in the professional press and analysis of requests submitted, to the Resource Centre at the South Humber Health Authority, to keep the bulletins timely. One interviewee mused on whether it would be useful to encourage more feedback from users but concluded that it would be difficult to manage this process:

'...So I think it's important that the editorial board find out what the local issues are somehow, they probably need more feedback to do that but I don't know how they set that up. Because if you ask people they scratch around in their heads don't they and go for, maybe it could be about this or that, but they're not really, if you could actually get people to tell you as soon as that dropped into their minds...’ [PCC: 15]

The most common pattern of use of the bulletins appears to be: circulation and/or discussion with colleagues of relevant topics; where appropriate leading to review of practice; followed by storing of some/all issues for future reference.

In this study the survey sample contained only individuals named on the distribution list. From the data collected it is clear that the bulletins are circulated more widely but it would be interesting to investigate whether there are other practitioners in the area who are not currently on the list and yet would benefit from access to 'evidence matters'. Certainly the bulletins are viewed favourably by those who receive them, as illustrated by this plea from a health visitor:

'I'd like to see them more often.’ [HV: 17].
References


Appendix 1: Details of numbers and job categories of survey participants

<table>
<thead>
<tr>
<th>Interviewee job role</th>
<th>Number of participants</th>
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<tr>
<td>Community-based management</td>
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<td>Clinical Practitioner (Community Pharmacist)</td>
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<td>Primary Care Clinician</td>
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<td>Community Nurse</td>
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<table>
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<tr>
<th>Interviewee job role</th>
<th>Number of participants</th>
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<tr>
<td>Health-related Research Officer</td>
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<tr>
<td>Community Nurse</td>
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<tr>
<td>PAM</td>
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</tr>
<tr>
<td>Clinical Practitioner</td>
<td>1</td>
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<tr>
<td>Health Visitor</td>
<td>1</td>
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</table>
Appendix 2: Interview schedule: Evidence matters!

1. Please confirm your name and job title

2. Do you receive the bulletin Evidence matters??

[IF YES, GO TO QUESTION 3]

IF NO:

A. Do you know about the bulletins?

B. Would you be interested in receiving Evidence matters??

[GO TO QUESTION 10]

3. How long have you been receiving it for?

4. Do you find the bulletins informative?

5. How do you use the information contained in the bulletins?

6. Do the bulletins cover the topics you would find most useful?

[IF NOT: What topics would they like covered?]
7. Are there any enhancements you would like to see to the bulletins?

8. Do you keep the bulletins for your personal future reference?

9. Do you share the information contained in the bulletins with colleagues?

10. How else do you go about obtaining information on matters relating to evidence-based practice and clinical effectiveness?

11. Are you aware of any of your patients or clients having used the Internet to obtain health information?

12. How does this come into the consultation?

13. What do you think patients should have access to? [PROMPT, e.g. Cochrane?]

[THANK THEM FOR THEIR TIME]
Appendix 3 Interview schedule: CINAHL

1. Please confirm your name and job title.

2. Your name is on a list of registered users of the CINAHL database (Cumulative Index to Nursing & Allied Health Literature). Do you use the database?

3. (A) *If yes:* What have you used it for? [e.g. type of search conducted/type of information required.]

   (B) *If no,* Can we discuss your information needs in general please? [GO STRAIGHT TO QUESTION 7]

4. In general, how often do you access the database?

5. Please think back to the last time you used CINAHL:
   
   (A) What were you looking for the last time you accessed it?

   (B) How did you go about finding the information you were looking for?

   (C) How did you use the information you found?

6. Where do you access the database from [e.g. home/work – in own time? GO ON TO QUESTION 8]?

7. Critical Incident

   Please think back to an occasion when you needed to find information that you personally did not have (e.g. for personal education, research, patient-care, etc. and the occasion need not necessarily have involved using a computer).

   (A) What were you looking for?

   (B) and why?

   (C) What were you expecting to find?
(D) Where did you look?

(E) Did you need to ask anyone else? (Was there any particular reason you chose to look there or contact this group/person?)

(F) What did you find?

(G) Were you satisfied with what you found?

[PROBE – if at all possible try to obtain an answer to the following]

(I) How might that information be useful to you in the future?

8. Are you currently participating in any studying or training courses? [Where do they go for the information they need for the courses?]

9. Which journals do you normally have access to? [PROBE, Where do they have access to them? Do they share them with other people?]

10. Are there areas of your job where you have difficulty obtaining information about recent research to help with evidence-based decisions or with your own studies?

11. Have you ever received any training on the use of CINAHL?

(A) If yes: How do you feel about the training you received?

(B) If no: Do you think that you would benefit from receiving training?
12. Funding has recently been received to expand the CINAHL service to cover a range of full-text journals. If a training programme were developed to promote effective use of CINAHL and its new features, what would you like to see included in the programme [ask where they would like it to be held from choice]?

13. How do you think health-library staff could promote access to CINAHL in order to encourage other nursing and allied health staff to make use of it?

14. Are you aware of patients' use of the Internet to obtain information?

15. How does this come into the consultation?

16. What do you think patients should have access to? [PROMPT, e.g. Cochrane?] 

[THANK THEM FOR THEIR TIME]
Preliminary Report for Exeter (Devon) Site

Value and Impact of Virtual Outreach Services (VIVOS) Project

March 2001
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Abstract

The aims and objectives of the evaluation carried out by the VIVOS team for the Exeter (Devon) site focused on the use made of the Exeter Medical Library Website and the possible enhancements to the service. A stratified (and randomly selected) sample of 200 registered library users was sent a questionnaire, asking about a recent occasion when the EML Website had been used, the normal pattern of its use, and (if they had not used the Website) details about a recent information seeking incident. Response rate was 44%. Findings indicated that the EML Website is predominantly associated with information seeking for education and research purposes although these purposes are often linked with patient care. The Internet (in general) is becoming part of the ‘personal collection’ of information resources for many respondents. Respondents are often made aware of the existence of the EML Websites through personal contacts (Library staff and colleagues). The Website is used as a route to databases (Medline the most popular, followed by the Cochrane Library) and electronic journals. Demand for the latter is increasing. Many respondents used the EML Website at both home and work. Conclusions suggest that a flexible approach to promotion, support and training will be necessary, and further development is likely to involve interactive services.

