

## **Value of a manageable research life cycle for LIS: a cancer library exploring the needs of clinicians and researchers as example**

Ina Fourie, Department of Information Science, University of Pretoria, Lynnwood Road, Pretoria, 0002, South Africa. Email: [ina.fourie@up.ac.za](mailto:ina.fourie@up.ac.za) (corresponding author)

Suzanne Bakker M.Sc, Central Cancer Library, The Netherlands Cancer Institute, Amsterdam, The Netherlands. E-mail: [s.bakker@nki.nl](mailto:s.bakker@nki.nl)

### **Author biographies:**

**Ina Fourie:** Dr Ina Fourie is professor at the Department of Information Science, University of Pretoria, South Africa. She joined the Department in 2001 when leaving the University of South Africa (Unisa – a distance teaching university) where she lectured since 1988. Her teaching and research interests include amongst other information behaviour (especially in healthcare contexts such as cancer and palliative care), information literacy, information retrieval, and current awareness services. She serves on the editorial advisory board of a number of international and local journals and regularly speaks at national and international conferences.

**Suzanne Bakker:** Suzanne Bakker entered the library profession in 1984 as the director of academic medical libraries, first in Nijmegen, thereafter in Amsterdam, and since 1998 as the director and information specialist of the Central Cancer Library of the Netherlands Cancer Institute in Amsterdam. She holds a M.Sc. in Biochemistry & Medical Sciences of the University of Amsterdam and was a lecturer of medical sciences at several colleges before entering medical librarianship. She has been involved in EAHIL (European Association of Health Information and Libraries) since 1988, serving as a member in EAHIL Board since 1999, later as President (2007-2010) and Past-President (2011-2012). Since November 2010 she is the Treasurer of the Biomedical Information Group of the Dutch Library Association, in which organization she is chairing the continuing education committee for more than two decades. Her professional interests include: clinical librarianship, bibliometrics and scientometrics, instruction for end-users and continuing education for medical librarians.

### **Abstract:**

*Purpose:* To cope with changes in user information behaviour and needs, libraries and information services (LIS) must find manageable ways for on-going research and improvement. A model for a manageable research cycle was piloted at the Central Cancer Library, The Netherlands Cancer Institute (Amsterdam).

*Approach:* Institute employees (24) (users and non-users of the Central Cancer Library; mostly clinicians and researchers) were interviewed using an interview schedule (individually, pairs of two and small groups). Demographic details were collected through a short questionnaire. It was intended as a small scale project, to demonstrate the value of the model.

*Findings:* Although setup as a pilot study (small scale and a limited time period) and not representative of the Institute, cancer libraries or other library types, a good idea was gained on LIS needs. Opportunities for improvement of LIS and further research are noted, as well as the need for LIS to then consider their internal structure and support systems before making further decisions.

*Research implications:* Findings from small scale projects need to be assessed against the theory of information behaviour to work towards a theoretical model.

*Practical implications:* LIS needs to find ways for manageable, on-going research e.g. according to a manageable research life cycle model.

*Originality:* Research on cancer library services is limited; the originality of the paper however, is in showing how small scale and manageable research can add value in practice.

Keywords: Library and information services, cancer library, research model, user needs, clinicians, researchers

