

# Equity, the Digital Library and a New Medical School

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**Abstract:**

*Inequity in health care provision for western Sydney in relation to the rest of the city was a key reason for the establishment of a medical school at the University of Western Sydney (UWS). After careful planning, the first intake of students commenced their studies in March 2007. UWS was keen to establish a school that made fundamental changes from the traditional past, in: student selection processes, curricula, teaching strategies and assessment methods. Key library staff were involved in the planning from the outset, providing an excellent opportunity to help shape the form and focus of the collection and the resources available for both staff and students. This paper outlines the process of consultation and the development of an exemplary medical library, which has as its focus a strong digital collection.*

## Background

In 1978, the World Health Organization (WHO) held a summit in the city of Alma Ata (now known as Almaty) in Kazakhstan on the future of global health care. Government officials and health professionals from over 168 countries gathered, with a view to mapping out new paths for health care going into the 21<sup>st</sup> century. Their efforts resulted in a revolutionary call for health care reform. Known as the Alma Ata Declaration, it called for health care to be universally accessible to individuals and families in the community in a way that was acceptable to them and with their full participation, at a cost that was affordable. This principle became the basis of WHO regional and worldwide efforts to think globally and act locally in striving to bring this to pass. (Malloch and Porter-O'Grady, 2006) Equity in the provision of health care was a fundamental principle in the establishment of a medical school at the University of Western Sydney (UWS).

The University of Western Sydney is a major urban university with six campuses in Greater Western Sydney (GWS). The University has over 2000 staff and over 35,000 students including more than 5,000 international students every year. The regional setting of UWS encompasses such places as the World Heritage Listed Blue Mountains National Park; state-of-the-art Olympic venues; historical sites of Indigenous and Colonial importance; and traditional rural environments as well as high-tech business districts. The area is one of the most diverse multicultural communities in the world, with people from over 100 nationalities living in the region. (University of Western Sydney, 2006)

GWS has a population of almost 2 million people (ABS, 2005), or one tenth of Australia's total population. Despite this, there exists an acute shortage of medical personnel for the region. For every GP living in the greater west there are three living in the rest of Sydney and for every specialist in the west there are six in the rest of Sydney (Reid, 2004). It was this knowledge that provided the impetus for the establishment of a medical school at UWS. The prevailing argument was that doctors of the future, graduating through the school would bring greater equity of health care to disadvantaged areas of western Sydney as they were more likely to live and practice in the region in which they grew up and undertook their studies. As the Dean of the medical school stated with the commencement of the first cohort of students earlier this year:

"UWS trainee doctors will bring an understanding and empathy for the particular health challenges facing people living in a culturally diverse and fast growing population like Greater Western Sydney". (Yeomans, 2007)

It was just over three years ago, in April 2004, that serious consideration was first given to the proposal of establishing a medical school at UWS. There was recognition by the Federal government that Western Sydney was facing severe medical personnel shortages and that this would be compounded in the future with population growth and the retirement of an aging workforce. Something had to be done. (Submission to the Australian Medical Council, 2006) In May of 2004, an initial funding package of \$18 million was provided in the Federal budget for that year. The proposed school was now officially off the ground. (Thompson, 2004)

Following the official announcement came three years of hard work and careful planning from all parties involved. UWS was keen to establish a school that made fundamental changes to traditional practices, in student selection processes; curricula; teaching strategies and assessment methods.

## **Course Development**

It is now well established that old ways of viewing students' minds as 'empty vessels' into which academics pour information and ideas through passive lectures results in poor learning outcomes. It results in students memorising and then regurgitating this information, without gaining understanding. Students' pre-existing understanding and assumptions persist and the new information is forgotten or becomes distorted to fit existing preconceptions. Learning requires students to be actively involved in the process while developing critical thinking skills. So academics seek to reduce the time spent delivering formal lectures while increasing the time students spend on learning tasks and developing critical thinking skills. (Spence, 2004)

The medical course at UWS is centred on Problem Based Learning (PBL). PBL is an active, student focused process and supports the type of learning outlined above. PBL supports critical thinking and lifelong learning, skills that students will need throughout their medical career as research into new diseases and treatments leads to changes to the way medicine is practiced. As stated in the UWS submission to the Australian Medical Council:

"The Problem Based approach has many benefits... the approach taken at UWS is to slowly introduce students to searching, reading and appraising the research literature. The Evidence-Based Medicine sub-theme of the curriculum, and its learning exercises, are designed to help students recognise the importance of and have the tools to critically evaluate the quality of research evidence. The aim is to give them the foundation and expectation to search for and find evidence-based answers to clinical or basic science questions throughout their career."(Submission to the Australian Medical Council, P.102, 2006)

PBL gives students the skills for reflective practice and critical evaluation of information. Each week students are given a particular case to investigate. A tutor is assigned to a small group of students for their PBL tutorials. The tutor's role is to stimulate discussion and reflective group work during the tutorials.

UWS medical students are placed in PBL groups for the semester. Each week the PBL tutorials define the learning goals for a particular week, based on the particular case being studied. The students in their groups are responsible for identifying, prioritising and researching their learning objectives for the week. This works in hand with the concept of Self Directed Learning (SDL) whereby each individual student is responsible for investigating the nominated issues, generating hypotheses and bringing back the evidence to support their findings to subsequent PBL tutorials in that week. The new information is then synthesised by the group and applied to the current problem. Crucial to the success of this style of learning is the availability of a wide range of electronic resources at the point of need.

## Library Resources and the Digital Age

From the time of the official announcement, UWS had three years to develop the infrastructure, personnel and resources for the commencement of the course. How was this done and how did this work in with the development of the medical library collection?

The UWS course was developed as a five-year undergraduate course, catering predominantly for school leavers. Most of the basic sciences that underpin medicine will be taught in the first two years, while the majority of clinical experience will be provided in the final three years. The limited time from the official announcement to the commencement of the course militated against developing the course from scratch. It was decided early in the planning to work in partnership with the University of Melbourne for years one and two and a licensing agreement for the University of Melbourne curriculum was negotiated. (Submission to the Australian Medical Council, 2006).

This agreement gave UWS library personnel access to the listing of medical holdings for the University of Melbourne. This list was of invaluable assistance in appraising the strength of the existing health and medical print collections at the Campbelltown campus library, as it provided a benchmark for assessing the existing collection and a guide for its ongoing development. It should be noted that a range of health related courses were already being taught on this campus, including nursing and courses in allied health encompassing such areas as osteopathy and a Bachelor of Medical Science. Collection building for the UWS medical library started from a position of strength as UWS already held over 90% of the titles from the University of Melbourne lists either in hard copy or through electronic access.

Universities and university libraries in the twenty-first century are very much a part of the digital age. Today's Generation Y students, have grown up surrounded by technology and would have difficulty recalling a time when they did not have their MP3 players, iPods or information accessed from the 'net'. Technology is not an adjunct – it underpins lifestyle, and the Library must respond accordingly or become irrelevant.

We also know that the traditional concept of a library as one of a collection of books and periodicals within a building is now relegated to history. Indeed, the UWS library Collection Development and Access Policy has for some time maintained the key principle of purchasing electronic over hard copy, both for books and journals. It was only 10-15 years ago that the majority of resources relating to medicine were only available in print form in large medical libraries, yet technology now enables access to medical information remotely from any location at any time. Medical resources in digital form bring together current knowledge on topics in an easily accessible format that is generally more comprehensive and up to date than anything of a similar kind in printed format. From the outset, the key component of the medical collection for the UWS library was to be the digital collection with its 'anytime, anywhere' availability to students and faculty.

Library usage statistics prior to the arrival of the Medical School were already showing that students had taken up electronic resources on a large scale. The style of learning the medical students were going to undertake with the need for "just in

time” resources for the particular PBL they were studying blended well with the UWS library’s policy of preferring electronic resources over hard copy. A snapshot (Figure 1) of some of these resources with usage figures to the end of June 2007 demonstrates the popularity of these electronic resources.