Acknowledgements

The VIVOS research team is grateful to all the Exeter staff who participated in the evaluation of the use of the Library Web site. Without their participation in the survey work there would be no evaluation. The team is indebted to Re:source for funding the VIVOS project.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMED</td>
<td>Alternative Medicine (database)</td>
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<tr>
<td>ASSIA</td>
<td>Social Sciences database</td>
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<td>CINAHL</td>
<td>Cumulative Index to Nursing and Allied Health Literature</td>
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<td>HMIC</td>
<td>Health Management Information Consortium</td>
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<td>Professions Allied to Medicine</td>
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<td>PsychINFO</td>
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<td>VIVOS</td>
<td>Value and Impact of Virtual Outreach Services</td>
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1 Introduction

1.1 VIVOS aims/objectives

VIVOS was a one-year project running from February 2000 to the end of January 2001. It was conducted by the Department of Information and Library Studies, The University of Wales Aberystwyth and received funding from Re:source - the Council for Museums Archives and Libraries. The research team was based at Aberystwyth and collaborated with information professionals from Cornwall, Suffolk, Leicester, South Humber, Devon, North Thames and Salford and Trafford to assess the Value and Impact of Virtual Outreach Services. Development of research skills by the information professionals was seen as an integral part of the project.

The project had three main aims. The first two related to work carried out by health libraries to promote ease of access to information sources, particularly amongst primary-care and community staff. Outreach services should promote access to information resources for all healthcare staff and it is therefore important to establish a toolkit of methods for assessing the effectiveness of the services themselves and of associated training programmes. The VIVOS definition of ‘Virtual Outreach Services’ was fairly broad and covered any services that enable healthcare professionals to access pertinent information without physically coming into the library premises. In most cases this equates to electronic information sources, but at one VIVOS research site it involves the dissemination of a hardcopy digest of topical evidence-based issues.

The third aim of the project was suggested by the Council for Museums Archives and Libraries and involved investigating provision of health information to the public via the People’s Network. This proved challenging since the People’s Network is not yet established enough for an evaluation of its role in supplying health information to the public. The project team therefore decided to concentrate on locating schemes that are currently operating and on investigating healthcare professionals’ attitudes to provision of health information on the Internet.

The five original sites selected for participation in the VIVOS study were chosen because their outreach services were already established. This had the advantage that a certain amount of baseline data were already available but also gave the opportunity to investigate how to maintain the momentum of projects beyond the initial enthusiasm. The sites were also selected because they provided a variety of project types and environments. Two additional sites were included once the project was underway. A specific aspect of each project was identified for evaluation by VIVOS:

- **Exeter** The Website set up by Exeter Medical Library.
- **South Humber** The bulletin ‘evidence matters’, a regular digest sent out to local primary-care and community staff alerting them to topical issues in clinical effectiveness and evidence-based practice. This investigation also looked at access to the CINAHL database and the information-related problems faced by nursing staff in community settings.
- **Bury St Edmunds** The Pink Book developed by library staff at the West Suffolk Hospitals’ NHS Trust, originally as a directory of information for primary care clinicians.
- **Salford and Trafford** A three-day training programme to accompany the e-STABLISH project.
- **Cornwall** A database-training programme run for community staff by Cornwall Library Services.
- **Leicester** A feature of the Trent Futures project giving remote access to NISS Biomed databases through the issue of Athens passwords.
- **North Thames** Additional data analysis for an existing database-access project evaluation.
This report is part of a set of preliminary reports produced for each of the participating sites, primarily to give an early indication of the results of each site evaluation. Work is still continuing on the data analysis and the full project-report will discuss common themes and issues raised across the site evaluations. The final report will draw upon the collective experience of the information professionals from the sites, along with the observations of the research team, to produce a set of guidelines to help other information professionals wishing to develop their own services. The results of the investigation into attitudes towards health information on the Internet and provision of health information to the public will also be presented at a later stage.

1.2 VIVOS and the Exeter Medical Library Website

The reasons for development of the Website included the problems of providing 24 hour access (difficult without adequate security) and the fact that, since the construction of the new hospital, the library is now situated farther from many users. The library has always served GPs, and some GPs are active library users. The library staff believed that need had not decreased although physical use of the library appeared to be declining. With new plans for a Peninsula medical school being floated, the Website seemed to solve some of the access problems, users might have now, and in the future. Any likely relocation of a new library would disadvantage a large group of current users, and, with a hub and spoke method of service delivery being planned, access to the hub would have to be achieved primarily by electronic means. The library is now multidisciplinary, and serves practice staff as well as all NHS staff working in the Exeter Health Care area.

For VIVOS, the interest in evaluating this development was this ‘homegrown’ solution to serving the needs of staff in the community, and also the hospital. The management and funding structure in Exeter are slightly atypical to those of most hospital libraries, which has had its advantages (close links to the JANET network) as well as disadvantages (working with, but not always within the NHS). The library management/funding always has been slightly different to that for other hospital libraries in the Region. The library staff are employees of Exeter University, and the University then reclaims the salaries from the NHS.

