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## Health Science Libraries: future trends

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## **Health Science Libraries: future trends**

### **Kate Kelly**

The European Association for Health Information and Libraries is holding its biannual Workshop in Dublin in June 2009, courtesy of a successful proposal by the Irish Health Sciences Libraries Group (HSLG). In anticipation of the event, which will see a large gathering of health sciences librarians and information professionals from Europe and further afield, it is timely to take a look at health sciences librarians and libraries and the issues and trends which are shaping them – some of which are shared in common with every other type of library and some that are unique to the health sector.

### **Health Sciences Libraries**

In Ireland, health librarians operate largely within three environments:

- Academic medical, nursing or health sciences libraries in the universities and higher education sector
- Hospital and health services libraries within the Health Services Executive (HSE)
- Libraries with a focus on health in voluntary, private, government, state and semi-state agencies.

Librarians or information specialists in each of these categories provide resources and services that support the teaching and learning, clinical practice and research activities undertaken in these settings.

### **A Vision for 2015 and Issues for Health Sciences Libraries**

In 2005 Lindberg and Humphreys, both of the US National Library of Medicine (NLM), the world's largest medical library and producer of the MEDLINE database, looked forward to 2015 and predicted the following for health sciences libraries:

- Health sciences libraries with largely electronic only collections.
- Multiple computing and telecommunications devices from desktop to portable to wearable being used, many of which would also be capable of supporting teleconferencing and distance education.

- Easy access to electronic information from home, offices, wards, clinics and libraries as well as while en route to and from any of these places.
- Patients having access to the same information as health care professionals.
- Changing user environments, information products and licensing provisions as normal and librarians as institutional managers of complex agreements for information resources.
- Librarians and health information specialists increasingly working “in context” outside the library “to improve quality, to reduce the risks associated with inefficient or incomplete retrieval of the available evidence and to do community outreach”.
- Librarians having “advanced” training in both information science and a relevant subject area.
- Physical spaces where “in addition to serving coffee, the best facilities support small-group study and larger-group training, provide well-wired space for interdisciplinary collaboration involving complex electronic data sets, and welcome those seeking temporary work space, individual assistance, or quiet places away from wards or waiting rooms. With no printed *Index Medicus* and fewer physical volumes, there is more space for people.” (Lindberg 2005)

While Lindberg and Humphreys were future gazing, everything they envisaged had a basis in technologies and services that already existed in some shape or form in 2005. Implicit among their predictions are that health librarians will be dealing with issues concerning: the use of space; information retrieval; the increased involvement of patients with health care decision -making; new roles and new places of work. So in terms of the vision and the issues raised, where are health sciences libraries and librarians currently placed?

### **Space**

Seeking to assist health sciences librarians in designing new library spaces, a panel of thirty experts, including health sciences librarians, architects and information technologists, was convened in 2005 to “reflect on the likelihood, desirability, timing, and impact on building design of more than seventy possible changes in the use of library space”. Using the Delphi technique, the study of the library as place by Ludwig and Starr

found clear areas of agreement and disagreement about what health sciences libraries would look like and what roles health sciences librarians would undertake by 2010 to 2015. The experts strongly agreed that health sciences librarians would take on a wide variety of new roles, from informationists and educators to archivists and knowledge managers, and that these new roles would in turn produce radical changes in library design, library spaces and the “adjacencies of those spaces to each other, staff and to users”. They strongly agreed that wireless and highly personal portable devices would be ubiquitous and that space left by reduced collections would be filled with a variety of new services ranging from classrooms to visualization laboratories to consumer health collections. In fact, 96% of experts agreed with the statement that “consumer health services open to the public would be an essential component of a health sciences library by 2010”. There was also strong agreement that by 2010 there would be little need to provide desktop machines and that the impact of this would be easy to see – fewer computer tables, cords and printers, more furniture and seating suited to using wireless devices and more classroom or group room spaces suitably equipped with “advanced technologies”. The same experts strongly disagreed with a statement that “smart buildings that provide their own supervision and security would exist”, on the grounds that the cost of such a move would be “prohibitive”. They also disagreed strongly with the statement that “the role of the health sciences library in providing user support for use of technology will disappear with a new generation of technologically sophisticated users and advances in user-friendly technology”, believing that health care professionals are too busy **not** to use the expertise of trained professionals as a resource. (Ludwig 2005)