**Figure 1: UWS Usage statistics to July 2007: Medical snapshot**

MDConsult (Journals)	32580
MDConsult (Books)	5542 (to end of May)
ScienceDirect	138716
Medline	21086
Scopus	11869
Books@Ovid	2012
Wiley Interscience	5955

### **Partnership: The Library and the Medical School**

The formal announcement of the appointment of the Foundation Dean for the School of Medicine, Professor Neville Yeomans, was made on 21 September 2004. As a constructive and positive partnership between the library and medical school was paramount from the outset, it was appropriate that soon after taking up his appointment, Professor Yeomans met with the University Librarian, Ms Elizabeth Curach, and other key staff, to discuss this partnership and the services the library would provide to support the school.

Agreement was reached at an early stage that the existing strength of electronic resources would form the basis for enhancing the medical collection. The Library’s policy of strengthening existing collections through the purchase of back files, or archival sets, of significant journal titles in electronic format would continue to add the necessary depth and breadth. Purchase of such back files commenced for the medical collection soon after the school was officially announced.

In preparation for an accreditation visit from the Australian Medical Council, the Electronic Services Librarian met with key staff from the medical school to provide information concerning the strength of the medical journal collection, including impact factor ratings of the journals held by UWS. Discussion also covered future needs for additional journal titles and possible timeframes for purchase. Collection development at this stage was focussed on general and clinical medicine, the areas of focus for the students in their first two years of study.

Benchmarking collection holdings was another important aspect to determine the strength of the UWS collection and for targeting specific areas for improvement. The process of regular checking against the University of Melbourne database for e-books, e-journals and print resources continued, together with those of the University of Queensland and the NSW hospitals network of databases in the Clinical Information Access Program (CIAP).

In 2006, with one year to go before the first intake of students, strengthening the monograph collection with recently published resources also took on a greater focus. To this end, medical resource profiles were prepared and refined and alerts set up with our major book vendors to aid in selection. Other tools such as the Brandon Hill Core Collection were used as purchasing guides. A finite budget set against extremely expensive medical resources dictated the careful evaluation of resources for purchase.

As the time for the first intake of students drew closer, so pace quickened to ensure all was ready for their arrival. A major hurdle to jump early in 2006 was a site accreditation visit by the Australian Medical Council (AMC). Again, library personnel were very involved and worked closely with key staff from the medical school. This included a presentation to the AMC detailing the services, resources and infrastructure including refurbishment plans for the library to provide much enhanced study areas for the students. This presentation was made by the University Librarian, the Associate Librarian (Corporate Services), and the Electronic Services Librarian. Some six months later, in November 2006 the Vice Chancellor announced that the AMC had accredited the medical school program and that the first intake of students would go ahead as scheduled in 2007 (Reid, 2007).

It had early been agreed that the medical librarian be appointed in the second half of 2006, building upon the work already undertaken to enhance the collection and also begin work on preparing a reader education programme for the first intake of students. With the appointment of the medical librarian in September 2006, the solid partnership already developed between the library and the medical school became one of the key focus areas of attention to ensure that this strong foundation was further enhanced and reinforced.

Paramount to providing a service of excellence is a thorough knowledge of key curriculum areas being developed together with an understanding of the research areas of faculty and in the longer term, postgraduate students. Alongside the informal communication channels, formal networking channels needed to be established for this to happen and two important steps were taken to achieve this on an ongoing basis. One was to join an appropriate committee of the medical school, while the other, an initiative of the UWS library service, was to begin a process of Academic Interviewing.

As is common custom in medical schools, the Medical Librarian at UWS is a member of the School's Curriculum Committee. This committee is the senior educational committee for the School of Medicine. It is responsible to the School for the development and implementation of the curriculum and membership has several benefits. Chief amongst these is the provision of an ongoing and formal avenue for the medical librarian to stay informed about key aspects and proposed changes relating to the medical curriculum, an invaluable tool for collection development and information literacy. Membership of such a formal body also has distinct long-term advantages, as it represents an ongoing partnership which is not subject to changes in faculty, to which informal links alone are more prone.

Academic interviews continue to represent another very important tool for a strong and effective partnership with the medical school. This process has been formalised

at UWS for some time, and it is the aim of all liaison librarians to interview each academic in their faculty once every three years. It is a two-way communication process that provides for the librarian the opportunity to discuss with the academic the particular services and resources offered by the library, and for the academic to inform the librarian of their teaching and research needs. The result is a tailored programme that meets those needs.