The Website developer, Jill Maxted, has been entrepreneurial in approach, teaching herself HTML, and gradually developing the Website with little external assistance. GPs seem to use the Website and email because it is convenient, and GPs have Internet access and email either through their practice or from home. They are particularly interested in registering for full-text access to e-journals. Registration and password administration is accomplished and managed electronically. The Medical Library is administratively part of the Exeter University system and the university catalogue includes the Medical Library books. The University library management system is INNOPAC with a Web based interface.

The Web site started out with a Guide to the Library and a link to the catalogue put on the Web. Part of the problem in the Medical Library is the provision of different levels of service for NHS and University users – the NHS users cannot, for example, be put on the University circulation system so the issue is still manual, with separate registration. There are some people with honorary University appointments, research staff – complications of all sorts and further exacerbated by the unwillingness of the Trust to establish an email system for NHS staff on the Trust intranet (the Trust is shortly going to introduce a limited email system for internal use). For the Library, use of email would be the obvious – and easiest – method of publicising new services and service changes to the user community.

Development of the Web site has been gradual, responding to needs as they arise. The Web site was put on the Internet as a way of providing some access for NHS staff who had (for example) home based or stand-alone work/practice based access to the Internet, and Exeter University agreed to host it. Now the Trust have it mirrored on their Intranet and Jill has been invited on to the ‘intranet’ committee in the Trust. NHS users are now
encouraged to set themselves up with Web-based email (hotmail) to overcome the problems of the lack of nhs email addresses.

Resources featured include:

- Journal holdings – and this is now a Union List, including journals for St Loye’s School of Occupational Therapy plus the nursing journals of the Exeter-based University of Plymouth's Institute of Health Sciences, plus those journals held in the libraries of the Exeter and District Community Trust and the North and East Devon Health Authority. Details of Departmental collections in the Trust are also included.

- Hotlinks – Jill adds to these resources regularly. To some extent this has grown a bit like Topsy but user queries in the Library have prompted most of the links now put in place. Responses to requests are thoroughly evaluated and the resulting ‘good sites’ put up on the Web site. The Parkinson’s Group is a presentation that was done as part of training – they had intended removing this after the event but the Group requested that they keep this up and have put in a link from their site as well.

- Access to databases – two routes offered – Miron which is NHSnet only, and Optonet (part of the Regional consortium purchase deal). The latter allows home-based access. Usage figures are available on the SW Region pages, also available via the Library Web site, and these show that home based usage is increasing. [NOTE: Since the VIVOS survey was conducted, access to the databases has become managed by HCN and is simply known as the HCN suite of databases available either over the NHSnet or over the Internet.]

- Electronic textbooks – this is being developed with an eye on the future medical school needs as well.

- Electronic journals – the password system is preferred as arrangements that work on IP address can only really be used within the NHS network.

Patients can of course access the site as well, if they know about it, although the Library has no indication how many health professionals might suggest that patients consult the site for further details. The NHS walk-in centre in the city centre do have it bookmarked and refer patients to it, and the Website is on the Health and Medicine section of the city’s "This is Exeter" site. The Library policy is to refer the general public to the section if they phone or call in for help.

The Library Bulletin is emailed out to those users who have email addresses (registration is done on an Access database) but is also put on the Web site for those who don’t. The registration does include details of user passwords for the various e-journal publisher arrangements. At the time of the survey the bulletin could only be emailed to around 350 users out of the 1400 currently registered as they were the only ones with email. If they need access to journals or databases from home the Library staff help them set up an internet email account so that they can administer their passwords. The bulletin contains details of new resources added to the Web site, new books added to stock, links to major, recently released government reports and similar resources.

The Web site is increasingly used in training, and there are links to appropriate tutorials.

As far as the technical aspects are concerned Jill does the preparation in HTML, though Front Page was used for the development of a form for online library registration which was then linked to the email so users can register without actually needing to come into the library. The site search feature used Atomz (Atomz.com) software. Some money from Culyer funding helped provide some money for library assistant time, which helped to provide the necessary time for the professional staff to extend their skills in management and development of the Web site.

Usage patterns suggest that researchers and general practice still tend to be the heaviest users. The ‘Internet’/Univ network Web accesses are around 2 to 2 and a half times the number of Trust intranet Web accesses though the problems of what counts as a Web
access remains a bit problematic. Figures started at 71 (Feb 99) and are now around 750-850 (Internet/Univ network) accesses per month with around 200-350 accesses for the Trust (there is some variability in the latter figures, and the counter does not always record accurately).

2 Methodology

2.1 Sampling
The sample was randomly selected from a list of User numbers supplied by the librarian. It was stratified to include job categories of: doctor, nurse, PAM and Other, identified from the lists supplied by the librarian. The representation of job types in the questionnaire sample reflects the representation of each type in the registration lists (88 doctors/30 nurses/26 PAMs/56 others), making a total sample size of 200.

2.1.1 Response rate
Of the 200 questionnaires sent out, 87 replies were received, giving a response rate of 44%. No follow-up was possible.

2.2 Methods employed
As the Exeter site was an additional site to the project there was no time to arrange interviews. The approach agreed with the site staff was a questionnaire survey (Appendix 1), covering the following aspects:
- frequency of use of the Website
- characteristics of use (access location, time of use, use of electronic journals)
- databases accessed
- example of recent use (purposes and type of use) OR (if EML Website had not been used) details of another recent information-seeking incident
- satisfaction with EML Website
- IT training experience, and perceptions of competence in IT

2.3 Chronology of site survey
The first discussion with the Exeter site staff was held in mid September and the questionnaire agreed in October. The questionnaires were despatched in late October / early November 2000. Unfortunately there was no time for a follow-up to chase non-respondents, or extend the survey to include interviews. Quantitative data were entered into SPSS and open ended comments were entered on to an Excel database for further collation with the analyses from SPSS.