By 2015, the expert panel said, there would be less consistency about how space will be used as it will be tailored to meet institutional needs. The Welch Medical Library at Johns Hopkins University and the Lane Medical Library at Stanford provide two current examples of how the shift in thinking about roles and services at an institutional level results in very different plans for space.

The master plan for the Welch Medical Library at Johns Hopkins University in the USA describes a vision for a “distributed information services network that is both physical

and virtual”. The “distributed” piece of this vision appears in the form of the “Welch Information Suites” which are described as being both a physical location that promotes collaboration between information professionals or a virtual collection such as a digital library or a flexible, collaborative educational format for exchanging skills and information. The key aspect of the “information suites” is collaboration and the availability of librarians at specific locations (physically and virtually) at specified times coupled with a targeting of resources to specific groups – for example the oncology or public health information suites. The Welch library sees this as extending the “walls” of the virtual library into the physical campus and as complementary to electronic resources and services. The emphasis is not on the central location but on the availability of services at point of need – outside the library. The Welch library itself will be transformed into a “Center for Facilitated Discovery”, a “destination for collegial interaction, study with historical collections and celebration of institutional history and accomplishments”. A new “Knowledge Center” is being built with a focus on knowledge management, technology development and training. (3, 4).

In contrast, the Lane Library and Knowledge Management Center at Stanford, with over 90% of its content available in digital format, aims also to deliver services at point of need and to create physical and virtual hubs. The electronic resource portals for clinicians will be complemented by a physical space that will contain technology-enhanced study settings, distributed learning commons, and specialized resource training providing information on demand to students, researchers, and doctors on campus or in the community. (5)

### **Evidence-based Practice and Information Retrieval**

Increasingly the role of health science librarians is associated with the practice of evidence-based healthcare through supporting access to published evidence which in turn supports different health-related activities and decision making. In this regard a review of the NHS health library services in England identified four key purposes of health libraries, namely to support:

- 1) clinical decision-making by patients, carers and health professionals

2) commissioning decision and health policy -making

3) research and

4) lifelong learning by health professionals. (6)

While the same forces that have shaped changes in libraries generally (the Internet, delivery of information to the desktop or mobile device, open access publishing etc.) have also impacted on health sciences libraries, it is the association with “evidence”, and evidence not just for health professionals but for patients and public too, that is significantly driving health sciences librarians and libraries in new directions.

Health care professionals and students are increasingly asked to practise evidence-based health care by basing decisions on published research evidence and practice guidelines. In 1986 Haynes estimated that to keep up with the literature a practitioner needed to read 5,500 articles a day published in 20,000 biomedical journals. (Haynes 1986) Thompson estimates that today there are close to 40,000 biomedical journals and suggests the number of articles needed to be read to keep up to date is now 10,000 per day. (Thompson 2007)) It is estimated that approximately 2000 articles per day are added to the more than eleven million existing records in the Pubmed database alone. (Smith 2004) This applies only to the published literature and says nothing about the explosion of information from educational, government and professional sources alone on the Internet.

Irish public policy documents such as *Making Knowledge Work for Health*, *National Information Strategy* and *Quality and Fairness: a Health System for You* (the National Health Strategy) highlight evidence-based practice and the necessity of using knowledge-based resources to do this. (Ireland 2001a, 2001b and 2004) The Buttimer Report on post-graduate medical education in Ireland states that “doctors require an ongoing programme of information skills training if they are to achieve self-sufficiency and confidence in retrieving the information necessary for evidence-based practice” and explicitly recommends “ensure that doctors are practised in information retrieval skills required by evidence-based practices”. (Ireland 2006a) The Fottrell Report on undergraduate medical education advises that all medical education programmes address

the theme of “preparation for life-long learning and the changing knowledge, technological and practice environment.” (Ireland 2006b) The Standards for Nurse Registration Education Programmes have a learning outcome of “demonstrate a knowledge base and a level of competence in clinical practice skills essential for safe practice, which are grounded in recent evidence based nursing research, where available”. (Bord Altranais 2005)

Supporting the acquisition of sophisticated information retrieval skills by health care professionals by providing information skills training is a core function of all health science librarians. Providing training at a level which enables clinicians to access and retrieve “evidence” not only necessitates librarians having excellent knowledge of biomedical resources, familiarity with medical terminology and excellent information retrieval skill themselves but also requires an understanding of health services structures, health research methods, study designs, critical appraisal methodology and at least a nodding acquaintance with the terminology and practices of epidemiology. Getting and keeping these types of skills requires a commitment to continuing professional development. In this respect, the HSLG has one of the most active CPD calendars and has offered CPD courses in evidence-based practice and other relevant issues on a regular basis.

### **Patients and Healthcare**

Two inter-related issues with regard to health information for patients and individuals with a health information need are access to quality information and the ability to understand and interpret health information. In this regard health information literacy and consumer health information services are linked issues both of which are likely to become increasingly prominent in Ireland in the future

#### Health Information Literacy

Patients can be faced with having to make decisions about their treatment based on complex and sometimes confusing health information. Daily reports of new studies in the diagnosis and treatment of conditions can add to the confusion. As patients are



increasingly participating in decisions about their care, health information literacy is becoming a growing issue. While health information literacy is a comparatively new concept in Ireland it has been well documented and studied, most notably in the USA. The US Medical Library Association (MLA) has had a Health Information Literacy project running for a number of years, one outcome of which has been the Health Information Literacy Curriculum. This, and a wealth of other resources both for information professionals, health educators and consumers, can be found on MLANet, the organisation's website.(MLA 2008) Closer to home, the National Adult Literacy Association (NALA) initiated a National Health Literacy Campaign in 2007 and aims to make the Irish health service "literacy friendly", where literacy is not a barrier to health. (NALA 2008)

### Consumer Health

Consumer health information services are often hospital based, but can also be based in communities within public libraries, for example, the bibliotherapy programmes via Dublin City Public Libraries, or as stand -alone entities in shopping centres.

As indicated by the Delphi study previously cited, consumer health information services are considered standard service offered by health sciences libraries of the future. (Ludwig 2005) In the USA they are common at hospitals of all sizes and may be general or specialist, for example, the Massachusetts General Hospital (MGH) has both a central Patient and Family Learning Centre available to all patients and their families plus the specialist Cancer Resource Room – a collaborative partnership between the Treadwell Library at MGH and the hospital's Social Work Department – which provides information for oncology patients and their families or caregivers. What these types of services do is provide a continuum of authoritative information on health matters for lay people in an environment which can also offer access to further supports and resources. As several studies on the use of the Internet have found that searching for health information is one of the most often cited reasons for using the Internet, access to authoritative, accurate information is increasingly an issue. A recent survey by the Health Research Board (HRB) found substantial numbers of people in Ireland either

using or wanting to use the Internet to find information on health. The survey also found that large numbers of people with disabilities and with mental health issues were using the Internet as both a source of information and of support. (Gallagher 2008) Clearly, there are roles for health sciences librarians as specialists in health information in providing quality information services either directly to patients or indirectly via their health care providers.