## **Library Services**

Incorporating the medical collections within the existing Campbelltown Campus Library rather than as a separate offering, provides medical students and academic staff direct access to all the services provided through the UWS Library, including:

### **Intercampus Loans Service**

The Library has offered Intercampus delivery of books, DVDs, CDs and videos between all seven campus libraries since 2001. This service enables UWS clients to request items from any UWS library to be forwarded to any nominated UWS library. All requests are responded to within 24 hours and delivered on average within 48 hours Monday to Friday.

### **Information Literacy**

The range of resources available in today's academic library, from hardcopy monographs and journals through to e-books and e-journals, makes Information Literacy (IL) classes more essential than ever. With 104 students commencing undergraduate studies for the Bachelor of Medicine and Bachelor of Surgery (MBBS) at the beginning of 2007, a strong collaborative partnership between faculty and the medical librarian was essential to facilitate the integration of IL development into the undergraduate curricula.

Staff and students of the medical school also have access to two key virtual services offered by the Library:

### **Information Central**

Annual CAUL statistics confirm that the number of students coming into the library to access resources is in decline (CAUL, 2006). Students now perform many library activities from a remote location and there is a much greater need for librarians to move beyond the traditional methods of responding to reference inquiries from the library reference desk or the telephone. Crucial to the availability of online resources is the complementary support provided to accessing them and using them effectively. Such a concept saw the development of Information Central at UWS. Information Central operates from a single receipt point for all incoming telephone calls, chat-based real time reference queries and email queries. It is staffed by a small team operating from the Werrington Campus library throughout the physical library opening hours. This provides our virtual clients with access to services equivalent to that enjoyed by our face to face clients. The small team operating Information Central enables a greater consistency of responses and also provides for the library access to cumulative data on client requests. Thus, it provides library personnel with an accurate picture of how our clients use the library and the main areas in which assistance is requested. The medical students have been quick to take up this

service, and like their counterparts across the university, many prefer the online interaction over face to face.

## Successful Searching

This online tutorial is available from the UWS Library homepage, and provides a basic introduction to using the library. The design enables students to work through the whole tutorial sequentially or select specific topics, as their needs dictate. A number of links throughout enable users to view definitions of terms, explore further information on topics, obtain 'tips' and test their understanding of completed modules.

As with all first year UWS students, the medical students' first contact with the library is during orientation week. Here they have the opportunity to attend a library tour to familiarise themselves with the physical layout as well as the basic services available such as printing, photocopying, and availability and location of group study rooms. In this same week the medical librarian also met with the students in their IT lab to take them on a virtual tour of the library for a broad overview of the online library and off campus access to the vast range of resources. This presentation was done in conjunction with one given by the E-Learning Program Officer for the Medical School. The Professor for Medical Education was also in attendance. This combined effort of medical and library staff reinforced and supported the information being provided for the electronic learning environment.

Soon after this initial overview of library services, the planned and formal IL Classes commenced. The strategies used to develop the IL program focussed on the immediate needs of the student in the context of their first semester of PBL. Planning began in the last quarter of 2006, in liaison with the Professor of Medical Education, with one of the early PBL exercises chosen for the IL classes. Attendance was a mandatory requirement of the course. The PBL case contextualised the IL class and enabled the students to see the relevance of resources being presented. Hands on exercises reinforced their learning and understanding of how to use the resources highlighted. As an opening task, the students undertook a search in Google and then Google Scholar followed by searching relevant medical databases. The students then evaluated the different sets of results, and were able to see how a much more focussed search with far more relevant results could be achieved by searching specialised medical databases. Proper and accurate citing of resources was also discussed along with online help and the information/bibliographic management tool RefWorks.

In second semester, the students begin their studies in Evidence Based Medicine (EBM) and so need to know the main tools to use in finding Evidence Based resources. Again, classes were prepared in partnership with the medical school and library personnel to contextualise library learning with what is being explored in tutorial groups. Appropriate exercises were planned from this discussion. Knowledge gained from first semester was built into the lesson plan with reinforcement of searching techniques and this was extended to bring in the particular searching focus needed to find EBM resources. Searching filters for Evidence Based Practice were also introduced at this stage.

IL is not, however, restricted to the needs of these students. It also needs to reach academics, postgraduate students and those undertaking research. While it is early days for the medical school, long term planning is under way with proposals to develop teaching and research clusters within the school in molecular biology, molecular pharmacology and population health. Other areas of research in the school already are in gastroenterology and medical education. As new staff take up their positions, the research strengths and interests of the school will increase. The IL programme is a living programme, with sufficient flexibility to meet and address increasingly diverse needs of the academic community.

A little further down the track a Doctor of Medicine degree will be offered, and the school plans to soon have a number of postgraduate research students working towards their PhD degrees.

The medical librarian will continue to work closely with the School and the recently appointed research librarian, to ensure consistency of approach in support for the research endeavours of the University community.

## **Library Building**

While UWS briefly looked at the option of a separate medical library, this was quickly rejected for a number of reasons. The cost of resourcing such a library would have been prohibitive, even for the library to open only during standard business hours. Clearly, the best option was to incorporate the growing medical collections and services within the existing Campbelltown Campus Library. This would enable a wider range of opening hours and services to students than would have been possible in a separate library. In addition, the opportunity provided for medical students to mix with students from other disciplines was seen as a positive and enriching experience for all students.

Extensive remediation of the Campbelltown library had already been scheduled prior to the announcement of the medical school. The plans now needed to be adjusted to incorporate the medical collection together with the influx of the medical cohort and early estimates indicated that this would not be a major problem. Planning for the refurbished Campbelltown library took place throughout 2006, with refurbishment taking place over the summer vacation break of 2006/07.

The planning committee was well aware of the communication modes and group learning styles of today's students. All courses now have a much greater focus on group or team work than was the case in the past and students in the main have a preference for working together rather than alone. Before refurbishment, the small number of group study rooms in the Campbelltown library was always heavily booked. A priority for the planning committee was to incorporate a much greater number of these rooms. This became possible with the amalgamation of the previously separate Law Library into the general collection. This freed one wing of the library building for conversion to group study rooms.

The fully refurbished Campbelltown library opened in time for the commencement of the first cohort of medical students. Careful planning ensured sufficient space was

made available for the medical collection and that the current and future needs for student learning were provided. Highlights of the refurbishment included:

- increasing the number of PCs from 51 to 91
- increasing the number of Group Study Rooms from 10 to 23
- increasing the open study table seating from 8 to 186
- increasing the lounge seating from 8 to 30
- increasing the size of the Training Room used for Information Literacy classes
- redesigning the entry lobby and service desk to better serve over 260,000 clients entering the library each year

The fully re-furnished Campbelltown library building has now been operational for just over 12 months and it is pleasing to see the positive results of careful planning. The new facilities are much appreciated by students and staff alike, and are well utilised. Group study rooms are popular and there is accommodation to allow for further growth of the student body. The additional computers have proven an absolute necessity and are heavily used by the existing student population. Together with the introduction of the wireless network across UWS, the increase in desktop machines has gone a long way to meeting client demand.

## **Conclusion**

After receiving over 2300 applications and undertaking a rigorous selection process, 104 UWS medical students commenced their studies on Monday 26 February 2007. The broad profile of these students can be broken down as follows:

- approximately 60 per cent of them are from Greater Western Sydney
- 55 per cent are female
- 51 per cent are school leavers.
- 5 per cent are indigenous

The major impetus for the medical school at UWS was to redress the existing imbalance in health service provision in Greater Western Sydney as compared with metropolitan Sydney. It is anticipated, and intended, that the trend for the greatest percentage of our students to have grown up and/or live in western Sydney will continue. These students are already expressing their commitment to the region, and their entrance into the medical profession will do much to address the inequity of service. We will watch with anticipation.

The initial cohort of students have now completed their first 12 months of study. Much has happened since the announcement of the medical school for UWS some three and a half years ago. It was a busy, intensive and exciting time in preparing for this first student intake. Much has been achieved. We have a modern, state of the art library which all students and staff enjoy and use. We have a first class medical collection, which continues to grow. The provision of an excellent service to our students and staff is what we are all about. We look forward to the challenges ahead.

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