2.4 Navigation of report
The structuring of the report corresponds to the main themes which emerged from analysis of the Exeter site data (also allowing for comparison with data obtained from other sites.

Following this interim report, there will be formal discussion of the preliminary results with the site librarians to further validate the findings prior to preparation of the final report.

3 Work environment
As there were no interviews at this site there was no opportunity to capture the informal comments which indicated how information behaviour might be changing in response to policies and initiatives at local or national level. Many of the staff surveyed will be involved in the development of the Peninsula Medical School and this development will have an effect on the training environment they will offer students, but this
development was at an early stage at the time of the VIVOS survey work. What was of particular concern to the Library staff was the need for virtual access to information services, and this is reflected in the comments about barriers to information seeking.

3.1 Information barriers

More than ever before, practitioners require timely and accurate information yet they still face constraints on meeting that goal. Various information barriers seemed apparent, and the need for various points of access seemed evidence from their responses. Many did not rate their IT skills particularly highly.

3.1.1 Use of the Exeter Medical Library (EML) Website

Of the respondents, 61 (70%) had accessed the EML Website, and 26 had not. Overall, therefore, 31% (61/200) of those surveyed indicated that they had used the Website.

3.1.2 Modes of access to the EML Website

Most respondents accessed the Website over the Internet (25 respondents (42.4%), or a combination of both the Internet and RDE (Royal Devon and Exeter Hospital) Infoweb (24 respondents (40.7%). Only 9 respondents (15.3%) reported sole use of the RDE Infoweb. However, most respondents seem to wish some choice and flexibility, and one respondent was unable to say which was the preferred location for them (primary care or acute trust). The blurring of the boundaries between home and work was also evident in the responses to the question concerning usual time of access. Nearly half the respondents (29, 47.5%) usually accessed the Website in working hours, nearly one third (18, 30.5%) indicated that the balance was about equal (working hours and own time) and 18 (22%) of respondents indicated that they usually accessed the Website in their own time.

<table>
<thead>
<tr>
<th>Access location</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute trust department/ward</td>
<td>28</td>
</tr>
<tr>
<td>Home</td>
<td>26</td>
</tr>
<tr>
<td>Educational establishment</td>
<td>11</td>
</tr>
<tr>
<td>Community based workplace</td>
<td>8</td>
</tr>
<tr>
<td>Primary care practice</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 1: Access location

3.1.3 Problems of library access

A minority (35) of respondents claimed that it was difficult to get to the library itself, and the twin problems were location and lack of time. Perceptions vary of course – 10 minutes walk is an eternity for some:

- ‘wrong side of hospital and no free time to get there’
- ‘time constraints really coupled with parking’
- ‘have two children under four and very little childcare available out of work hours’
- ‘I live out of town so need to make a special journey to the library’

3.1.4 Perceptions of IT-skills training needs

Under half the respondents (39/87, 44.8%) indicated that they had received formal training in basic IT skills, and just over half (48/87, 55.2%) indicated that no such training had been received. Their perceived assessments of their own competence indicated that the majority considered themselves just competent, but not very competent (Table 2).

<table>
<thead>
<tr>
<th>IT skills rating</th>
<th>Frequency (percentage of respondents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very competent</td>
<td>15 (17.2%)</td>
</tr>
<tr>
<td>Competent</td>
<td>38 (43.7%)</td>
</tr>
<tr>
<td>Basic keyboard skills</td>
<td>33 (37.9%)</td>
</tr>
<tr>
<td>How do I turn it on?</td>
<td>1 (1.1%)</td>
</tr>
</tbody>
</table>
Table 2: Perceived competence in IT skills

4.0 Patterns of EML Website use

Analysis focused on the popularity of particular databases, and the route by which these were accessed, attitudes towards use of electronic journals, and the reasons for choosing the EML Website as an information source. Perceptions of usefulness are often limited by a lack of awareness of the services on offer. This is possibly a consequence of infrequent use, coupled with the difficulties the Library has in promoting the service through email lists.

4.1 Use of databases

Services that were available through the Website at the time of the survey included access to databases (by two routes, Miron via NHSnet and Optonet via the Internet) and electronic journals. Medline remains the most popular database (by either route, or through PubMed), followed by the Cochrane Library, EMBASE, and CINAHL. It is quite possible that many respondents could be unsure which route they used, particularly as many use the service at both work and home.

<table>
<thead>
<tr>
<th>Database (Miron)</th>
<th>Frequency</th>
<th>Database (Optonet)</th>
<th>Frequency</th>
<th>Database (other)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Via NHSnet</td>
<td></td>
<td>via Internet</td>
<td></td>
<td>PubMed</td>
<td>32</td>
</tr>
<tr>
<td>Medline</td>
<td>34</td>
<td>Medline</td>
<td>36</td>
<td>Cochrane Library</td>
<td>23</td>
</tr>
<tr>
<td>EMBASE</td>
<td>12</td>
<td>EMBASE</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CINAHL</td>
<td>10</td>
<td>CINAHL</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>British Nursing Index</td>
<td>8</td>
<td>British Nursing Index</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PsychInfo</td>
<td>6</td>
<td>PsychInfo</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMED</td>
<td>4</td>
<td>AMED</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASSIA for Health</td>
<td>0</td>
<td>ASSIA for Health</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMIC</td>
<td>0</td>
<td>HMIC</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Databases accessed

4.2 Electronic journals

Although a minority of respondents (23/60, 38.3%) accessed the electronic journals regularly, a majority (45/58, 77.6%) claimed that they would make more use of this facility if more titles were available. Regular use was made of the following titles:

- Lancet
- BMJ
- New England Journal of Medicine
- JAMA (to a lesser extent)

with other specialist clinical journals (e.g. American Journal of Physiology, Blood) mentioned once each.

