

Study of Intranet Use in a Hospital Setting

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This paper is a case study of the use made of a UK National Health Service hospital intranet by hospital staff. It reports the results of a questionnaire and follow-up interviews with staff concerning intranet use. The results showed that relatively little use was made of the intranet in terms of overall frequency, though some intranet sites and local services were used relatively heavily. However, interview respondents did view the intranet as a positive asset. The interviews showed the reasons for the low usage to be partly geographical (access to PCs in work locations), partly network availability, but mainly due to uptake by staff. Recommendations were made regarding familiarisation with and advertising of intranet content, inclusion of intranet use in existing IT training, and usage encouragements. The paper discusses what can be learnt from such a study, including practicalities of access to staff and the utility of questionnaires versus face-to-face interviews. It also explores the reasons why the original motivation for the study, that of informing re-design of the intranet, was only partially fulfilled.

INTRODUCTION

This paper reports the results of a questionnaire survey of and follow-up interviews with staff of a North London National Health Service (NHS) hospital trust, concerning the use made of the hospital intranet.

The study was originally undertaken in order to inform any re-design of the intranet and to feed back comments about intranet use to its administrators. A secondary aim was to allow those comments and reactions to inform an analysis of the intranet using a novel usability evaluation method called CASSM or Concept-based Analysis for Surface and Structural Misfits. (CASSM was previously known as Ontological Sketch Modelling or OSM (Blandford & Green, 2001; Connell Green & Blandford, 2003).) In the event, re-design aspects of the study became rather subsumed under the usage patterns and user comments which were gleaned, respectively, via the questionnaires and interviews. However, these were fed back to the intranet designers, and the CASSM analysis was completed. The reasons for the partial lack of fulfilment of the original aims will be taken up in the Discussion.

The purpose of the questionnaire was twofold. First, to determine both general (staff-wide) and specific (locations or specialisms) usage patterns for the intranet. Second, to establish personal contact with as many staff members or their representatives as possible, in order to facilitate the interview stage. It was envisaged that facilitating one-to-one interviews would be difficult in such a large and dispersed organisation without an initial familiarisation with the researcher (the first author) and the purpose of the study. To that end, visits were made to managerial staff in order to obtain permission for later visits (for example, to wards), and to ensure that it was understood that no access to patients or patient records was necessary. Even then, care was taken to distribute and collect questionnaires in person. This was done in order to increase the return rate, and to allow prospective interviewees to volunteer in person.

In the event, only the first purpose was properly fulfilled. Sufficient returns were garnered to allow establishment of usage patterns (see 'Results'). The second purpose of the questionnaire, to facilitate follow-up interviews, was only partially fulfilled, in that only six volunteers came forward. However, the comments made by these interviewees were sufficient to provide useful insights into the questionnaire data, allowing recommendations to be made regarding certain aspects of the intranet design. The issue of questionnaires vs. interviews as a means of data gathering in a personal healthcare organisation with heavily demarcated staff roles will be taken up in the Discussion.

The secondary aim of the study, the evaluation of the intranet using CASSM, was successful, in that the findings from the questionnaire and interviews did inform the analysis. As will be described, a CASSM

analysis requires insights into the requirements and expectations which are brought to an interactive system (such as an intranet) by its prospective users. This 'user model' aspect of the analysis did gain from both parts of the study, and we were able to use the experience of doing the analysis in further development of the CASSM technique. However, it is recognised that these issues will be of only peripheral interest to the readers of this journal, and this aspect of the study will be described only briefly.

Other case studies of hospital intranets have been accounts of development and usage by network location (e.g. Darmoni & Theron, 1998) or brief histories (e.g. St. John's Hospital, [1]). There are also surveys of intranet developments in hospital settings (e.g. Hatcher, 2001). Ong et al. (2001) may be unusual in describing both an intranet development process and the subsequent take-up. The current study is an account of intranet usage from the point of view of hospital staff. It is hoped that these results can provide some pointers to future studies of the impact of intranet provision in a hospital or other geographically distributed organisation.

THE HOSPITAL AND THE INTRANET

The hospital is a North London UK NHS Trust hospital. Its 2000 staff and 470 in-patient beds serve a total local population of 300,000. It offers a large range of clinical services, including Accident & Emergency and Outpatients departments. It is a teaching hospital, providing both undergraduate and postgraduate training. A new postgraduate education centre opened in 1999. The hospital also provides training for nurses, midwives, radiographers and dieticians.

The hospital intranet was developed and is maintained in-house. The developers also provide IT development and help support for the several networks of staff PCs and library terminals. The intranet is accessible only locally, whereas the hospital site of the NHS Internet is available on the world wide web.

The intranet home page is the default startup display for networked PCs available to hospital staff. It provides immediate access to a range of network services including the internal phone directory, the on-call rota & bleep listing, external phone and email services, and external links to the internet and NHSnet. It also offers a (intranet) site map and 'what's new' (on the intranet) information, as well as space for feedback. The main intranet sites linked from the home page includes News & Events, Departments &

Services, Clinical Policies, Education & Training. Some of these sites have several sub-sites or sub-pages, so that some pages may be as much as four levels below the home page. There is also an intranet site search facility.

The feedback from staff is used to continually re-structure the intranet. As well as providing feedback, staff are able to upload documents to the intranet in PDF format. Thus the content and structure of the intranet is continually evolving. In providing links to NHS, healthcare, education and other related internet sites, the intranet also acts as a 'jumping off point' to external services and information.