### **New Roles and New Places of Work**

#### Informationists

The term “informationist” was used by Florence and Davidoff in 2000 in an article proposing a new professional – an informationist - who would operate within a clinical environment providing highly specialised information services to health care providers. These new professionals would be trained in both information science and clinical sciences in order to find, synthesise and present information to clinical medical teams on a routine basis – they would be a full team member. Implicitly they would operate not in a library but outside “in context”. (Davidoff 2000) The concept of the informationist is still very new and in a recent systematic review examining current practice and programme models Rankin et al conclude that the concept is still at “early adopter” stage. They state that the generalist librarian needs to be superseded by a more specialist health sciences librarian “paralleling the health care environment in which they work”, and that an embedded informationist is more likely to succeed than an impersonal information service provided at a distance. Subject expertise is essential, and programmatic emphasis should be placed on technical and service excellence. (Rankin 2008) These conclusions are relevant to all health sciences librarians but particularly those operating within hospital environments where the information service, if it has not already done so, will become ever more “distant”, given the obvious preference for desktop or mobile access to information. A current study by Beatrice Doran (former Chief Librarian at RCSI) at Beaumont Hospital, Dublin seeks to provide data on the possible value of a clinical informationist in an Irish hospital. Clinical informationist is an extension of the existing clinical librarian role which in itself is a constantly evolving concept and may be more easily aspired to than that of informationist, depending on the context.

### Knowledge Managers

The concept of knowledge manager or knowledge officer is one that has been mooted within the context of the UK NHS by Peter Hill in his review of the NHS library service. Envisaged as a role rather than a job the function of such a role would be to enhance the management, sharing delivery and application of best available evidence to facilitate knowledge-based strategic, operational and clinical planning activity. Hill sees health librarians as well placed to undertake this role. (Hill 2008a, 2008b)

Extending this theme the Association of Academic Health Sciences Libraries in its 2003 policy statement on *Knowledge Management within the Academic Health Center* describes the role of the academic health sciences library as that of “institutional knowledge coach whose primary focus is on the success of institutional teams through services, education and effective knowledge management”. ( AAHSL 2003) Kronenfeld identified this institutional focus on information management as one of seven trends taking place in leading health sciences libraries in 2005. He described the trend as “a shift of the academic health centers to create an increasingly standardized and integrated computer-based operation that impacts on all aspects of the institution. Examples of computer-based operations include: the computerized patient record, the increasing capability of clinical and management information systems to aggregate information for quality control and research, and the increasing need for “point of care” and “just in time” access to knowledge-based information (KBI) for clinicians. (Kronenfeld 2005)

### **Royal College of Surgeons in Ireland(RCSI)**

For the RCSI libraries, as pure health sciences libraries, these issues are particularly relevant. RCSI has three libraries: the Mercer Library at the main RCSI campus in St. Stephen’s Green, Beaumont Hospital Library in Dublin, and the Learning Resource Centre in the RCSI Medical University of Bahrain (RCSI MUB). Much of 2007 has been spent reviewing and evaluating services as a staff while also seeking the views and opinions of our users about the library via a series of six focus groups and a space feasibility study user group. As a result the library staff as a whole has envisaged an integrated library service that incorporates current best practice within health libraries.

## **Space**

RCSI collections were dramatically reduced several years ago, and we do not envisage them growing beyond their present size – if anything they will become smaller. We plan to have an all electronic journal collection by the end of 2009 and to continue to grow the electronic textbook collection. The small physical collection has provided the opportunity to focus on people rather than on the collections in terms of how the physical space is configured. All incoming RCSI students are provided with a laptop when registering, and wireless networking is the norm within the College. Students on rotations are provided with Internet access to connect both to course information delivered via the RCSI VLE and to electronic library resources. The information environment within RCSI is, therefore, already heavily electronic.

A recently completed feasibility study on refurbishing the current Mercer Library at the RCSI has been based on some of the key premises identified in the studies cited, specifically reduced collection size, wireless ubiquity and new service opportunities within the library. Pushing the collections to the periphery of the space, the feasibility study demonstrated the options for accommodating different learning styles through providing a range of different types of spaces for individuals and groups; to provide collaborative, interactive space – social space. As much modularity and flexibility as possible was incorporated so that users as well as staff can, for example, arrange and rearrange seating configurations to suit group sizes. New needs identified by students included space to practice clinical skills and make presentations and, while a multi-functional technology laboratory space was included in the plans, hardwired PC labs were excluded.

## **Evidence-based Practice and Information Retrieval**

RCSI librarians based in Dublin have a strong tradition of teaching information skills to students from all RCSI schools – medicine, nursing, physiotherapy, pharmacy and healthcare management. The Learning Resource Centre in RCSI Bahrain provides a twelve lecture embedded module, “Research Skills for Health”, within the undergraduate

nursing curriculum which is delivered and assessed by the Assistant Librarian. A review of the medical curriculum and the preparation for the World Federation of Medical Schools accreditation visit in November 2008 provided an opportunity to rethink the information skills programme and to propose a modular skills progression approach to teaching these skills. The new RCSI Medical Graduate Profile (MGP) identifies the competencies and knowledge that all RCSI medical students should have upon graduating, and being information literate is included as a specific outcome and is articulated within the fifth theme of the MGP as follows:

5.7.1. Recognises a need for information

5.7.2. Finds, critically evaluates, manages and synthesises with existing information to create new understanding

5.7.3 Understands the ethical issues involved in information retrieval and management, including plagiarism and confidentiality.

The formal inclusion of these competencies in the MGP is an acknowledgement of the importance of these skills to practice – they are critical. The assessment of these skills is also under discussion, and there is general agreement that librarians who teach these skills should also assess them.

### **Patients and Healthcare**

The RCSI is a registered charity and a non-profit organisation with a range of community and philanthropic initiatives both in Ireland and abroad. The Mini Med School run by the RCSI provides an introduction to interested members of the public to various aspects of medical practice and biomedical research. This year the library proposed “Information for Health” as a topic of interest to the general public. The suggestion was successful and has been included in this year’s Mini Med School programme. It is intended to seek similar opportunities to contribute to College community initiatives.

### **New Roles and New Places of Work**

An implicit assumption of many of the envisaged new roles is that they will be collaborative. One of the values adopted and articulated by library staff as part of the

review of services is that of being “collaborative”. To this end, offering the skills of librarians in projects that either require or could be improved by the input of an information specialist is an explicit objective. This can be as specific as giving an opinion on the use of metadata for a digital assets management project for the E-Learning Department, or as broad as being on a project team for the development of a staff information portal. It includes working with Estates and Buildings to produce an institutional policy document on the management of archives and artifacts and providing the President’s Office with advice on records management. The aim is to be seen as an institutional asset with a specialist skill set in information management.

### **Summary**

In summary, these are interesting times to be a librarian and particularly a health sciences librarian. It is likely that health sciences librarians will be involved in diverse activities outside the library, be integrated into curriculum and research activities and provide education and training in support of evidence-based practice. These activities will require a high level of increasingly sophisticated skills and will involve health sciences librarians having increasing contact with patients and community service initiatives. The potential to take on a wider knowledge management role is also possible but to what extent remains to be seen.

William Osler, widely regarded as the founder of modern medicine, believed medical education took place best at the bedside, not in the classroom. A visionary in both the practice of medicine and medical education, his comments about librarians, as opposed to libraries, are a helpful reminder of the role of a health sciences librarian in health care. By placing the emphasis on the librarian he focused on what librarians do as opposed to where we do it. The “what, “ as opposed to the “where”, is more relevant today than ever before.

*“The librarian of today, and it will be true still more of the librarians of tomorrow, are not fiery dragons interposed between the people and the books.*

*They are useful public servants, who manage libraries in the interest of the public...*

*Many still think that a great reader, or a writer of books, will make an excellent librarian. This is pure fallacy.”*

Sir William Osler, 1917

**Post Script**

To learn more about the activities of health sciences librarians and libraries in Europe, why not attend the EAHIL workshop in June?

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