Respondents listed a wide variety of journals they would like online and the message seems quite clear

- ‘full versions if possible’
- ‘as many as possible’
- ‘not sure what’s there, but oncology and haematology journals would be useful’
- ‘nursing journals’
- ‘midwifery journals”
- ‘any journals in my subject area’
- ‘the journals in the library, I would prefer if they were online’.
When asked how inconvenient print-only and library based access was, only just over half (22/43, 52.4%) did admit that they would be inconvenienced if their favourite journals were only available in print format in the Library. Reasons cited for inconvenience included (in almost equal measure):

- location of the library/difficult to access (and weather – ‘it’s always raining’)
- cost of photocopying
- time constraints

Comments indicated that while the respondents might not be seriously inconvenienced ‘No, but I probably wouldn’t read it’ there are great attractions to instant access: ‘it’s great to get the full text online’, particularly when ‘this allows working from home’ and ‘I might look at them at 4am-ish when the library is unavailable’.

### 4.3 Reasons for using the EML Website

The main reasons for using the EML Website are for research and educational purposes. The need for current awareness confirms the importance of research purposes, and many staff have teaching commitments (Table 4). Particular features valued include the electronic journals and the clinical databases. Possibly the EML Website is (somewhat unusually for many HE LIS Websites) viewed as a gateway to the Internet by some. Content is valued above the actual convenience of access.

<table>
<thead>
<tr>
<th>Purpose of use</th>
<th>Frequency</th>
<th>Access reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>31</td>
<td>Electronic journals</td>
<td>32</td>
</tr>
<tr>
<td>Current awareness</td>
<td>20</td>
<td>Clinical databases</td>
<td>30</td>
</tr>
<tr>
<td>Personal study</td>
<td>20</td>
<td>Gateway to Internet</td>
<td>27</td>
</tr>
<tr>
<td>Patient care</td>
<td>17</td>
<td>Library access (home/work)</td>
<td>27</td>
</tr>
<tr>
<td>Teaching purposes</td>
<td>15</td>
<td>Access to catalogue</td>
<td>26</td>
</tr>
<tr>
<td>Passing on to others</td>
<td>7</td>
<td>Access to journal titles</td>
<td>22</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>Out-of-hours access</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 4: Reasons for using EML Website and popular features of the site

### 4.4 Enhancements to the EML Website

Of those who did comment on the question regarding desirable enhancements, several simply noted that they could not think of any enhancements, or had little experience on which to base comments. More specific suggestions included:

- ‘ordering books and articles online for borrowing or photocopying’
- ‘online email directory’
- ‘links more clearly displayed – I prefer an alphabetical list’
- ‘a what’s on page for local medical meetings’
- ‘librarian’s choice guide – local recommendations such as we have found this the quickest or easiest way to search for..’
- ‘direct links to nursing Websites’
- ‘maybe offer slots for one to one teaching at the library on how to use it’

The expectation is therefore one which emphasises the look and feel of many commercial Websites with a news section and some feedback allowing interactive use and comment.

### 4.5 Promotion and awareness of the EML Website

As email promotion of the Website is very limited (Section 1.2) it is not altogether surprising that many respondents (34) found out about the EML Website through the Library staff directly. Useful times for library staff to provide this information include registration, and personal contact ‘told by library staff’ is an important means of recommendation. Some found out via the workplace through colleagues and meetings (7), others via an email message or Website link (6), while only one cited a library flyer.
Suggestions for improving promotion include seminars or training workshops (7), dissemination of news and changes in the services or newsletters (10).

Many of the desired services may already exist in some shape or form, and that might not be apparent to the infrequent user. Current awareness has to be ‘pushed’ rather than pulled: 25 respondents used the EML Bulletin as a current awareness tool if emailed to them but only 4 did so themselves from the EML Website, and 56 did not use the Bulletin as a current awareness tool. The majority (58 respondents) were not aware of the existence of the EML Users’ Group, and only around half (44/87) were aware that they could email staff for assistance with their queries.

5 General patterns of information behaviour

Those survey participants who were unable to comment on the EML Website were requested to provide details of a recent information seeking incident, partly to check whether they formed a different group of users to those who used the EML Website, and partly to assess what their patterns of information behaviour were.

Many participants chose to complete this section even if they had completed the earlier sections, and the results must therefore be viewed as a picture of general information seeking behaviour. Given that only a minority use the EML Website very frequently, it seems fair to view the results in this light. The pattern of purposes for this group suggests the EML Website is primarily associated with research purposes, whereas routine information needs are more strongly associated with direct patient care. Personal study and current awareness are ranked equally (joint 2\textsuperscript{nd}/3\textsuperscript{rd}) but the rank positions of patient care and research are reversed.