METHOD

As stated, the findings from the first two phases (questionnaires and interviews) were used to inform the CASSM analysis. The next two Sections outline the procedures used in the first two phases respectively. The following Section gives a brief description of the CASSM analysis.

Questionnaire Study.

See Appendix A for a copy of the questionnaire.

As mentioned, the questionnaire was distributed and collected in person, by pre-arranged visit to wards and clinical services. It consisted of a set of questions designed to elicit usage data for each part of the intranet, followed by more personal questions concerning workplace, role, etc. The final page requested the recipient to volunteer for the follow-up study. In line with the requirements of the hospital research ethics committee, it was made very clear that volunteers were under no obligation to take part and could withdraw at any time. It was also emphasised that no patient contact or access to patient data would be involved in the follow-up study.

Home page items were first to appear on the questionnaire, allowing immediate indication of their frequency of use (see Appendix A). Due to the large number of individual pages which make up the intranet, the questionnaire listed only the pages at the first level below the home page. (It was expected that respondents would be able to recall their usage routes at that level, if not precisely those below.)

Thus, for example, someone who regularly accessed a page or pages under Maternity would only have to tick off their usage for that one site under Department & Services.

For each facility, site or page thus ticked, respondents had to indicate their frequency of access, ranging from 'More than once a day', 'Daily', 'Weekly' to 'Monthly' (or 'Other'). Thus it was hoped that a detailed pattern of usage would emerge, allowing distinction to be made between sites and/or pages which were used only rarely and those which were used several times a day. As the Results will show, this turned out to be a generally successful strategy, except that the low overall usage meant that for most people, most of the questionnaire was left blank.

Respondents were also asked to indicate their level of experience (designated as Low, Medium or High) with internet and IT facilities in general (namely IT, the world-wide web and e-mail), and other intranets in particular. This was in order to assess whether there was any correspondence between usage of the intranet under study and wider (internet and/or other intranet) experience.

Interviews

See Appendix B for a copy of the interview structure.

As mentioned, only those who specifically volunteered for the follow-up study in the questionnaire were interviewed. Interviews took place at the volunteer's place of work, where necessary by arrangement with line managers. Interviews were audio-recorded, again with the express permission of the volunteer. It was made clear that all responses would be treated in confidence and that anonymity would be assured should any transcripts be used in future reports or publications.

Each interview followed the same general structure (see Appendix B), designed to elicit the volunteer's attitude to and comments about their intranet and internet access, including the location and ease of access at work, any home access to the internet (including staff e-mail), any comments about the structure of the intranet, what extra material might be available, etc. Interview responses were later used to make specific recommendations as to what content might be included in the intranet, and how existing

content might be made more known, how navigational clues might be enhanced, use of the search facility encouraged, etc.

Even though representing a reasonable spread of specialisms and roles, only a small number of interviewees were recruited (six volunteers from 55 returned questionnaires). The extent to which their responses were representative of the wider staff population will be taken up in the Discussion.

CASSM Analysis

A secondary aim of the study was to perform a CASSM analysis of the intranet. Only brief details will be given here.

The purpose of a CASSM analysis is to identify the misfits between the user's conceptualisation of a system or device and that which the system or device imposes on the user. Concepts which are present in the system but absent from the user model, or present in the user model but absent from the system, are a first source of misfits. Concepts which are present in either the system or user models but only apprehended with difficulty at the interface will be a cause of further misfits.

In this study the user concepts of intranet use were informed by the interviews plus the additional comments offered by the questionnaire respondents. System concepts were derived from intranet use and discussions with the intranet developers. The user-system misfits which were identified by the CASSM analysis were also used to inform the recommendations made about intranet structure and design. These are summarised in 'Cassm Findings'.

RESULTS

Questionnaires

Of 200 or more questionnaires distributed or given out for distribution, 55 were completed and returned. This high return rate reflects the personal visit strategy described above. There were 10 respondent groups, namely Postgraduate & Senior House Officers, Undergraduate & Junior clinicians, Associate Health Professionals, Accident & Emergency, five Wards (mainly nursing staff), Other.

The questionnaire data allowed analysis of both the usage patterns for items within an intranet page, and frequencies of usage for individual pages or groups of pages. The former tells us which items within a page were used (that is, cited by different respondents as having been accessed) more often than other items, the latter the number of times per day, week, month (etc.) a particular page or group of pages were accessed. Thus while a particular item might be cited more often than another item, frequencies of usage might range from daily to monthly.

Relative Usage Patterns

Figures 1 and 2 show the relative usages for home page and main intranet items, respectively. Figure 1 indicates that 27 of the 55 respondents (49%) said that they had used or did use external phone & e-mail services, while 25 (45.5%) had used the external links to the internet and NHSNet. In contrast, only three people (5.5%) had used the Intranet Feedback facility. Figure 2 shows that 17 (31%) respondents had accessed the Departments & Services pages and 16 (29%) News & Events.

[take in Figure 1]

[take in Figure 2]

Individual Site or Page Usage

Figure 3 shows the spread of attested usage per respondent across all 113 cited intranet items (facilities, sites or pages). At the highest, there were 36 citations of item 1, the On-call & Bleep List (0.73 usages per person); at the lowest, there were 24 items (pages or sub-pages) with sole usages. Put differently, 73% and 62% of respondents respectively said that they accessed the two most popular facilities (items 1 and 2), while no more than 20% had looked at the majority of intranet pages (items 15 onwards).

[take in Figure 3]

Usage Frequencies

Figure 4 shows the aggregated frequencies of usage (More than once per day, Daily, Weekly, Monthly, Other) for all respondents. We can see that the highest attested usages were monthly and weekly, with relatively few pages being accessed daily or more than once per day. Data for each of the ten groups of respondents showed similar patterns.

[take in Figure 4]

Internet and Intranet Experience

Figure 5 shows expressed experience level (Low, Medium and High) of the wider internet (E-mail and the World Wide Web) and IT in general, for all respondents. We can see that the most common experience level was medium, and that this was about the same for all three domains. The majority of low experience focused on the IT domain, while most of the small amount of high experience was reported to be with e-mail.

[take in Figure 5]

Expressed experience level with other intranets (not shown in Figure 5) was mainly Low, 80% of respondents labelling it thus.

The above pattern was reflected in the experience level data for the majority of each of the ten groups of respondents, only two groups reporting a preponderance of Low experience (of IT, in both cases). No group

regarded their experience in any domain as high. There was no obvious correspondence between reported experience level and level of usage of the intranet, for any of the ten groups.

Summary of Questionnaire Results

Taken together, the questionnaire results indicate that while up to half of all respondents were accessing some intranet sites, and more than 60% the most popular facilities, overall usage was low or very low. Fewer than 20% of respondents had looked at the majority of all available items, and most usage was monthly or weekly rather than daily. Put simply, most respondents were not using most of the intranet, most of the time.

The results also show that much usage was concentrated on local (internal) communications and external information resources, rather than sources of local information. The two most popular facilities were the On-call & Bleep List and the Internal Phone Directory, while two of the most heavily cited pages were Links to the Internet & NHSNet, and External Phone & E-mail. The most accessed internal sites were Departments & Services and News & Events, but neither of these were cited by more than a third of respondents.

Respondents reported their experience level with the wider internet and IT as mainly Medium, and with other intranets as Low. There was no obvious correspondence between reported experience level and the level of usage of the intranet under study.

Interviews

As mentioned above, the comments made by the six questionnaire respondents who volunteered to be interviewed were sufficient to provide useful insights into the questionnaire data. These will be described with the aid of selected interview transcripts. The combined questionnaire and interview results allowed some recommendations to be made regarding certain aspects of the intranet design, which are described later.

Intranet Usage and Access

While most interview comments confirmed the results from the questionnaires, some tended to contradict the above finding that usage focused on communications and external links provided from the intranet. Three of the six interviewees stated that they preferred to access the internet 'directly', via a search engine (such as Google) or stored bookmarks.

[I = Interviewer, R = Respondent]

Interviewee 1 (Paediatrics Service Manager):

I: [...] as a proportion of your internet use, how much of the internet do you use - how much time do you spend on the internet [here] ?

R1: I don't use the internet that much here.

I: Ok, and when you do, is it mostly directly from the intranet, in that way ...

R1: Probably not, I probably go to a search engine and then stick in what I was looking for.

Interviewee 4 (Postgraduate Education Course Manager):

R4: [...] usually when you are looking for something it's easier for you to do a search with Google or with my own links, with my own favourites.

Interviewee 6 (Assistant Director of Nursing Education):

I: [...] there are links to the NHSnet and other external sites from the intranet: do you use those ?

R6: I use those very occasionally - I tend to have all the others set up on my Favourites [Internet Explorer bookmarks], so I go straight to them anyway.

However, it was clear that e-mail (which is linked from the intranet home page) was an important facility, with one interviewee commenting that a large proportion of her working day was spent on mail management. E-mail was also used as a means of dissemination of information, and (in the case of a nursing education manager) to help others locate items on the intranet. One interviewee expressed a desire for dedicated external links to hospitals and other associated Trusts. Another suggested a list of frequently used internet sites on the intranet home page.

Access to the intranet for managerial staff was clearly not a problem, since all those interviewed had individual terminals. However, at the ward level, where terminals were shared between several staff members, there was some concern that access was less easy, and that networking problems (for example) made it difficult to print downloaded documents (which had to be done elsewhere, such as from doctors' offices). However, none of those interviewed said that they had serious difficulties in accessing the intranet.

Searching and Exploring the Intranet

While all interviewees were aware of what the intranet is and how to access it (via the hospital network PCs' internet browser home page), individual interviewees had only a partial view of the intranet content. While it is natural that different specialisms would make use of different resources, and the size of the intranet (with around 90 sites at the time of the study) mitigates against extensive exploration, the questionnaire results showed that individual usage was low.

Part of the problem seems to be that the content is continually being revised and re-structured, with developers responding well to suggestions for placement of individual items. In addition, it was clear from both the questionnaires and the interviews that the intranet search and site map facility were not heavily used, and the evidence from interviewee 6 was that searches (and the efficacy of the site map) may not be working as well as might be expected.

Interviewee R6 (Assistant Director of Nursing Education):

I: [...] Could you try a typical page that you know exists, via the Searcher, just to see ?

R6: Yes, I could try it, but the only thing is [that] I don't know how to use the Searcher ...

I: Ok, it's under the top menu, menu bar ...

[R6 moves cursor to browser menu]

I: ... No the top bar menu, on the Intranet.

[R6 Opens the Searcher and clicks the dialogue box; then types in 'Study and Expenses Policy': the Searcher comes back with 'Not found']

I: ... It's pulled up [meaning received an entry for] a specific document with that name, but it's currently unable to locate it.

[...] Could you locate by your normal means, just to make sure it's not temporarily unavailable ?

