

Community Pilot Project Report

DEVELOPING KNOWLEDGE MANAGEMENT STRUCTURES IN SUPPORT OF BEST PRACTICE IN PATIENT CARE WITHIN A HEALTH COMMUNITY

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AN INTRODUCTION

Quality assurance in clinical decision-making relies on access to up-to-date, authoritative clinical and management information. A wealth of high quality external information is now available on the internet via sites such as Doctors.net.uk and via various databases, such as CINAHL, Medline, Cochrane, Best Evidence and HMIC but is only accessible to those who have the skills to effectively search for and retrieve this information.

A need to provide integrated access to these information sources was identified within GP and Dental practices affiliated to Sandwell Healthcare NHS Trust. Also there was a need to support healthcare staff in developing the skills, understanding and approaches which underpin the development of a knowledge management culture, thus helping to embed knowledge management processes into working practices.

A successful bid to the Black Country Training and Education Consortium by the Trust secured funding for a five month pilot project whose aim was:-

'To extend the benefits of effective knowledge management processes in support of patient care to six medical centres/clinics within Smethwick PCG and three dental practices.'

Project Objectives

- To build on the findings of the pilot project and engender a culture of information sharing to facilitate effective decision-making within the target group
- To strengthen community ↔ acute trust information-sharing structures
- To undertake an IT audit within the target group to assess the viability of training
- To undertake a Training Needs Analysis for appropriate staff within the target groups
- To extend the local knowledge base by providing staff with ICT and Information skills through a structured, which will include training in basic computer skills, use of Path.Finder (XML version)¹, key Internet sites, eg WISH² databases (CINAHL, Medline, Nursing Collection, Cochrane, Embase etc), Doctors.Net, etc as appropriate
- To evaluate the effect of knowledge management processes on the target group by in-depth interviews with all staff who have undertaken training, feedback questionnaires and skills analysis processes.

The project involved a Project Manager and 2 part-time trainers, an IT trainer to deliver the basic ICT and internet skills training and a Librarian seconded to the project to deliver the clinical database research training.

¹ Not available in time to include in this project.

² WISH stands for West Midlands Information Service for Health. It consists of a collection of databases, such as MEDLINE, CINAHL, Best Evidence, the Nursing Collection, AMED and Cochrane. WISH has been funded by the West Midlands Regional Library Unit for use by nurses, midwives and PAMS groups within the region. It is a free resource and as it is accessed via the Internet can be used from home, library or work. It is not, however, available for GPs to access.

This report aims to show how the project set out to achieve its objectives and will focus on:

1. The Methodology employed
2. The Project Analysis – a quantitative and qualitative analysis of training
3. The Feedback – a critical look at the issues raised
4. Conclusions, Recommendations and Progress - taking knowledge management forward within Sandwell

METHODOLOGY

Following the success of the Trust pilot, the methodology of focus groups and targeted questionnaires was employed as the principal means of acquiring the information and, ultimately, of evaluating the success of the project. This process is shown in Figure 1 below.

Smethwick PCG was chosen as the focus of this project and a project outline was sent to as many Smethwick GP practices as possible in order to involve both large and small practices. This followed initial telephone calls to ascertain the Practice Managers' interest in the project. In all 12 practices were invited to participate. The Dental practices were a little more difficult. Only 3 practices were identified as having any interest in the project and, following receipt of the project outline, only 1 of those practices agreed to a meeting. The other 2 did not see a benefit to their involvement.

Initial meetings were held with GPs and Practice Managers from 6 practices and the Practice Manager of 1 Dental practice. All the GP practices eventually agreed to participate but the initial meeting with the Dental practice revealed that they had no internet access and, indeed, were still working on Windows 3.1 with no plans to upgrade. It was agreed that training sessions booked at a local GP practice would be notified to the dentists and, should they wish to attend, they would be welcome to do so.

At the 11th hour (December 2000) a dentist in West Bromwich agreed to involve the whole of his practice in the project and the process was completed over a 1-month period.

In addition, meetings were held with Trust IT and community staff. A meeting was attempted with Smethwick PCG but it was difficult to speak with anyone and when this eventually happened, they were unable to commit to any involvement in the project.

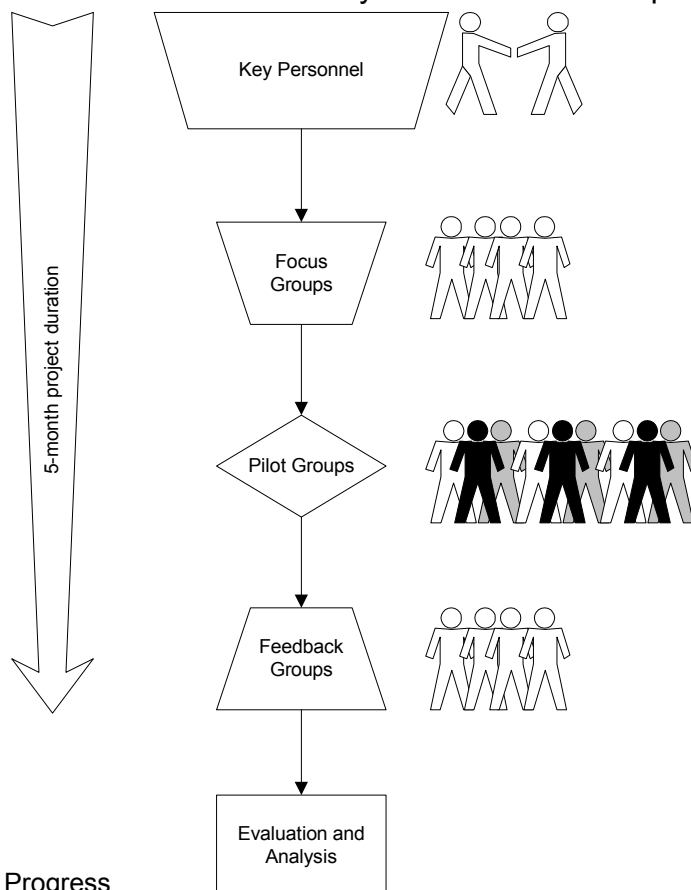


Figure 1 – Project Methodology and Progress

A study carried out by Verhoeven et al (2000)³ concluded that printed information is the most effective literature method for GPs as inexperienced GPs need training in electronic literature retrieval methods. This project offered training in both electronic literature retrieval and, prior to that, basic ICT skills such as Windows and Internet usage.

Training need was established by use of two Training Needs Analysis questionnaires – one to identify basic ICT training needs and the second to identify more detailed clinical research requirements.

2 x 3-hour training programmes were initially developed, as follows:-

- Basic ICT and internet searching skills
- Clinical database skills

Following initial meetings described above it became clear, however, that it would be very difficult for staff to be released for 3 hours and each of the courses, therefore, were split down into 2x1½ -hour sessions. At the same time, due to restrictions on GPs having access to Biomed through WISH, it became clear that it would be difficult to deliver the clinical database skills to both doctors and other practice staff at the same time. The courses, therefore, were broken down into:-

All staff

T1P1 – Basic ICT skills, such as mouse navigation and windows

T1P2 – Basic Internet skills, utilising sites such as NHSDirect.co.uk

Doctors only

T2DP1 – Basic clinical database searching using Doctors.net

T2DP2 – Advanced clinical database searching using Doctors.net

Other clinical staff

T2WP1 – Basic clinical database searching using WISH

T2WP2 – Advanced clinical database searching using WISH

In addition a dental version of T2 had to be developed. Although the research skills were the same, the content was tailored to meet the needs of the dental practice, including the use of an internet site called Derweb⁴.

Although this became a scheduling nightmare, it meant that staff members were given training specifically tailored to their needs.

³ Verhoeven AAH, Boerma EJ and Meyboom-de Jong B. Which literature retrieval method is most effective for GPs? *Family Practice* 2000; 17:30-35

⁴ DERWeb is part of The Medical House plc group of companies. The group sources, creates and translates medical reference material combining existing content from the world's key publishers with its own news and information service.

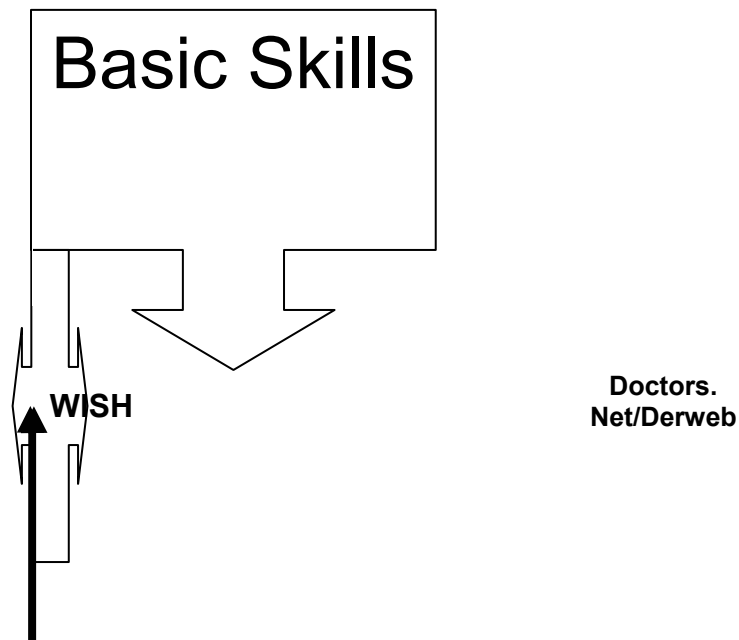


Figure 2 - Training programme

The training delivery was offered both on site at GP and dental practices and within the Hospital. 5 of the GP practices preferred on site due to the time constraints on them, while 1 GP practice and the dental practice attended the Hospital site for 2x3-hour sessions on their afternoon off. One GP practice closed the practice for 1½ hours for 2 consecutive weeks in order for the administration staff to be trained.

A total of 159 delegates were trained over 49 separate sessions, the first being delivered on 11th October 2000 and the last on 10th January 2001.

IT Audit

An audit of IT equipment was carried out, where possible, in each of the sites visited at the time of the Focus Group. In some cases, this was merely a discussion with the Practice Manager, as many PCs are in treatment and/or consultation rooms and, as such, are often in use. In most cases, the IT systems were considered capable of being used for training, although it became apparent that this was not necessarily the case.

One practice thought that they had internet access from each of their PCs and we accessed the internet from one of them during the audit. The others had Internet Explorer and, during the audit this displayed the Microsoft Homepage. In fact, it transpired that the access was no longer available and the audit had viewed a cached page. This did not become known until the training came to be delivered, when it became apparent that the PC being used for training did not have internet access. The training was postponed until they got the technical issues sorted out.

Quantitative Analysis

GENERAL IT SKILLS

Although 62 people completed pre-training questionnaires to ascertain individual knowledge of ICT and the internet only 36 of them completed the relevant post-training questionnaires. Not all of the 36 had completed a pre-training questionnaire and this made comparison analysis difficult.

The questionnaires were based on marking a number of statements in relation to existing and gained knowledge. The maximum total mark available was 45. The pre-training mean average total was 24. The post-training mean average total was 34.5

Statistically, using a chi-squared analysis, the results are significant at a critical value of ≤ 0.000000 , which means that the probability of the increase in ability being purely by chance is almost statistically impossible.

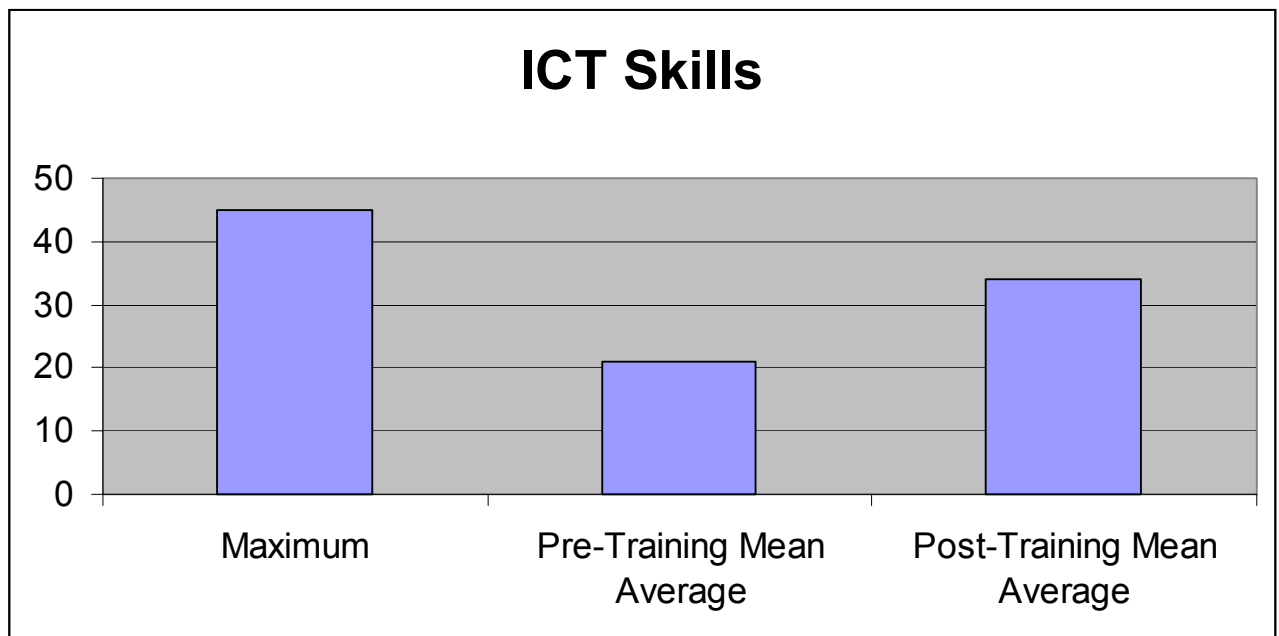


Figure 3 - ICT Pre and Post-training skill assessment

DATABASE SKILLS

NHS Trust

34 pre-training questionnaires were completed to ascertain individual knowledge of specified databases, such as Cinahl, Medline and Cochrane.

This again was based on marking a number of statements in relation to existing knowledge. The maximum total mark available was 40. The pre-training mean average total was 9.1. The post-training mean average total was 17.7.

25 people completed relevant post-training questionnaires and some of these people had not completed a pre-training questionnaire, so direct comparison analysis was difficult.

Once again, using a chi-squared analysis, the results are significant at a critical value of ≤ 0.000000 , which means that the probability of the increase in ability being purely by chance is almost statistically impossible.

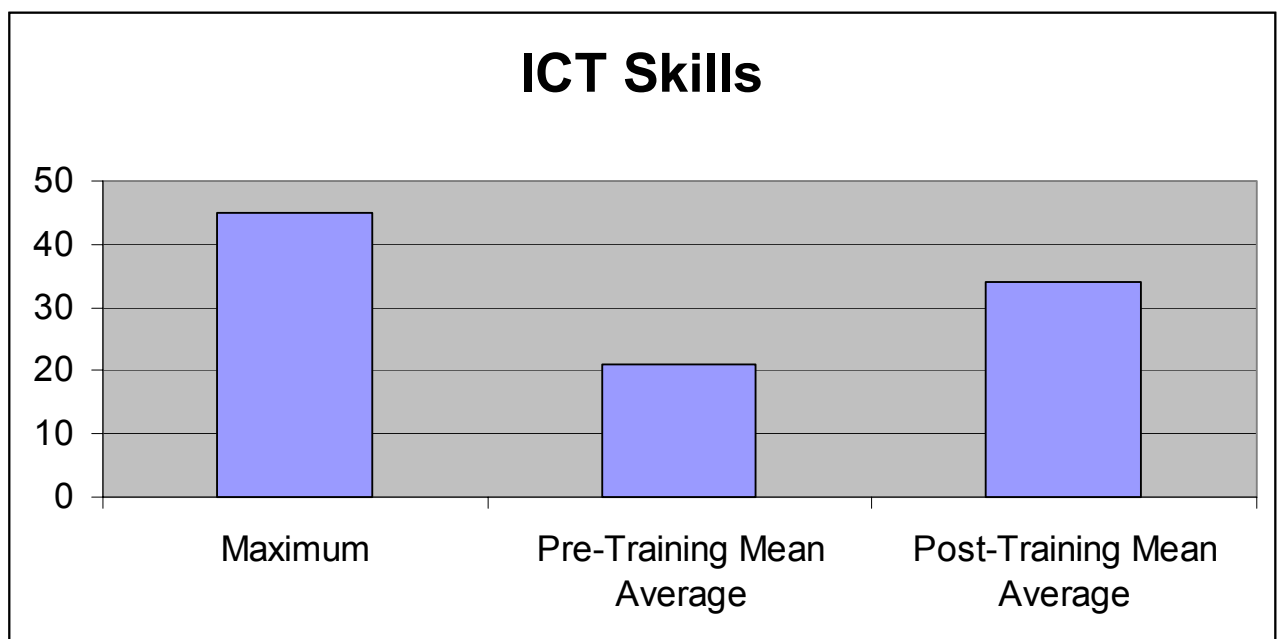


Figure 4 - Database Pre and Post-training skill assessment

Qualitative Analysis

PRE-TRAINING ANALYSIS

This was carried out through the use of focus groups, as detailed in Methodology. A number of issues were identified as a result of these focus groups:-

- The need to ensure validity of information
- Time and human resource management
- Ease of access to information, including email access to partners
- Confidentiality
- Communication links in general, see Figure 5, below

These issues were summarised under the following main areas of interest for the project:

- Culture – within which the knowledge base is held
- Content – of the knowledge base
- Technology – supporting the knowledge base

POST-TRAINING ANALYSIS

The issues arising from the focus groups and the subsequent qualitative analysis were used as the basis for structured feedback sessions. Only 1 GP surgery and the Dental practice were able to provide this feedback. Of the 4 that were unable to participate, 1 had also been unable to arrange a pre-training focus group, 1 attempted to provide feedback through a further feedback questionnaire and the other 2, despite numerous reminders, failed to respond to requests for qualitative feedback through a focus group or questionnaire.

Letters were received from the Practice Manager and the Lead Practice Nurse of a large practice expressing their appreciation of the training, trainers and, in particular, the flexibility of approach to training, being provided in the centres themselves at times suitable to each individual or group.

FEEDBACK

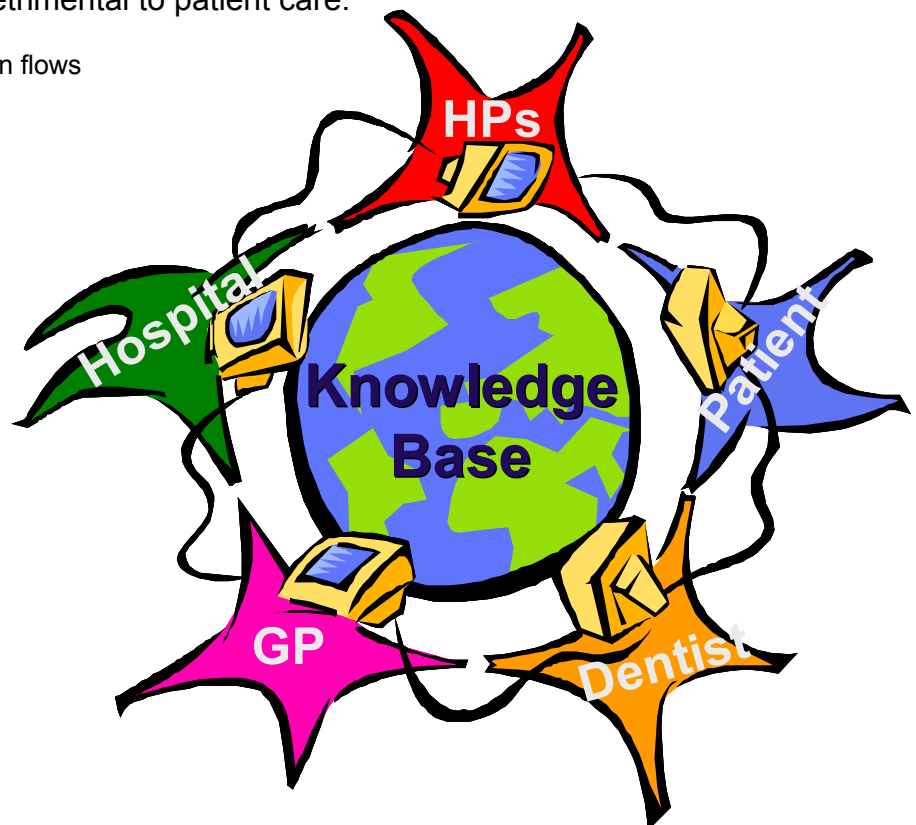
The feedback available is limited, although very positive in the way in which the new ICT and database research skills were being used. One practice nurse has become the 'fount of knowledge' since her training, as she is using her research skills to get access to knowledge for her colleagues at both practices she attends, as well as for her own use.

The dental practice had an example of an immediate change in practice as a result of information now available to them. They became aware of the implications of a treatment for oral cancer that had an immediate effect on at least one of their patients. This has changed their practice and they expressed delight in their confidence now to look for information that they may not have been made aware of in the past. Indeed, at their regular practice meetings a member of the team is given a dental topic to research and then feedback their findings to the rest of the team at the next meeting. This has only been possible since they have been able to get easy and quick access to information.

The main areas of concern are still communication and access to ICT to be able to get the information needed. The GP practices do not always have access to PCs in the locations where they are needed and, when they are in place, not all have Internet access. Access to hospital systems, such as Pathology results, is varied. The dental practice has no access to NHSNet, which means that they have confidentiality issues and do not use the Internet for transmission of data to the extent that they might use NHSNet.

Communication is still a big issue and GPs feel that they should have more involvement with hospitals. Dentists feel that they should have more lines of communication with both GPs and hospitals. All the people involved, however, feel that their communication lines with the patients are adequate. Unfortunately, it is generally agreed that their lack of communication as health professionals can be confusing and often misleading for the patient and can, for example where a dentist has to prescribe antibiotics to a patient who may not need them, be detrimental to patient care.

Figure 5 – Ideal Communication flows



PROJECT CONSTRAINTS

Involvement

- One large practice that initially committed to the project decided at the beginning of November that they would not, after all, be able to participate due to staff shortages and pressures. It was then very difficult to return to the practices that did not wish to participate at the beginning of the project to ascertain whether they would like to join as the project was due to end at the end of December 2000.
- In mid-November some money was made available for staff cover to attend training and we had hoped to be able to bring back the withdrawn practice on this basis. Unfortunately, they were still unable to commit due to time and staff restraints in the run up to Christmas. Had this been made available initially, more practices may have been able to commit, as this was a major issue for all practices when considering involvement and the ones that did only did so on a goodwill basis, giving up lunches and time off.
- The lack of dental practices was an issue and help in recruiting practices was sought wherever possible. As the project was extended by 1 month (to the end of January 2001) and the 'net' of practices was also extended outside of Smethwick to West Bromwich and Oldbury, we were able to recruit a practice in December 2000.
- The lack of an easy communication structures made the project difficult as telephone messages were left and not returned and there was no way of knowing whether the recipient ever got the message in the first place.

Training

- The main learning point from the project was that of timing. The project took longer to initiate than anticipated and training delivery only began at the beginning of October. This was due to the problem of staff being unable to commit to meeting times and then taking up to 3 weeks to respond to telephone and fax messages to agree their involvement. They then have had difficulty in organising focus groups and, in fact, 1 of the practices has been unable to do so. A decision was taken, however, not to delay them from receiving training although this will had an impact on the project. Getting analysis forms back from staff has also been time consuming and, in some cases, impossible.
- The other timing issue is that of starting times for the training. Sessions rarely began on time due to the staff clinics and other commitments over-running and, as they were often sandwiched between commitments, the training sessions must not over-run. This meant that trainees were given little chance to practice their new skills in the training session and, although they regularly agreed to practice between sessions this was rarely carried out.

ICT

There are a number of technical issues that need to be addressed in GP surgeries and, as they each have responsibility for their own systems, it is difficult for them to manage and to get the support they often need. They still expect the hospital IT department to be able to provide help although the system is not supported by the Trust.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of the previous pilot project have been confirmed by this project and shows that both the Trust and the Local Health Community have the same issues to deal with. Communication is still the main issue and once again, the implementation of the Knowledge Management Strategy, which includes a number of proposals for enhancing communications across the Trust and local Health Community, would have a direct effect on this area.

The strategy proposes the development of an action plan for 2000/2001 in conjunction with the Knowledge Management Group. It is envisaged that the action plan may include items such as:-

- Team Building awaydays for multi-disciplinary and multi-functional staff
- 'Shadowing' of roles to facilitate a better understanding of each other's role both within the Trust, within Primary Care and between local Trusts

Both of the above are intended to deal with some of the communications issues raised by this project by enhancing communication across the health community and facilitating integrated working practices.

- A facilitator to work with departments on particular operational issues and standards
This is intended to alleviate some of the frustrations highlighted in the Evidence-based practice matrix, above.
- Benchmarking
To facilitate best practice across the health community
- Development of an ICT Learning Centre to provide structured training and less formal 'drop in' facilitated workshops
This is intended to provide a better understanding of the role of ICT within the health community and to provide a readily accessible ICT training provision on the Trust site. It is generally accepted across the Trust that structured IT training needs to be available to all staff. A drop-in centre with facilitated workshops, available in a central location on the hospital site is seen as a positive step towards open access to IT. This does not, however, solve this issue within Primary Care.

In addition, the upgrading of Path.Finder to an XML format, from XGL and its subsequent networking across the whole health community will further enhance the general communication and knowledge flows.

It is important that information about the work of the Trust, its goals and future plans, is available not only to clinical staff, but also to support staff and patients. 24-hour access to this information is crucial and this is where the IT infrastructure can provide the solution.

The Trust's IT infrastructure and support is still considered an issue to be tackled by most staff within the Trust, including Primary Care, where Pathology Results reporting is seen as important.

PROGRESS

Work has begun in a number of these areas, notably the development of Path.Finder that is forming the basis for the Sandwell intranet and includes patient, support and clinical information bases. It also incorporates a Knowledge Bank providing access to a variety of information sources such as National Electronic Library for Health National (NELH) and specialty-specific websites. Work began in April 2001 and the site is being piloted in Paediatrics in the summer of 2001.

Sandwell Hospital is organising and hosting a Knowledge Management seminar, entitled 'Knowledge Management in the NHS – a contradiction in terms? Turning Information into Knowledge' in October 2001 to bring together local interested parties to discuss topics such as:-

- The Sandwell Experience
- Accessing Information sources in the NHS
- IT Infrastructure Implications
- Building Knowledge Communities

The district is also in the process of development a district-wide Education Training and Development Strategy as part of the Local Implementation Strategy, and this takes into account basic ICT skills training requirements, among other things.

On a National basis, the development of the NELH will assist with the provision of information and at a local level, the Sandwell Clinical Library has recently extended its opening hours to provide an enhanced level of service to its members.