<table>
<thead>
<tr>
<th>Purpose of information need (general)</th>
<th>Frequency</th>
<th>Purpose of use (EML Website)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient care</td>
<td>28</td>
<td>Research</td>
<td>31</td>
</tr>
<tr>
<td>Personal study</td>
<td>16</td>
<td>Current awareness</td>
<td>20</td>
</tr>
<tr>
<td>Current awareness</td>
<td>15</td>
<td>Personal study</td>
<td>20</td>
</tr>
<tr>
<td>Research</td>
<td>8</td>
<td>Patient care</td>
<td>17</td>
</tr>
<tr>
<td>Teaching</td>
<td>7</td>
<td>Teaching purposes</td>
<td>15</td>
</tr>
<tr>
<td>Passing on to others</td>
<td>2</td>
<td>Passing on to others</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 5: Reasons for needing information (routine versus EML Website purposes)

What was surprising was the popularity of the Internet as a source of information for routine purposes, though it is not clear whether access was obtained via the EML Website or not (Table 6). The ‘other sources’ cited predominantly included Websites or other electronic sources, too.
<table>
<thead>
<tr>
<th>Resource used</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet (e.g. using a search engine such as Yahoo, AltaVista)</td>
<td>26</td>
</tr>
<tr>
<td>Personal collection</td>
<td>23</td>
</tr>
<tr>
<td>Department/ward/practice collection</td>
<td>20</td>
</tr>
<tr>
<td>Colleague</td>
<td>14</td>
</tr>
<tr>
<td>Visit to local health library</td>
<td>7</td>
</tr>
<tr>
<td>Drug information service</td>
<td>6</td>
</tr>
<tr>
<td>National library service (e.g. BMA)</td>
<td>4</td>
</tr>
<tr>
<td>Patient information service/helpline</td>
<td>4</td>
</tr>
<tr>
<td>Other (including EML Website, Medline via BMA, RCGP site, Internet access to journal, University main library, Department of Health Website)</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 6: Sources of information used

Reasons for using the Internet are associated with (in order of frequency of citation):
- Patient care / Personal study (both 10)
- Current awareness (8)
- Research (7)
- Teaching (4)

Patient care purposes are associated with (in order of frequency of citation):
- Department/ward/practice collection (13)
- Colleague / Internet search (both 10)
- Personal collection (9)
- Drug information service (4)
- Other (4)

The sample size is very small but what seems to be happening is that the Internet is fast becoming part of the ‘personal collection’ for many respondents. The reasons for using the Internet are often educational or research linked to patient care.

Time pressures, and the ongoing nature of some information needs are indicated by the number claiming that their searches were only partially successful (26/52), with just under half (24/52) claiming they had obtained all the information they required, and four of the respondents to the question claiming that they were unsuccessful.

6 Conclusions

The limitations of a purely questionnaire based survey are apparent in the various intriguing questions raised in the analysis. It would, for example, be useful to examine in more detail the pattern of Internet usage for the group of respondents who appear to have incorporated searching the Internet into their usual information seeking routines. There was unfortunately no time to follow-up the questionnaire survey.

The findings indicate that the library’s plans to provide access to electronic resources via the Website are justified. For example, the demand for access to electronic journals will increase markedly rather than decrease, although the users might in fact be no more than five to ten minutes walk away from the library. Downloading a pdf file at home or at the desktop in work is judged far more convenient. Many respondents access the Website at both home and work.

Use of the EML Website is primarily associated with educational and research needs, although these are often linked with patient care. Routine information seeking in practice is more closely associated with patient care.

The users are increasingly demanding interactive services (orders for ILL loans, training, news of service developments) on the Website. Some of the services that the Library
provides, such as database services may require some training to ensure that use is effective and efficient, and the perceptions of the users that their levels of competence in IT generally hover between competent and basic keyboard skills suggests that training will be necessary. On the other hand, use among a majority of potential users may be infrequent, suggesting that a flexible approach will be necessary.

Awareness of services appears limited, reinforcing the need to ensure that new services are advertised widely, and for non-University staff the lack of a Trust email address is a disadvantage. Personal recommendation either through a colleague or through advice from a member of the Library staff does seem to work, and the value of ‘word of mouth’ cannot be discounted.

It is difficult to predict how further development of the National electronic Library for Health will affect the development of the EML Website and the services offered through it. What is clear is that a growing number of users turn automatically to search engines when they use the Internet and the EML Website may have to offer ‘value-added’ features to ensure that the user community make efficient and effective use of their searching time.
Appendix 1: Questionnaire

YOUR USE OF THE EXETER MEDICAL LIBRARY WEBSITE

1. Have you ever accessed the Exeter Medical Library (EML) Website? (Please tick in the [ ] as appropriate)
   YES [ ] 1
   NO [ ] 2

If your answer to Question 1 is YES, please go to Question 2.
If your answer to Question 1 is NO, please go to Question 14.

2. How did you first find out about the Website?
   ……………………………………………………………………………………………

3. How do you access the Website?
   Via the Internet [ ] 3
   Via the RDE Infoweb [ ] 4
   Via both [ ] 5

4. From which location do you usually access the Library Web site? (Please tick all boxes that apply)
   From home [ ] 6
   From primary care practice [ ] 7
   From acute trust department/ward [ ] 8
   From educational establishment [ ] 9
   Other, e.g. community-based workplace (please specify) ……………………………………………………………………………………………

5. When do you usually access the Website?
   In working hours [ ] 10
   In own time [ ] 11
   Both [ ] 12

6. Do you access any of the full-text electronic journals available via the EML Website on a regular basis? (If yes please list titles)
   YES [ ] 13
   ……………………………………………………………………………………………
   NO [ ] 14

7. Would you make more use of the electronic journals if more titles were available?
   YES (please state the titles you would like to see added) [ ] 15
   ……………………………………………………………………………………………
   NO [ ] 16

8. If you have listed journals in your answer to Question 7, would you be inconvenienced if these journals were available at the Library in print form only?
   YES [ ] 17
   NO [ ] 18
   If YES, please give the reasons for your answer ……………………………………………………………………………………………