Conceptual paper

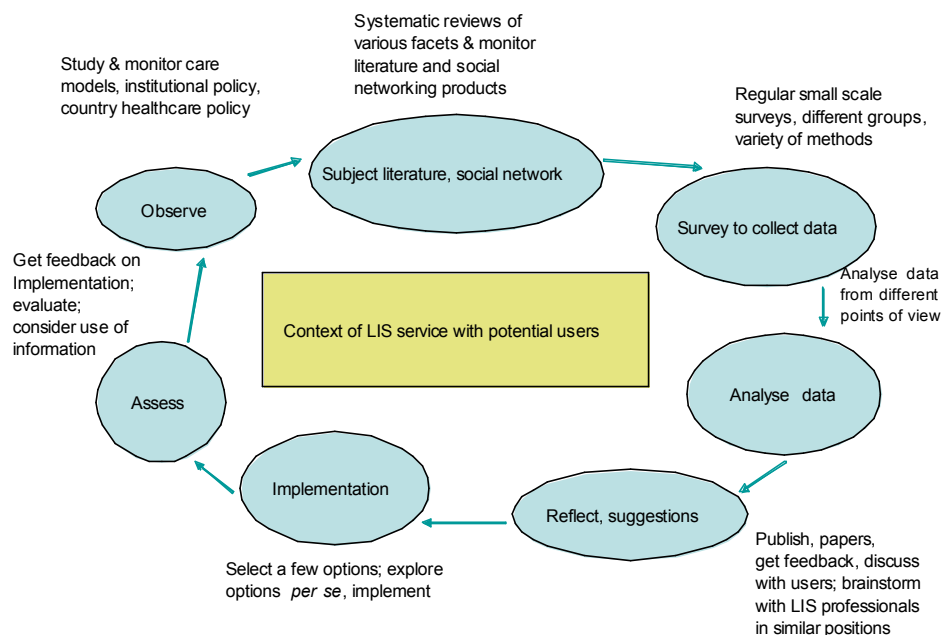
## 1 INTRODUCTION

Cancer treatment and research is nested in a diverse and often multidisciplinary field, operating in a dynamic environment, and facing an increasing number of cancer patients (Ahmedin, 2010). Although there is a number of libraries and information services (LIS) serving cancer research, oncologists and other oncology professionals e.g. as reflected in membership of the Medical Library Association (MLA) interest group for cancer librarians (<http://www.selu.com/cancerlib/>), little has been published about services and their evaluation in cancer context (Fourie and Bakker, 2009a, b; Grosman, 2000; Tan *et al* 2006; Thain and Wales, 2005; Truccolo *et al.*, 2006 being exceptions). The same applies to other LIS serving a diversity of users facing dynamic environments. They are required to note the needs of users in such contexts and to adapt accordingly (Lancaster, 1999; Powell, 2006), and to do research and note trends and changes in demands in a timely manner (Booth and Brice, 2003; Jerome, 2008; Lewis and Cotter, 2007; Rosall *et al.*, 2008). Often, however, facing serious time constraints and even limited experience in doing research and collecting such data (Fenske and Ward, 1992; Koufogiannakis and Crumley, 2008).

This paper reports on a pilot study according to a model proposed by Fourie and Bakker (2009a) for a manageable research life cycle that might enable LIS professionals to note the needs of their users and adapt library and information (LIS) services on an on-going basis with acknowledgement of time constraints, limited experience, etc. The pilot study was conducted at the Central Cancer Library of The Netherlands Cancer Institute (Amsterdam) and was aimed at mostly clinicians and researchers (a small group) and establishing how the Library can cater for their diverse information needs. The paper covers the following: explanation of the manageable research life cycle model, background on the Central Cancer Library and The Netherlands Cancer Institute as context for the pilot study, a brief rationale for an on-going and evolving evaluation of LIS, a brief review of related studies, explanation of the methodology for the pilot study, findings and analysis of the pilot study and the value thereof for LIS services as well as suggestions for LIS from cancer and other spectrums. (Although the term "Library" will be used when discussing the pilot study at the Central Cancer Library the acronym LIS will be used when applying discussion to the wider contexts.)

## 2 MODEL FOR A MANAGEABLE RESEARCH LIFE CYCLE

Fourie and Bakker (2009a) initially proposed their model for a manageable research life cycle following their work with mostly nurses and specialists in psycho-oncology. It was intended to enable LIS professionals to support LIS in the continuing adaptation of their services and collections to the needs of the populations they serve along with the rapid changes and demands faced by all. The cyclic model is depicted in Figure 1.



**Figure 1: Manageable research cycle for improving library and information services on an on-going and evolving basis (Fourie and Bakker, 2009a)**

The model is briefly explained:

Steps in model	Explanation of steps	Application to pilot study
Consider context of LIS service and potential users (i.e. population served)	The institutional vision, mission, culture, infrastructure and resources will have an important impact on what is expected from the population, including the users served by a LIS, their task completion, etc. Importance of considering the environment is also stressed in the information retrieval model by Ingwersen and Järvelin (2005). In healthcare contexts, it seems especially important to study and monitor care models, institutional policy, country healthcare policy, etc. Other issues may apply to other contexts.	Background discussion on the Central Cancer Library and The Netherlands Cancer Institute.
Observe	The behaviour of the population served by a LIS can be observed e.g. people not using the service or not requesting publications through interlibrary lending. This can then instigate the focus of a pilot study. Such observation can also be instigated from the subject literature. Younger (2011) reports that a lack of awareness of institutional libraries is a potential enabler amongst doctors and nurses to use online information resources rather than a LIS.	Following earlier studies with mostly nurses and specialists in psycho-oncology, and observation of use of the Library (Fourie and Bakker, 2009b) it seemed appropriate to involve clinicians and researchers for this round of data collection.
Learn from subject literature, social network	Systematic reviews of various facets, monitoring the literature through current awareness services such as RSS feeds, profiles against databases, and using social networking products.	A review of the appropriate literature in information behaviour, user studies, library services, and with the specific target group is an important point of departure. Due to length constraints, this is only partially reflected in this paper.
Use surveys to collect	Regular small scale surveys, different	In addition to earlier studies with