[R6 drills down to the 'Human Resources' part of the 'Clinical Policies' site on the Intranet]

R6: 'Study and Expenses Policy' is a PDF file [looking at document title].

[R6 clicks on the link]

I: Opening up Acrobat ... and there it is, it's a PDF document, with precisely the same title that you actually gave [...]

The intranet under study may be unusual in allowing users to upload documents and other information, via an in-house facility. However, none of the interviewees said that they had done so, although several were active in corresponding with the developers (for example, to suggest placement of items or changes to the page structure). None of the interviewees said that they had had any training in the use of the intranet (though IT and other web-based healthcare access training is available on site).

Interviewee 1 (Paediatrics Service Manager):

I: [Do you have] any general comments about - not so much the content of the intranet but the way it's laid out, the number of levels below each [part of the top menu], the layers you have to go down

R1: [...] I do think they should provide links to the different sections, because not everyone thinks along the same logical path ... we all think in different ways, so there should be links underneath, say like Maternity, and then you might go somewhere else, and come back.

Interviewee 6 (Assistant Director of Nursing Education):

I: [...] Are there other areas that you use less frequently, that you have trouble locating sometimes but you do need to use them ?

R6: No, but that's possibly because I use the intranet so frequently that I know where things are. But my experience is that it's not that easy for clinicians, who perhaps don't use it as frequently, to actually find the information that they need.

I: What's a typical clinician-type page ?

R6: An example would be the IV drug administration policy. The vast majority of our clinical staff here would actually need to obtain that. It's actually very hard to find on the intranet, it's not easily accessible, and that's something that we need to consider changing.

I: The IM&T do do that, there is a way that you can upload stuff to the intranet [...]

R6: They're incredibly helpful in terms of moving stuff around; it's a case of sending them an e-mail and saying 'can we relocate this?', but there's a case for making sure that all the clinicians out there know where we're relocating things to.

[...]

R6: [...] there's Orientation Guidelines, and that states about Good Practice awards, Clinical Supervision Guidance; again, this isn't in the really ideal place, it's under Nursing, and perhaps it would be better under Education; but it's difficult to know where something would actually best be placed; and I think that's a problem I have, as well as getting my head around the whole intranet [...]

Attitude Towards the Intranet

All of the respondents expressed positive views about the hospital intranet, samples of four of which are included below. This is in spite of being also clear that the internet (in the wider sense which includes online database access, E-mail, the World Wide Web *and* local intranet access) has become indispensable (interviewees 4, 5 and 6). However, the former view may be a factor of the small sample (those who volunteered to be interviewed) and is thus not representative of the wider hospital staff. This issue will be taken up in the Discussion.

Interviewee 2 (Senior Physiotherapist):

R2: [...] I think it's good that people are taking interest in the working lives or the working conditions of the health profession, and also I think it's a valuable piece, having the use of the internet and IT as a whole [...]

Interviewee 4 (Postgraduate Education Course Manager):

R4: [...] it's a good base that we have been given, and there are new sites and new things are appearing in there, starting to appear, this has got a lot bigger, there used to be only like up to here, now everybody's coming in. So they have really set a very good basis for people to make their own growing.

[...]

R4: I think a good intranet is the only good basis for growth at the departmental level, that's the only way you can do it - it's just to give very good technical assistance, then you need a very clear separation of all the areas, and the other one is you need the collaboration of the people. And I think that that is very much adopted here generally. But it depends a lot on that - when the computers go off, people don't know what to do I think if the computers were off for three or four days, fine, you revert to carry out work, fine, but if it's just like for the day or whatever, people just don't know what to do with themselves.

Interviewee 5 (Senior Administrator, Undergraduate Medical School):

I: Would you be able to do your work now without it [the teaching university intranet] ?

R5: No.

I: It must go down from time to time.

R5: Indeed, and it did go down Thursday afternoon, and it didn't come back all of Friday, so that's one and a half days of work I've lost, although I can access my files from home, but actually last week I had some important reports to write, and they're late as a result [...]

Interviewee 6 (Assistant Director of Nursing Education):

I: So apart from internet and intranet supporting your job, it appears that they are a large proportion of your job ?

R6: Yes.

I: Could you now do your job without them ?

R6: No, there's no way I could do my job without them - I'd be absolutely devastated without them, they are far too easy a communication route for me. I suppose yes I could, but it would make my job incredibly difficult, and when I talk to other colleagues who work in other Trusts, who haven't got the excellent system that we've got here, you can really notice the difference - we would spend so much time actually sending out minutes, sending out agendas, sending out information [...] it makes my life so much easier.

CASSM Findings

As mentioned above, a secondary aim of this study was evaluate the hospital intranet using CASSM (Concept-based Analysis for Surface and Structural Misfits), the analytical usability evaluation approach being developed by the authors and other colleagues. A brief summary of these findings follows. (Note that some aspects of the user model of intranet use were informed by the interviews and questionnaires: see Discussion.)

CASSM focused on the perceived differences between the intranet and the wider internet, the scope of the intranet itself (including searching for items whose location or precise title are not known), and navigation around the intranet. The first concerned the potential difficulty which users might experience in distinguishing between intranet and internet items, since both feature on the intranet home page (e.g. intranet main pages and links to external NHS sites) and some sub-pages. The scope of the intranet itself was clearly outside of most users' experience, given the low usage levels and the focus on certain sites or facilities to the exclusion of others (including the site map and, to some extent, the Searcher). Navigation was considered to be no more of an issue with this intranet than with hierarchically organised internet sites and menu-based information spaces, but the visibility of already visited links and pages might be dependent on particular machine settings.

DISCUSSION

Though the questionnaire findings showed clearly that uptake and usage of this hospital intranet by hospital staff was low, positive comments were obtained from the interviewees regarding intranet provision. In addition, recommendations for encouraging uptake and familiarisation arose from this study and the CASSM analysis which would not otherwise have been forthcoming. Thus part of the original aim, to gain insights into individual usage of and attitudes to an intranet serving a large and disparate organisational structure, was fulfilled.

However, the low number of interview volunteers is disappointing, in spite of the personal approach to questionnaire distribution and staff contact. It may be that allowing people to volunteer only via the questionnaire was expecting too much, especially given the length and level of detail of the questionnaire (and the fact that interviews were advertised as taking 'not more than one hour'). However, ethical considerations were such that a more direct approach was not attempted. It is believed that without the preliminary approach afforded by the questionnaire, the quality and insightful content of the interview responses would have been

reduced. In the nature of a large and dispersed public healthcare organisation, the kind of personal approach adopted in this study might be necessary in order to facilitate the breaking down of some of the initial barriers.

The findings of this study were that intranet use was low in spite of some facilities being more heavily used than others, that the intranet was viewed positively by respondents who volunteered to be interviewed, and that there was some contradiction between the expressed views of interviewees and the questionnaire data in regard to internet access. Some recommendations were made concerning the visibility of new intranet content and intranet structure, intranet training (including uploading and searching), the enhancement of navigational clues (including the site map), and distinguishing between internet and intranet links. (The latter is considered to be common to other intranets and internet sites where 'external' (inter-site) and 'internal' (intra-site) content is not clearly distinguished.) These improvements are believed to increase the chances of future uptake of this hospital's intranet, and to address some of its design challenges.

To what extent can we draw more general conclusions from this study regarding intranets in general and hospital intranets in particular? It is clear that the small number of interviewees makes the implications of their comments difficult to regard as representative, compared with the questionnaire data. And even the latter are a relatively small proportion of a staff population of 2000. However, the personal approach to questionnaire distribution and retrieval did deliver a response rate of around 25%, far higher than might be expected from a more indiscriminate strategy, and the quality of the interview responses is believed to be the better for it. The combination of qualitative and quantitative data which the two parts of the study provide are offered as one solution to the issue of data gathering in a dispersed and heavily demarcated organisation such as a this one. Thus we regard the combined data as at least a valuable beginning to understanding the impact of local and external information provision via a hospital trust local network.

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[1] <http://www.igchealthcare.com/stjohns.htm>

APPENDIX A: The Questionnaire (anonymised)

**UNIVERSITY COLLEGE LONDON INTERACTION CENTRE
STUDY OF INTRANET USE AT THE [anonymised] HOSPITAL**

Survey Questionnaire

- 1. Please indicate which parts of the [anonymised] Hospital Intranet you use, and estimate the frequency with which you access them.**

If you have never used the [anonymised] Intranet, go to Part 5.

Leave **blank** items whose content you have never accessed or do not access. If you're not sure whether you have ever accessed a particular item, put a '?' in the 'Other' column.

If you would tick 'More than once a day', please indicate the average number of times per day you refer to that facility or part of the Intranet.

Included in the table are other "external" sites and services (e.g. external phone and e-mail services) that can be accessed via links from the [anonymised] **Intranet** (do **not** tick such items if you access them solely by other means). If you do tick 'External Phone & E-mail Services' or 'Links to Internet and NHSnet', please **also** complete Part 2.

| Title of Intranet page(s), Intranet site facility or external link | More than once a day | Daily | Weekly | Monthly | Other (please specify) |
|--|----------------------|-------|--------|---------|------------------------|
| Internal Telephone Book | times | | | | |
| External Phone & E-mail Services [external links] | times | | | | |
| On Call Rota & Bleep List | times | | | | |
| Job Vacancies | times | | | | |
| OVID-Library | times | | | | |
| Links to Internet and NHSnet [external links] | times | | | | |
| Intranet Feedback | times | | | | |
| About The Intranet | times | | | | |
| | | | | | |
| What's New | times | | | | |
| Intranet site Search | times | | | | |
| Site Map | times | | | | |
| | | | | | |
| News & Events: | | | | | |
| Latest news | times | | | | |
| Upcoming events | times | | | | |
| Trust & Executive Board decisions | times | | | | |
| Your views | times | | | | |
| Notice board | times | | | | |
| The Link | times | | | | |
| [anonymised] Radio | times | | | | |
| Staff Club | times | | | | |
| Theatre & Concert Tickets | times | | | | |
| Turning Point menu | times | | | | |
| | | | | | |
| | | | | | Continued |

| Title of Intranet page(s), Intranet site facility or external link | More than once a day | Daily | Weekly | Monthly | Other (please specify) |
|--|----------------------|-------|--------|---------|------------------------|
| Departments & Services: | | | | | |
| Anaesthetics | times | | | | |
| Cardiology | times | | | | |
| Child & Family Psychiatric Liason Service | times | | | | |
| Clinical Effectiveness & Audit | times | | | | |
| Dermatology | times | | | | |
| Facilities | times | | | | |
| Finance | times | | | | |
| Gastroenterology | times | | | | |
| General Surgery | times | | | | |
| Gynaecology | times | | | | |
| Health & Safety | times | | | | |
| Human Resources | times | | | | |
| IM&T | times | | | | |
| Imaging | times | | | | |
| ITU | times | | | | |
| Maternity | times | | | | |
| Nursing | times | | | | |
| Oncology & Palliative Care | times | | | | |
| Paediatrics | times | | | | |
| Pathology | times | | | | |
| Patient Advice & Liason Service (PALS) | times | | | | |
| Spiritual & Pastoral Care | times | | | | |
| Stroke Rehabilitation | times | | | | |
| Urology | times | | | | |
| Clinical Policies, Guidelines & Procedures: | | | | | |
| NICE Guidelines & Appraisals | times | | | | |
| Clinical Guidelines | times | | | | |
| Marsden Clinical Procedures | times | | | | |
| [anonymised] Clinical Procedures | times | | | | |
| Clinical Policies | times | | | | |
| Drug Guidelines | times | | | | |
| Infection Control | times | | | | |
| Bed Management | times | | | | |
| Generic Clerking | times | | | | |
| [anonymised] Integrated Care Pathways | times | | | | |
| Care Pathways Database [external link] | times | | | | |
| Education & Training: | | | | | |
| Training Programmes | times | | | | |
| Postgraduate Centre | times | | | | |
| 3D Anatomy Online [external link] | times | | | | |
| Educational & Development Profile | times | | | | |
| North Central Workforce Development Confederation [external link] | times | | | | |
| | | | | | Continued |

| Title of Intranet page(s), Intranet site facility or external link | More than once a day | Daily | Weekly | Monthly | Other (please specify) |
|---|----------------------|-------|--------|---------|------------------------|
| Audit, Research & Development: | | | | | |
| What's New | times | | | | |
| Research Project Process | times | | | | |
| Research Ethics | times | | | | |
| Research & Development Links [external links] | times | | | | |
| Principles for Best Practice in Clinical Audit | times | | | | |
| Clinical Audit & Benchmarking | times | | | | |
| Commission for Health Improvement [external link] | times | | | | |
| Useful Information: | | | | | |
| Structure Charts | times | | | | |
| Templates & Logos | times | | | | |
| Travel & Transport | times | | | | |
| Maps | times | | | | |
| Terms & Acronyms | times | | | | |
| Strategies & Policies: | | | | | |
| National Strategies and Policies | times | | | | |
| Appraisal and Continuous Professional Development (CPD) | times | | | | |
| Consultant Appraisal | times | | | | |
| Fire Safety | times | | | | |
| Health & Safety | times | | | | |
| Human Resources Policies | times | | | | |
| IM&T Policies | times | | | | |
| Major Incident and Emergency Preparedness | times | | | | |
| Moving and Handling Policies | times | | | | |
| Nursing Management Policies | times | | | | |
| Risk Management | times | | | | |
| Hospital Redevelopment: | | | | | |
| Latest News | times | | | | |
| Design of the new [anonymised] | times | | | | |
| Live Redevelopment Web Cam | times | | | | |
| Enhancing the Healing Environment ([anonymised]'s Ward refurbishment) | times | | | | |
| Redevelopment Photos & Images | times | | | | |
| Hospital Bed Study | times | | | | |
| | | | | | Continued |

| Title of Intranet page(s), Intranet site facility or external link | More than once a day | Daily | Weekly | Monthly | Other (please specify) |
|--|----------------------|-------|--------|---------|------------------------|
| Performance and Statistics: | | | | | |
| Trust Summary Reports | times | | | | |
| Service Agreement Reports | times | | | | |
| Waiting List Reports | times | | | | |
| Theatre Management Reports | times | | | | |
| Outpatients Activity Reports | times | | | | |
| Data Quality Reports | times | | | | |
| Medical Activity Reports | times | | | | |
| Patient Tracking Reports | times | | | | |
| Staff Bank Reports | times | | | | |
| Improving Working Lives: | | | | | |
| What is Improving Working Lives ? | times | | | | |
| Equality & Disability | times | | | | |
| Communication & Staff Involvement | times | | | | |
| Flexible Working | times | | | | |
| Healthy Workplace | times | | | | |
| Training & Development | times | | | | |
| Staff Benefits / Childcare | times | | | | |
| Staff Attitude Survey | times | | | | |
| HR Strategy & Management | times | | | | |

If you ticked 'External Phone & E-mail Services' or 'Links to Internet and NHSnet', please **also** complete Part 2.

2. If you ticked 'External Phone & E-mail Services' or 'Links to Internet and NHSnet' in Part 1, please also complete this part.

Only complete this part if you access any of these services or links via the [anonymised] **Intranet**.

| Title of external link | More than once a day | Daily | Weekly | Monthly | Other (please specify) |
|---|----------------------|-------|--------|---------|------------------------|
| External Phone & E-mail Services: | | | | | |
| Local NHS Services | times | | | | |
| National NHS E-mail Address Book | times | | | | |
| BT Directory Enquiries (192) | times | | | | |
| Alternative Directory Enquiries | times | | | | |
| Paging Service (Air Call / web paging) | times | | | | |
| Text messaging service | times | | | | |
| Yellow Pages online | times | | | | |
| | | | | | |
| Links to Internet and NHSnet: | | | | | |
| 1. Local NHS | times | | | | |
| 2. NHS and UK government | times | | | | |
| 3. Organisations (medical/healthcare) | times | | | | |
| 4. Libraries and databases | times | | | | |
| 5. Universities and colleges | times | | | | |
| 6. Journals | times | | | | |
| 7. Publications and papers | times | | | | |
| 8. Research and development | times | | | | |
| 9. Education and training | times | | | | |
| 10. Clinical Effectiveness and Clinical Audit | times | | | | |
| 11. Nursing and midwifery | times | | | | |
| 12. Information and IT | times | | | | |
| 13. Health Promotion Authority | times | | | | |
| 14. Events and conferences | times | | | | |
| 15. Miscellaneous resources | times | | | | |

3. Please make any suggestions for new Intranet site content which is not currently available.

| |
|--|
| |
|--|

4. Do you have any suggestions for future developments of the [anonymised] Intranet site ?

| |
|--|
| |
|--|

5. If you have never used the [anonymised] Intranet, please complete this part.

I have never used the [anonymised] Intranet because:

| | |
|---|--|
| I did not know about it | |
| I knew about it but am unable to access it | |
| I would like to use it but do not know what it contains | |
| I would like to use it but do not have sufficient time | |
| Other (please specify) | |

If you ticked 'I knew about it but am unable to access it', please describe the reasons why this is so:

| |
|--|
| |
|--|

6. Your IT experience.

Please describe your level of experience with Information Technology (IT) in general, and the internet (the 'World Wide Web', e-mail, and intranets other than the [anonymised]'s) in particular.

| | Experience | | |
|------------------------|------------|--------|------|
| | Low | Medium | High |
| Information Technology | | | |
| World Wide Web | | | |
| E-mail | | | |
| Other intranets | | | |

7. You may leave this part blank if you would prefer.

What is your staff role within the [anonymised] ?

.....

For how long have you been employed in this role ?

.....

What is your workplace or department ?

.....

Where is your nearest point of access to the [anonymised] Intranet ?

.....

For how long has access to the [anonymised] Intranet been available to you ?

.....

+++++

Volunteers are requested for a follow-up study. Please refer to the final page.

Thank you for your time.

VOLUNTEERS FOR FOLLOW-UP STUDY OF THE [anonymised] INTRANET

We are seeking volunteers for a follow-up study of the use made of the [anonymised] Intranet. We would very much appreciate your participation in this study. If you would be willing to be interviewed in your work place concerning your use of the Intranet, please read the information on this form and complete the rest of the form. Thank you.

You do not have to take part in this study if you do not want to. If you decide to take part you may withdraw at any time without having to give a reason.

Only complete this part of the questionnaire if you are willing to take part in a follow-up study which involves being interviewed in your place of work while making use of the [anonymised] Intranet. This is anticipated to take no more than one hour. The interview will include your pattern of use of the Intranet, the parts of the Intranet which you regularly use, any further comments on the Intranet, and any suggestions regarding other healthcare-related IT to which you have access.

If you need to get authorisation from your line manager or supervisor (who will be aware of the study) please use the form to do so.

Confidentiality: we will ensure that all data about participating individuals is kept in a form that does not allow individuals to be identified. We will not be recording any information about individual patients or observing any medical procedures.

+++++

Consent form: [anonymised] Intranet project

Name (please print):

I understand the purpose of this project, and am willing to participate in the study. I am aware that I am free to withdraw from the study at any time.

Signature of participant:

Date:

Contact details:

Staff role:

Work location:

Work telephone:

Work e-mail address:

Line manager/supervisor authorisation (if required):

I give permission for to participate in this project as described.

Authorising signature:

Date:

Name (please print):

APPENDIX B: Interview Structure (anonymised)

[Anonymised] Intranet & Internet Interviews

Permission to tape/record

1. Intro

If following up questionnaire data:

- Confirm which parts/pages of Intranet stated, and frequencies

If not:

- What parts/pages used/accessed, when and how often
- Are you aware of the difference between (the [Anonymised]) Intranet and (the [Anonymised]) Internet ?
- What kinds of information do you expect to find on each ?
- From your memory, how is information accessed and how do you access it ?
- What training have you had in using the Intranet and ([Anonymised]) Internet ? Sufficient ? More ?

2. Intranet usage & access

- What kind of (Intranet-based) information is 'important' for you in your work role ?
- What information (etc) is 'useful' (e.g. frequently accessed, ease of access over paper)
- What information do you continue to access in paper form rather than Intranet ?
- Where do you access the Intranet from ?
- Do you access it from more than one place (in the [Anonymised]) ?
- Ease/difficulty of access ? Shared access ? Time constraints ?

4. Internet usage and access

- Do you look at the [Anonymised] (NHSNet) Internet pages ? When, why ?
- (Confirm from questionnaire, or ask:) Do you use the external (eg NHS) links from the Intranet ?
- Do you access the Internet from the same place(s) ? Or elsewhere in the [Anonymised] ?
- Do you have separate access to the Internet, eg at home?
- If so, do you use this to access work-related sites ?

5. Intranet structure & content

If looking at Intranet:

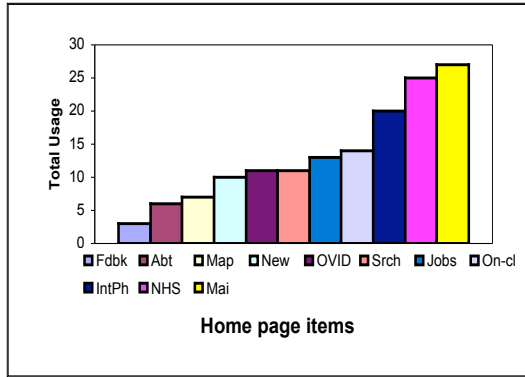
- Any comments about the way it is structured ?
- (Refer to questionnaire data, if any): Any suggestions for content not currently available ?
- Do you / have you uploaded material to Intranet ? Would this be useful ? Like to know how ?

6. Wider issues:

- Awareness of what web-based IT is available to you ?
- Other web-based IT (eg databases) which you use ?

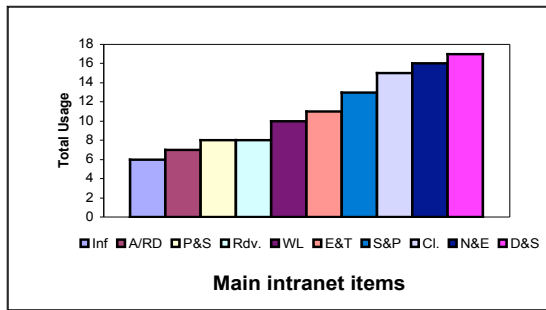
7. Other

- Any other comments you want to make about Intranet/Internet/IT access at the [Anonymised] ?



- Key**
- Fdbk Intranet feedback
 - Abt About the Intranet
 - Map (Intranet) site map
 - New What's new (on the Intranet)
 - OVID OVID and library
 - Srch (Intranet) search
 - Jobs Job vacancies
 - On-cl On call rota & bleep list
 - IntPh Internal phone book
 - NHS Links to Internet & NHSnet
 - Mai External phone & e-mail services

Figure 1: Total usage patterns for home page items. Usage = number of respondents citing the item as having been accessed at least once.



- Key**
- Inf Useful Information
 - A/RD Audit, Research & Development
 - P&S Performance & Statistics
 - Rdv. Hospital Redevelopment
 - WL Improving Working Lives
 - E&T Education & Training
 - S&P Strategies & Policies
 - Cl. Clinical Policies, Guidelines & Procedures
 - N&E News & Events
 - D&S Departments & Services

Figure 2: Total usage patterns for main intranet items. Usage = number of respondents citing the item as having been accessed at least once.

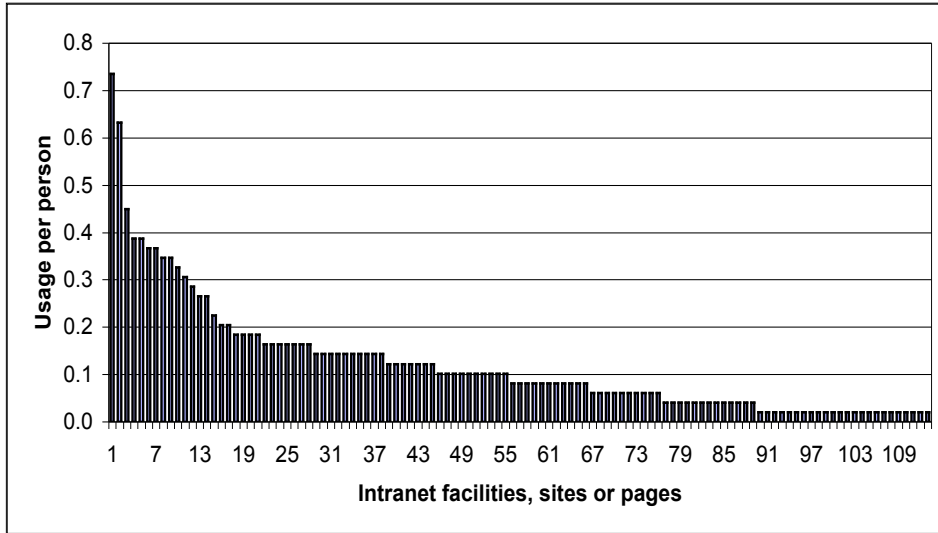


Figure 3. Distribution of usage per person across 113 facilities, sites or pages. Usage = number of times an item was cited as having been accessed at least once by any respondent.

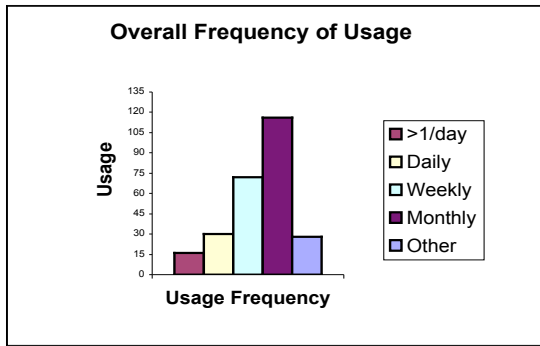


Figure 4: Aggregated usage frequencies, all respondents. Usage = total numbers of times any items were cited by any respondent as having been accessed at least once within each frequency band.

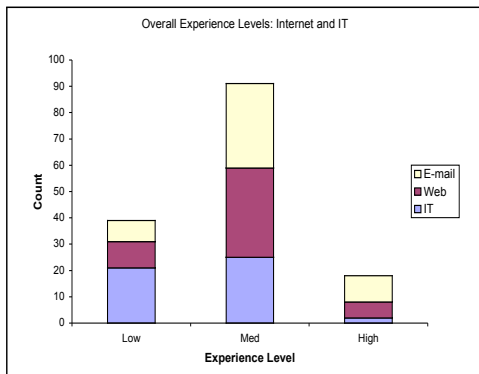


Figure 5: Expressed experience levels with the internet and IT, all respondents. Count = total expressions of experience level for each of three domains.