9. Please tick any clinical databases you have accessed through the Website
<table>
<thead>
<tr>
<th>Via NHS Net (MIRON VERSION)</th>
<th>Via the Internet (OPTONET VERSION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medline</td>
<td>Medline</td>
</tr>
<tr>
<td>EMBASE</td>
<td>EMBASE</td>
</tr>
<tr>
<td>AMED</td>
<td>AMED</td>
</tr>
<tr>
<td>PsychINFO</td>
<td>PsychINFO</td>
</tr>
<tr>
<td>CINAHL</td>
<td>CINAHL</td>
</tr>
<tr>
<td>British Nursing Index</td>
<td>British Nursing Index</td>
</tr>
<tr>
<td>ASSIA for Health</td>
<td>ASSIA for Health</td>
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<tr>
<td>HMIC</td>
<td>HMIC</td>
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<tr>
<td>PubMed</td>
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<tr>
<td>Cochrane Library</td>
<td></td>
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<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>(please specify)</td>
<td></td>
</tr>
</tbody>
</table>

10. Please think back to the last time you accessed the EML Website. How did you use the information that you found? (Please tick all boxes that apply)

- For patient care
- For current awareness purposes
- For teaching purposes
- I passed it on to someone else
- For research purposes
- For personal study
(please state where you are studying and qualification you are working towards)

Other (please specify)

11. Why do you use the EML Website? (Please tick all boxes that apply)

- To access electronic journals
- To access clinical databases
- To access the library catalogue
- To access the library's list of journal titles
- As a gateway to Internet-based resources
- To access the library from a computer at your home or workplace
- For out-of-hours access to the library's resources

Other (please specify)
12. Are there any enhancements to the Website you would like to see?
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

13. Can you suggest how the EML could effectively promote the Website to your colleagues?
................................................................................................................................................
................................................................................................................................................(Now please go on to Question 15)

14. Please think back to a specific occasion during the last week or so when you needed to find information that you personally did not have. (Please complete this question if you answered NO to Question 1)

(A). On this occasion I needed the information for (Please tick all boxes that apply):
For patient care [ ] 50
For current awareness purposes [ ] 51
For teaching purposes [ ] 52
I passed it on to someone else [ ] 53
For research purposes [ ] 54
For personal study [ ] 55
(please state where you are studying at and the qualification you are working towards)
...........................................................................................................................................
Other (please specify) ............................................................................................................

(B). On this occasion I used the following resources (Please tick all boxes that apply):
Department/ward/practice collection (e.g. reference book) [ ] 56
Patient information centre or helpline [ ] 57
Personal collection (books, journals, etc.) [ ] 58
Colleague [ ] 59
Visit to local health library [ ] 60
National library service (e.g. BMA) [ ] 61
Drug information service/hospital pharmacy [ ] 62
Internet (e.g. using a search engine such as Yahoo, AltaVista) [ ] 63
Other (please specify) ............................................................................................................

(C). On this occasion I was
Successful in obtaining all the information I needed [ ] 64
Partly successful (e.g. information incomplete, ran out of time) [ ] 65
Unsuccessful [ ] 66
(Now please go on to Question 15)
15. Do you use the EML bulletin as a current awareness tool?
YES from my email [ ] 67
YES from the Website [ ] 68
NO [ ] 69

16. Are you aware of the EML Users' Group for anyone supplying the Library with their email address?
YES [ ] 70
NO [ ] 71

17. Are you aware that you can email EML staff for assistance with queries?
YES [ ] 72
NO [ ] 73

18. Is it difficult for you to get to the Exeter Medical Library itself?
YES [ ] 74
NO [ ] 75
If yes, please explain why
...........................................................................................................................................
...........................................................................................................................................

19. Have you ever received any formal training in basic IT skills?
YES [ ] 76
NO [ ] 77

20. How would you rate your IT skills?
Very competent [ ] 78
Competent [ ] 79
Basic keyboard skills [ ] 80
How do I turn it on? [ ] 81

21. Have you ever received guidance from EML staff in accessing internet-based healthcare resources (e.g. clinical databases, electronic journals, online library catalogues, etc.)? (If yes, please specify)
...........................................................................................................................................
...........................................................................................................................................

Thank you for taking the time to complete the questionnaire. Please return it to us in the Freepost envelope supplied. If you would like further information about the EML Website or other library services please contact Exeter Medical Library: MedLib@exeter.ac.uk
Project Access

Value and Impact of Virtual Outreach Services (VIVOS) Project

February 2001
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Introduction

Project Access was a pilot project providing access via the Internet to the Ovid Biomedical Data Service (BIOMED). It included Medline and Cinahl databases, full text of 84 biomedical journals and also (from November 1998) access to EBMR (Evidence Based Medicine Reviews). The service was offered for a trial year from June 1998 to May 1999 at 6 NHS organisations in the CELEC area (Central & East London Education & Training Consortium) and was extended for another year (i.e. to May 2000). The organisations that took part were:

East London & the City Health Authority
Great Ormond Street Hospital NHS Trust
Homerton Hospital NHS Trust
Newham Healthcare Trust
Royal Hospitals NHS Trust
University College Hospitals NHS Trust

All NHS staff at these organisations were eligible to register and use the service (although restrictions were placed on who was eligible by two of the organisations). At the time of the Interim Report (February 1999) 617 staff had registered for the service. Of these, the largest groups were: Junior Doctors (24%), Nurses/Midwives (22%), PAMs (16%) and Consultants (12%). By October 1999 there were 1301 registered users.

A survey of registered users of Project Access was carried out in November 1998. A total of 121 questionnaires were returned, equating to 20% of registered users. The majority of information pertains to this evaluation, unless otherwise stated.

Survey results

2.1 Searches and Databases

In the three month period from October-December 1998, a total of 2271 searches were carried out using Project Access and a total of 1541 full text documents were viewed. A year later between October-December 1999, there were 4507 search sessions and a total of 3973 full text documents viewed, roughly double the amount from the same period the previous year. This can be linked to a doubling in the numbers of registered users (see above). In February 2000, the average number of sessions per user was 9, which equates to using the service once every 2 months, a figure which is relatively low given the frequency of use stated in the questionnaires (see below).