data	groups, variety of methods	<p>mostly nurses and specialists in psycho-oncology (Fourie and Bakker, 2009a), this pilot study focused on clinicians and researchers in the field of oncology.</p> <p>Personal encounters (although more time-consuming) is more open for participants to discuss their needs, perceptions, expectations, problems and experiences. Librarians can mention and explain services and address misconceptions (e.g. about the focus of the library collection on more than just oncology).</p>
Analyse data	Analyse data from different points of view	A preliminary analysis of findings is offered. This can be taken to a next level by an in-depth comparison with findings from other or related projects. Taking either a practical or theoretical stand (or a combination) can also affect how data is interpreted.
Reflect, offer suggestions	Publish, present conference papers, get feedback, discuss with users, brainstorm with other LIS professionals in similar positions	The feedback on earlier publications (e.g. Fourie and Bakker, 2009a) shaped approaches in doing the research and reflecting on it. The need for such reflection is also stressed by Forrest (2008) and Grant (2007). The process of reporting research results also enforces the need for reflection.
Implement (according to LIS context and resources)	Select a few options; explore options <i>per se</i> ; implement	Although the paper identifies needs for services, it remains the prerogative of the Library to decide what can and need to be implemented. The same will apply to other LIS. If a decision is made to focus on specific needs this can be further explored by means of literature studies and/or further data collection on the specific issue. Fourie (2011a) has e.g. been promoting the use of personal information management (PIM) based on the findings from the pilot study reported here.
Assess	Get feedback on implementation; evaluate; consider use of information	If any changes are made to the service, this again needs to be evaluated. (This steps not covered in this paper.)

On-going reflection, reading and discussion with colleagues is essential to the success of the proposed model. Much can be learned from articles such as Lewis and Cotter (2007) on the type of questions LIS professionals should raise, Elderedge (2004) on an inventory of research methods for librarianship and informatics, Booth and Brice (2003) on the formulation of good research questions and on a more theoretical level the edited volume by Spink and Heinström (2011): *New directions in information behaviour*.

### 3 BACKGROUND ON THE ENVIRONMENT

#### 3.1 Central Cancer Library

Worldwide the number of specialized cancer libraries is low, notwithstanding the huge amount of cancer research and oncology treatments that take place. Many

cancer research institutes and oncology hospitals are part of or are closely collaborating with academic medical centres and universities and therefore rely on the services of the parent institutes.

The Central Cancer Library (<http://www.nki.nl/Ziekenhuis/Professionals/Bibliotheek/>) offers services to staff of The Netherlands Cancer Institute and the Antoni van Leeuwenhoek Hospital (NKI-AVL). These include access to subscribed digital resources (journals, e-books, databases), a current awareness service (CAS) (i.e. services to stay abreast of new information and developments) based on PubMed, interlibrary lending, specialized book collection, literature searching and information retrieval services, database management, building bibliographic databases and providing bibliometric analyses.

### **3.2 The Netherlands Cancer Institute**

The Netherlands Cancer Institute was established on October 10, 1913, and is involved in fundamental, clinical and translational research. It consists of several cancer related research departments and a categorial oncology hospital, named after the Dutch microscopist, Antoni van Leeuwenhoek (1632 – 1723). It applies research findings in clinical settings.

Although the survey participants did not express pressure to publish, they (when asked) mentioned that they consider keeping up with the literature, doing research and publishing papers as part of their professional development and quality performance. Citations and journal impact is very important to the Institute regarding research funding and for competition in national and international comparisons. The Library provides annual listings of these data with impact factors of journals and 2-year citation counts (see e.g. <http://tinyurl.com/NKIAVL2010bibliogr> & <http://tinyurl.com/NKI2007cit>).

Research divisions range from basic research (e.g. biochemistry, cell biology, genetics) to translational research and more applied areas e.g. psycho-oncology and epidemiology. Clinical research is addressed by medical oncology, surgical oncology, radiotherapy, diagnostic oncology (*The Netherlands Cancer Institute Scientific Annual Report, 2010*); thus a wide spectrum of task and research interest that can be supported by LIS.

## **4 REVIEW OF RELATED STUDIES**

From the literature on information behaviour (Case, 2007; Spink and Heinström, 2011) context and a number of other factors seem to influence information behaviour (including needs, seeking, searching and use; it also includes not recognising or not reacting to information needs) (Fourie and Claasen-Veldsman, 2007; Fourie and Bakker, 2009a). From these, tasks (Ingwersen and Järvelin, 2005; Vakkari, 2003) expertise, experience and educational background seem especially important. There is a close link between roles and tasks (sometimes not clearly distinguished), and between these and information seeking. Fourie and Bakker (2009a) (with an earlier study at the Central Cancer Library) refer to the roles of management and supervision, education, research, studies, and gatekeeping, with tasks including the writing of clinical guidelines and treatment protocols, patient education, counselling, training, research and quality management.

There are many reasons why healthcare professionals do not use library and information services, databases, the Internet or CAS e.g. lack of time, access, and

skills, and information not being considered relevant to task completion (Fourie and Bakker, 2009a; Wilson, 1999).

### 3 METHODOLOGY

This section reports on a pilot study conducted at the Central Cancer Library to test the value of the model (Figure 1) and to gain insight on adapting the Library's service.

Evaluation and user studies mostly depend on questionnaires, interviews or focus group interviews; notwithstanding the difficulty in recruiting and involving participants (Case, 2007; Fourie and Claasen-Veldsman, 2007). Noting the need for surveys representative of the population served, it is not always possible in healthcare contexts, where client/user relationships and maintaining goodwill can be more important. Although aiming at sound methodology, practical realities featured strongly in the reported pilot survey. In earlier studies Fourie and Bakker (2009a) found questionnaires and focus group interviews meaningful for nurses and specialists in psycho-oncology. Fourie and Claasen-Veldsman (2007) had to rely on mostly individual interviews. The survey reported here used brief questionnaires to collect demographic and task-related data and mostly individual interviews, with a few paired and small group interviews. Observation and brief interviews during two training sessions on Reference Manager were also included.

Following convenience of sampling, participants (library users and non-users) were personally invited by the head of the Library and asked to recommend other people that might participate (i.e. a snowball method). The 24 participants came from different departments<sup>a</sup>, backgrounds<sup>b</sup>, a wide range of positions<sup>c</sup> and experience in oncology<sup>d</sup>.

Considering busy schedules, interviews were limited to thirty minutes. Although participants are not fully representative of the NKI-AVL as such, the data offer a manageable way to encourage library initiatives, to promote reflection on its role and to increase its visibility to the institutional population being served. Interviews were spread over a two week period end of March / early April 2010 when the first author visited the Institute. Interviews were held in English, but participants could use Dutch if preferred. Interviews were tape-recorded with participant consent.

The interview schedule covered: purpose for using information in the completion of daily tasks, purpose for using the library, information resources used for completion of daily tasks, type of information required, support required from the library, collaboration with colleagues in as well as outside the NKI-AVL, problems and benefits experienced with use of the library, and suggestions for addressing the problems. Participants were also prompted to comment on needs for: access to information resources, tools for organising information, an information supportive infrastructure, and to discuss other issues of concern.

---

<sup>a</sup> Department (Number of participants): Anaesthetics & intensive care (1), Cell biology (2), Clinical chemistry (2), Clinical genetics and family cancer clinic (2), Gynaecology (1), Head & neck surgery (5), Internal Medicine (1), Neurology (2), Nuclear Medicine (1), Psychosocial research (1), Radiotherapy (2), Surgery (1), Thoracic Oncology (2), Urology (1)

<sup>b</sup> Background and training in: medicine, psychology, speech & language therapist, biochemistry

<sup>c</sup> PhD students, Postdocs, Junior and Senior clinical staff

<sup>d</sup> 2 (<1 yr), 4 (1-2 yr), 3 (3-5 yr), 4 (6-10 yr), 2 (11-15 yr), 1 (16 -20 yr), 2 (21-25 yr), 2 (> 25 yr), 4 (unknown)

## 4 FINDINGS AND ANALYSIS

Selected key findings from the interviews are discussed here before aligning these with the model depicted in Figure 1:

### 4.1 Purpose for using information in the completion of daily tasks

Even in the very specialised context of oncology, considerable differences between sections/departments, their tasks, and perceptions of the importance of information to complete tasks were noted. Research tasks rely by definition on being up to date with the current literature. Research staff are familiar with the developments in their own (sub)specialty and know their colleagues and competitors in the field. They have their own resources and networks to find relevant information.

Information is used in clinical research such as improvement of existing and development of new cancer therapies as well as formulating (national and international) clinical practice guidelines in oncology. It is also used in dealing with patients with rare or complicated diseases such as patients with multiple tumours and metastases. Sometimes evidence is required e.g. on the time required for pre-operative fasting or the length of time to keep the gastric tube. Those supervising the research projects of younger staff members, need to read widely: *“I have to do a lot of extra reading for supervision, otherwise I do not understand...”*. A need for background information and information on specific questions were also mentioned.

Information is also very important in keeping track of developments. Monitoring new information can warn researchers to wait for the results of projects that are already in process, or when patients may qualify for trials, and can thus be referred. Some prefer to monitor information wider than their immediate field — *“Look for new ideas... wider than oncology or neuro-oncology... even general medical literature”*. For others information seeking is sporadic — at the point when needed: *“If you get a new plan, you go around and look for it...”*.

Staff members in their role as consultant have to search for information based on questions from other sections e.g. a clinical chemist, giving advice and background information on interpretation of test values. Literature searches are also important for grant applications, when supervising or training junior staff or nurses, and for developing clinical or practical guidelines. Practical guidelines are for in-house use by nurses while clinical guidelines may be developed both for internal staff and national bodies. These guidelines are sometimes also published in journals.

In some fields research seems to be less dependent on extensive literature surveys. Many researchers in the NKI-AVL are in the forefront of developments in their field and rely on information published since their last publication and also on personal communication with colleagues worldwide.

Although it is embedded in their work, participants mostly do not experience a need to search for emotional issues concerning patients; patients are easily referred to specialists in psycho-oncology. They also do not search for information on behalf of patients. Patients are provided with brochures on procedures and treatments as applied in the NKI-AVL, and referred to the patient information centre, where further sources of the KWF Kankerbestrijding (Dutch cancer charity with an extensive cancer education programme) and the NFK (Nederlandse Federatie van Kankerpatiëntenorganisaties = Dutch Federation of Cancer Patient Associations) and its member organizations are available, including referrals to relevant websites.

The value of information is especially well captured in the following email from a participant: *"Yesterday there was a patient in the intensive care unit with hepatorenal syndrome; after consulting UpToDate we adapted our treatment plan in a way we had not thought of; this information source [UpToDate] proved to be of great value for our department."* (Translated from Dutch.)

If an institute specialising in oncology reflects such variety, any type of library would benefit from a detailed inventory of tasks and information use which would probably strengthen the perception that one size does not fit all.

#### **4.2 Purpose for using the library services**

Although some respondents used to frequently visit the Library in the past, there is no longer awareness that sources licensed for the NKI-AVL by the Library are key resources to access information. Some never visit the physical library anymore: *"Hardly go there anymore... work a lot with Google Scholar"*, and reach the licensed material or send a lending request to the Library.

Some respondents indicated a strong dependence on personal collections of articles and books, including non-oncology books and textbooks from academic studies and books that may not be of interest to others. Some departments have their own collections, and in addition rely on resources available through personal membership of professional associations, sharing journals, or gaining access to publisher provided databases because they review articles. Although some are using the interlibrary lending services, others proclaim to get the full-text through personal contacts or Google Scholar; some do not realise that their secretaries actually use the Library to request full-text articles (*"My secretary has a special password"*), and others feel very confident about their ability to trace full-text (*"Never happened that there is a journal title to which I cannot get access"*). Access to scientific information sources is extended for some staff members due to their professorships and other affiliations with universities; they have an account to log in on the university domain.

For all types of healthcare libraries it would be useful to verify who is responsible for gathering information (e.g. secretaries), to aim training at this group, and to use surveys as means to raise awareness of the library services.

#### **4.3 Information resources used**

PubMed is used extensively, but in addition there seems to be considerable interest in UpToDate (a digital reference source in clinical medicine), non-subscribed content in ScienceDirect and in Scopus for bibliometrics. Depending on information needs some started to prefer other information resources such as Medline Plus and OMIM (Online Mendelian Inheritance in Man). Others mentioned that the monthly CAS provided by the Library based on PubMed subject search strategies, delivered too much information not relevant to their needs. Instead of contacting the Library to change the search profile or to arrange for them to view the results at time intervals convenient to their needs, they just stopped to use the CAS. Overall most respondents seem to use a limited spectrum of databases (which may be sufficient for their purposes) with no explicit comments on the scope and coverage of the databases e.g. EMBASE being stronger on literature published in European languages, or that it is sometimes necessary to use several databases.

Most participants prefer journal articles and comments on the use of textbooks (even in electronic format, i.e. e-books) were frequently negative (*"Books outdated when they are published"*; *"Textbooks = old news"*). They seem not to even consult



DeVita<sup>e</sup>, a major reference work in clinical oncology. If needed, participants would use textbooks from their days as a student, regardless of how dated they are; which is a remarkable contrast to the comments on books in general. Although some use the Library for new purchases, others have not been doing so for some time.

Conferences are highly regarded as sources to stay abreast and in general participants felt that they had sufficient opportunities to attend conferences, including conferences outside their field of speciality when invited as a speaker.

Apart from bibliographic or full-text databases, a variety of other databases are used such as a comparison database for tumours (although this database requires registration it is available for free), and ad hoc access to mutation databases e.g. on gene defects. Factual information is obtained from the Trial Bureau and databases such as the BioBank (including samples from patients). Other sources include medical directories for information on doctors and specialists (e.g. the PALGA database of pathologists, the subscriptions for internists<sup>f</sup>, weblinks from NVKC<sup>g</sup>) and membership of professional organisations.<sup>h</sup>

Although some of the preferred information resources are oncology specific, the lack of interest in electronic books can be followed up and addressed by all libraries.

#### **4.4 Type of information required**

Information required includes factual information such as protocols, guidelines, addresses, pharmacopea, and background information. Information from procedures and guidelines are important and is often obtained through the websites of professional societies<sup>n</sup>. Although such guidelines are open for all (i.e. available for free), the ones under development and open for comments, are, however, only open for members of the particular society. Such procedures and guidelines need to be translated as needed into the context of the Institute where it is stored and accessible for all staff from the institutional databases on the intranet (e.g. DKS in the NKI-AVL). Some sections such as the genetics clinicians also need rather specific files and information on patients e.g. their pedigrees.

The need to monitor certain types of information changes due to technological development, e.g. in clinical chemistry it is no longer important to keep track of methods since these are now determined by industry and technology available. Such changes might also need to be noted by other libraries.

#### **4.5 Support required form the Library**

A variety of issues were raised when prompting participants on services they would like the Library to offer. Though needs and preferences are very diverse, there is substantial potential for the Library to respond to their needs, as well as of relevance to other types of healthcare libraries. (Not everything mentioned here needs to be the responsibility of the Library, however).

---

<sup>e</sup> DeVita, Hellman, and Rosenberg's cancer : principles & practice of oncology / eds.: Vincent T. DeVita, Jr., Theodore S. Lawrence, Steven A. Rosenberg. - 8th ed. - Philadelphia : Wolters Kluwer/Lippincott Williams & Wilkins, 2008

<sup>f</sup> <http://www.internisten.nl> : In het besloten gedeelte (toegankelijk voor leden van de NIV d.m.v. een aan hen verstrekte gebruikersnaam en wachtwoord) bevinden zich de ledenlijst, de richtlijnen in ontwikkeling en de abonnementen op vakliteratuur.

<sup>g</sup> <http://www.nvkc.nl/scripts/internet/startpagina.php>

<sup>h</sup> e.g. Dutch Society of Anaesthesiology: <http://www.anesthesiologie.nl/richtlijnen>

- (1) Personal or departmental databases. The Library can offer support with the development and maintenance of databases using reference management software such as Reference Manager and Endnote. These can be used to organise references for publication and research, journal clubs and other meetings as well as their own reprint collections. Although participants seem to have a preference for a particular product, the Library can offer advice on making an informed choice. Some respondents, however, see no need for organising and keeping record of references. They use their own system to store .pdf files, or proclaim no need for this: "*what is finished is finished...*" i.e. once an article has been published, they use it as reference source. Some prefer to use word processing software to create lists of references. It seems as if personal habits and tradition play an important role in the way people organize themselves or not. Some rely fully on their colleagues or their secretaries.

The library could offer advice and help on technical issues e.g. on sharing network directories and files, the format of bibliographies and bibliometric data. Apart from advice and quality control the Library can also advice on efficiency and logistics and on requirements and set-up for the local infrastructure.

- (2) Obtaining full-text of articles. Participants mentioned the use of the Library's interlending service, but also many trace the full-text themselves since they do not want to wait for two days. Others, however, accept the time interval.
- (3) Current Awareness Services (CAS). Although some are relying on the CAS for many years, others stopped using it since they experienced information overload. Others are unaware of it.<sup>i</sup> One participant explained that CAS is for them not as important: "*We make the research...*", and therefore experience less urgency to keep track with the research of others. (for the CAS see: <http://research.nki.nl/library/lit/Overzicht.htm>).
- (4) Training in literature searches: Although participants (mostly experts and well-established in their field) felt confident about their searches ("*We get acquainted with the field*"), it was also remarked that "*there is always a need*" for training.
- (5) Availability of manuscript guidelines. Although the Library offers an extensive list of web addresses with guidelines for authors on completing manuscripts for different publishers, some prefer to let secretaries take care of the technical presentation of manuscripts and the references and to search for such guidelines through Google.
- (6) Scanning services. This can be useful for scanning archival and reference papers collected in print e.g. the pedigrees of families, collections of reprints and photocopies of journal articles; which may include a departmental database as mentioned under (1).
- (7) Ordering of books. Some are still using the Library for this purpose, while others have neglected to do so for some time. Interesting is that statistics from publishers show substantial numbers of downloads<sup>j</sup>.

---

<sup>i</sup> Several subscribed to the CAS after the interviews.

<sup>j</sup> eBook usage stats

- (8) Updating of publication lists on Institutional website. Participants mostly felt that they need no help with this. Others felt that maintenance of Departmental research output on websites would be useful – and in line with the Institutional effort to promote its research image.
- (9) Citation counting and monitoring journal impacts. Although some participants felt no need for help with citation counting, others were keen on getting access to and/or help with the use of Web of Science, Scopus and the Hirsch index, especially since funding bodies and some universities do request this information for decisions on grants or extension of tenure.
- (10) Support with DKS (the NKI-AVL intranet database with practice guidelines and clinical protocols). (The Library is not responsible for running and maintaining DKS nor in organizing/adding metadata.) Many participants commented on the importance of the DKS and the user-unfriendly and very limited retrieval options. Comments were not flattery: “*Disaster... no real organization*”, “*That works... BUT... it is not very well organised*”. Problems include inadequate and inconsistent indexing, inadequate vocabulary control, inconsistent use of terminology, and lack of central review and coordination. People are not always aware if new guidelines or protocols are made available. The only respondent who mentioned daily use and adequate access to the DKS database makes use of a local (i.e. departmental) interface and linking to a few preselected items of relevance to their clinical work. The Library’s role might well be to link a resource such as DKS to the needs of a Department, which signifies a need for libraries to draw up inventories of internal databases and information resources, including intranets and its accessibility to users.
- (11) Support with collaborative work tools. This can include advice on team websites, including PowerPoint presentations, sharing of information, joint publication and manuscript preparation. This is important for people working in the same Department and for multidisciplinary teams where participants work in different institutes. It is also important for systems for publication submissions, grant applications, research project administration and (academic/national) repositories. Again this is a role that can apply to other libraries as well.

The role of secretaries sometimes featured strongly. The NKI-AVL employs clinical and research secretaries. There is more reliance on them to play an intermediary role than on using the Library staff e.g. finding full-text of articles, technical care of manuscripts, care of references, and maintaining databases and reprint collections. A need for training for secretaries in the use of reference management software, the use of impact factors, and the overall picture of publication and research was noted. Other healthcare libraries may find similar delegation of information related duties which signifies a shift of focus in services and training to a group not normally considered a core target.

#### **4.6 Collaboration with colleagues**

Informal contact with colleagues in as well as outside the NKI-AVL is highly regarded as means to share information, to obtain full-text articles and to access professional

---

Biomedical & Life Sciences copyright year 2008 & 2009 (680 eBooks) ~ 1.400 downloads  
 Medicine copyright year 2008 & 2009 (650 eBooks) ~ 900 downloads

journals and websites. It is important in research, grant application and finding factual answers to problems (e.g. dealing with questions from general practitioners).

In some departments there are journal clubs, but mostly information sharing is in a more informal way, especially in departments with diverse fields of specialisation. In some departments, there are individuals very keen on adopting and trying new ideas, who are also keen to share information with colleagues.

Information sharing is mostly by word of mouth or in digital format. It seems as if the latter refers to emails with no specific mention of social networking tools or collaborative project/documentation tools. Even the advantage of using shared departmental directories was not well-known among the interviewees. Where working together databases using reference management software and tools for collaborative work might be useful as explained in the previous section.

#### **4.7 Problems experienced with the Library service**

It was mentioned that the Library's move to a different physical location made it less visible. It is also difficult to find the Library website on the intranet.

Some mentioned the two-step process required to obtain full-text, i.e. finding useful references, reading the abstract, and then using other resources (e.g. access to university computer networks) to get hold of the full-text.<sup>k</sup> They experience this as double work, and although not explicitly stated might be seen as a shortcoming in the Library service.

Some did not realise that the Library has a wider collection than oncology, and also covers other medical and general fields e.g. nursing and psychology, as well as access to the more general medical journal titles, especially since package deals were arranged with a couple of major publishers in the biomedical field. The problems raised seemed relatively easy to address.

#### **4.8 Impact of institutional policy and infrastructure**

Although the NKI-AVL seems to be very focused on research and achievements in this regard<sup>8</sup>, participants sometimes experienced insufficient time and encouragement to do research and to publish. Remarks included *"no research responsibility"*, *"very under-staffed and therefore do not have time for research"*, *"... hardly have time to read the newspaper"*, *"Patients always come first"*, *"Difficult to find time and energy and to focus"*, *"Time for research is very limited... always at home... always in the small hours"*, *"Conflict with clinical work and clinical hours"*.

Although the need to do research is not stated explicitly in their job contracts, many felt it to be implied: *"You are expected to do research. Will not be punished if not publishing... Is also not rewarded"*. Realising this, LIS need to focus on streamlining information related tasks such as reference management and determining impact factors.

#### **4.9 Other comments and suggestions by participants**

Some participants stressed the need for information on the NKI-AVL's clinical and research work, and staff's experience should be made available and accessible to outsiders. Some remarks were made as to use modern technology to "translate" the

---

<sup>k</sup> Not many participants are aware of the restrictions set by copyright law and licensed access.

scientific results to a broader audience and to better, and more systematically, inform the public about the state of art of the research and the clinical results, on a wider basis than incidental press releases, e.g. web publications and/or a webmagazine or webjournal. This signifies a role for the Library in projecting research to the outside and in reaching the general public.

## **6 USEFULNESS OF THE MODEL AND VALUE OF FINDINGS FOR LIS IN GENERAL**

Applying the model depicted in Figure 1 and explained in Table 1 can allow any LIS to learn more about user needs and information behaviour and how to adapt their services. It, however, also offers the opportunity if repeated on another small scale projects to each time grow in terms of insight in: the nature of the context (e.g. the nature of competition in the field and the importance of research for the institution); the information needs and information behaviour of users (which offers numerous opportunities for further research); the skills in research, surveying, and data collection; the ability to analyse data; the ability to reflect and show creativity in suggesting options to improve and adapt services; learning more from the issues to be implemented e.g. citation analysis and bibliometrics as a serve in potential demand, as well as the assessment of these.

In addition to the detail offered in the preceding section on the findings for the Central Cancer Library, the following suggestions, based on these findings may be of value for the larger spectrum of LIS (not intended as comprehensive): comparative studies with similar library types in terms of services and collections offered; audit of tasks of users mapped onto information needs, information resources required and services required; experimentation with methods for data collection that can be most effective.

## **7 CONCLUSION**

Spending time on a few interviews and questionnaires with twenty-four participants from the NKI-AVL, describing and analysing these, leaves the Central Cancer Library with an interesting list of needs for services. Following the cyclic model suggested in Figure 1 and as mapped in Table 2, these needs can be addressed by further reflection, literature reviewing, implementation and again evaluation. Much can be learned from interviews and focus group interviews with both users and non-users of a LIS, and LIS can benefit from frequent interaction to learn more about the information needs and preferences of their users. Although there is some overlap between the support users require from the Central Cancer Library, there is also diversity that need to be noted.

The fact that some employees (after the interviews were conducted) phoned to offer participation in interviews certainly stressed the increase in the Library's visibility, and also their interest in participating in such surveys. An increase in the use of the CAS and requests for publications were also noted. The Library now must interpret the needs and problems in terms of its capacity and resources; other LIS can do the same. LIS managers need to consider including regular data collection on user needs as part of the management strategy. All types of users need to be considered – even if not all as part of the same survey.

### **List of references**

Ahmedin, J. (2010), Cancer statistics 2010. *CA Cancer Journal for Clinicians*, 60, pp. 1-24.

- Booth, A. and Brice, A. (2003). Clear-cut?: facilitating health librarians to use information research in practice. *Health Information and Libraries Journal*, 20(Suppl.), pp. 45–52.
- Case, D.O. (2007). *Looking for information: a survey of research on information seeking, needs and behaviour*. 2<sup>nd</sup> edition. Amsterdam: Elsevier.
- Dwyer, M.A. (1999). Delphi survey of research priorities and identified areas for collaborative research in health sector library and information services UK. *Health Libraries Review*, 16, pp. 174–191.
- Eldredge, J.D. (2004). Inventory of research methods for librarianship and informatics. *Journal of the Medical Library Association*, 92, pp. 83–90.
- Fenske, R.E. and Ward, P. (1992). Factors influencing research productivity among health sciences librarians. *Bulletin of the Medical Library Association*, 80, pp. 353–360.
- Forrest, M.E.S. (2008). On becoming a critically reflective practitioner. *Health Information and Libraries Journal*, 24, pp. 229–232.
- Fourie, I. (2011). Personal information and reference management – librarians increasing creativity. *Library Hi Tech*, 29(2), pp. 387–393.
- Fourie, I. and Bakker, S. (2009). Experiences with a cross-country exploratory project to offer current awareness (CAS) services to oncology nurses. *Mousaion*, 27(2), pp. 65-96
- Fourie, I. and Bakker, S. (2009). Exploring information needs and information behaviour in oncology contexts: the importance of tasks, roles and organisational settings. 10<sup>th</sup> International Congress on Medical Librarianship, 31 August – 4 September 2009, Brisbane, Australia.  
([http://espace.uq.edu.au/eserv/UQ:179911/n7\\_1\\_Fri\\_Fourie\\_225.pdf](http://espace.uq.edu.au/eserv/UQ:179911/n7_1_Fri_Fourie_225.pdf) )
- Fourie, I. and Claasen-Veldsman, R. (2007). A South African perspective on oncology nurses' need for current awareness services (CAS) via the WWW. *Mousaion*, 25(1), pp. 44-65.
- Fourie, I. and Claasen-Veldsman, R. (2011). Exploration of the needs of South African oncology nurses for current awareness services available through the Internet *Information Research*, 16(3) paper 484. [Available at <http://InformationR.net/ir/16-3/paper484.html>
- Grant, M.J. (2007). The role of reflection in the library and information sector: a systematic review. *Health Information and Libraries Journal*, 24, pp. 155–166.
- Grosman, M.J. (2000). A cancer library and health resource center: resource for the community. *Public Library Quarterly*, 18(3/4), pp. 29-37.
- Ingwersen, P. and Järvelin, K. (2005). *The turn: integration of information seeking and retrieval in context*. Dordrecht: Springer.

- Jerome, R.N. (2008). Further developing the professional research mentality. *Journal of the Medical Library Association*, 96, pp. 287–288.
- Koufogiannakis, D. and Crumley, E. (2006). Research in librarianship: issues to consider. *Library Hi Tech*, 24, pp. 324–340.
- Lancaster, F.W. (1993). *If you want to evaluate your library*. London: Library Association.
- Lewis, S. and Cotter, L. (2007). Have the most relevant and answerable research questions facing librarians changed between 2001 and 2006? *Evidence Based Library and Information Practice*, 2, pp. 107–120.
- The Netherlands Cancer Institute Scientific Annual Report 2010*. Amsterdam: NKI-AVL, 2011. <http://research.nki.nl/library/Jaarverslagen/SAR2010-compl.pdf>
- Powell, R.R. (2006). Evaluation research: an overview. *Library Trends*, 55, pp. 102–120.
- Rossall, H., Boyes, C., Montacute, K. and Doherty, P. (2008). Developing research capacity in health librarians: a review of the evidence. *Health Information and Libraries Journal*, 25, pp. 159–174.
- Tan, E.L.; Stark, H.; Lowinger, J.S.; Ringland, C.; Ward, R. and Pearson, S.-A. (2006). Information sources used by New South Wales cancer clinicians: a qualitative study. *Internal Medicine Journal*, 36, pp. 711–717.
- Thain, A. and Wales, A. (2005). Information needs of specialists healthcare professionals: a preliminary study based on the West of Scotland Colorectal Cancer Managed Clinical Network. *Health Information and Libraries Journal*, 22, pp. 133–142.
- Truccolo, I. *et al.* (2006). A pilot project of a *cancer patient library* in Italy: results of a customer-satisfaction survey and its products. *Health Information and Libraries Journal*, 23, pp. 266–274.
- Vakkari, P. (2003). Task-based information searching. *Annual Review of Information Science and Technology*, 37, pp. 413–464.
- Wilson, T.D. (1999). Models in information behaviour research. *Journal of Documentation*, 55, pp. 249–270.
- Younger, P. (2010). Internet-based information-seeking behaviour amongst doctors and nurses: a short review of the literature. *Health Information and Libraries Journal*, 27, pp. 2–10.