The majority of searches made during October-December 1998 utilised the full text Core Collections databases (45%) whilst Medline was the second most popular database with 39% of the searches. By February 2000, 71% of all database searches were in Medline. In the questionnaire in November 1998, over a third of respondents said they had used EBMR which was only introduced into Project Access in November 1998.

2.2 Using the service

The majority (54%) of questionnaire respondents used the Project Access service 'about once a week' or 'more than once a week' with 70% of Junior Doctors and 66% of
Consultants who replied used it this frequently. Combined with this, 80% of the respondents had used the service out of ‘office hours’, and 60% had used the service at home. Further, all of the Primary Care respondents had used Project Access at home, compared with 33% of Consultants. These high figures for working out of hours or at home stem from the convenience of the service (24-hour access), which was highlighted by additional comments given in the questionnaires. When asked what they liked about the service there were 27 mentions of availability of the service. For example:

‘The convenience of being able to access the information from home particularly out of hours’ [Nurse/Midwife]

Users also commented that they found it easy to use, and felt that it was a very useful resource. Many comments focused on the quantity and timeliness of the information provided with it also being cited as an excellent tool for research. A total of 70% of the respondents said that Project Access was a better method for finding information than previous methods (such as CD ROMs in the library). Only 9 users said that it was worse than other methods of retrieving information. The most common reasons for its popularity when asked what they liked about Project Access were: usefulness (31 mentions), availability (27 mentions), ease of use (18 mentions), and the fact that it is free (16 mentions). Some of these factors may be seen as motivators: if a service is easy to use, easily available and perceived to be useful, people are likely to use it again.

Further, 83% of respondents said that Project Access had enabled them to acquire information they would otherwise not have seen. This may be due to access to full text articles, which was listed 11 times as another advantage of the service.

Several positive comments (8) were made as to the number and range of journals available, but in total more people (14) requested access to other journals and more databases.

Another problem with Project Access was the speed of service. This was mentioned 27 times by respondents when asked what they disliked about the service, and 53% of the respondents had experienced some problems in using the service, notably technical hitches or service interruptions. A typical comment made about the disadvantages of Project Access was:

‘the continuous problems with speed and service interruptions’ [LIS staff]

Some also felt that it was not very user friendly, but, an equal number of comments (8) were made that they liked Project Access because it was user friendly. Some people felt that there needed to be more training, and perhaps a guide to using the service. One such response was:

*Just great if I knew exactly how* [Nurse/Midwife]

Others wished to see improved access to terminals in order to be able to use Project Access. In some of the site locations there are problems associated with access to the Internet and this may be one reason why home use is very high.

A total of 21% of replies stated to have never used the service or to have only used it once. Of these, issues such as access to a PC and lack of time to learn or access such a service were mentioned, as was ‘no need to use yet’. Given the positive nature of the majority of the comments, it seems that Project Access’ strengths could be a spur for someone to try the service, if it was publicised more, even if they perceived that they didn’t need to use it.

On balance, the majority of respondents were very happy with Project Access and wished the service to continue, and 15% even stated that they had no dislikes of the service. 70%
of the uses thought the service was ‘very useful’, and combined with the 29% who said it was ‘useful’ this provides strong endorsement for Project Access. Some typical comments sum this up:

It is the best way I have come across to find the useful information when you need it [Junior Doctor]

Useful and informative having a dedicated database for healthcare professionals [Nurse/Midwife]

Being able to access data and information at my leisure in my own time at home [PAM]

Easy inexpensive access to info which allows you to keep up to date hence improving patient care [Primary Care].

When the comments are analysed by profession variations occur. The library staff tended to focus on the information advantages such as range of databases and full text availability, whilst Junior Doctors and Nurses/Midwives stressed the availability aspect most. PAMs and Nurses/Midwives appreciated the usefulness of the resource, whilst Consultants mentioned factors such as the ease of use, accessibility and availability of the service. With regard to dislikes, Junior Doctors tended to stress the slow speed of the service, as well as access to PCs and the range of journals provided. Nurses/Midwives and PAMs emphasised that it wasn’t very user friendly and more training was needed.

Site Administrators felt that lack of skills, poor performance and poor access to the Internet were important issues for the future. They were worried that searches were not being carried out as efficiently as possible and noted that users rarely asked for help. There have also been some IT and management problems at a few of the sites which had hindered the initial take-up of users for Project Access, or caused confusion amongst users.

3 Impact

Project Access can be seen to be benefiting libraries with a more positive profile, bringing in more users to some extent, and providing a value-added extension to the library services. It is also regarded as a valuable resource by health professionals. Many users value electronic access to information resources which enable them to work with greater flexibility, such as at home or out of office/library hours. This has a positive impact on the amount of research undertaken by health professionals and improves clinical governance. For people working non-regular hours (often quite high in the health sector) 24-hour access to information and research is especially beneficial.

Issues of training and support are essential to the success of networked electronic services, and if users are to capitalise on the resources available and utilise the service most efficiently and effectively. The need to work closely with IT departments is also highlighted by Project Access to avoid communication or managerial problems from developing and hindering projects. Combined with joint purchasing decisions, services such as Project Access may reduce library spending on journals.

In summary, two responses perhaps reflect the overall feeling of the users:

I think the idea of the service is excellent [Junior Doctor]

I think that it was an innovative way for CELEC to support the continuing professional development of a large number of staff. I hope that it can continue past the trial phase [PAM]

Information taken from:
