

**U21 - HEALTH SCIENCES MEETING  
BRISBANE, 2004**

**DENTISTRY GROUP REPORT**

Participants of the U21 Dentistry group were:

- Professor David Wray and Dr Vincent Bissell from the University of Glasgow
- Professor James Lund from McGill University
- Professor Peter Marquis from the University of Birmingham
- Professor Eric Reynolds and Associate Professor Mike Morgan from the University of Melbourne
- Professor L P (Sam) Samaranayake from the University of Hong Kong
- Associate Professor Keson Tan, Associate Professor Grace Ong and Associate Professor Siong-Beng Keng from the National University of Singapore
- Professor Laurie Walsh from The University of Queensland, who acted as the host for the meeting.

Dr Christopher Zed and Professor Ed Yen from the University of British Columbia were unable to attend the meeting. However, they provided input in the form of Powerpoint presentations and reports to the group.

The major issues discussed by the group were as follows:

1. E-health
2. Electronic patient records
3. Catalogues for learning objects
4. Benchmarking
5. Trans-cultural education
6. Infection control
7. Problem Based Learning and educational philosophies used in the Dental Schools.

**1. E-health**

The E-health initiative of the U21 medicine group was discussed, and parallels to dentistry were drawn. It was felt that there were three areas where E-health would be likely to have a significant impact. These were:

- Oral Medicine,
- Dento-Maxillofacial Radiology, and
- Orthodontics.

In all three areas, it was felt that the provision of images, e.g. from remote clinics, could be provided to experts located within a University environment to allow tele-diagnosis. Moreover, the same system could be used for screening of patients to ensure that the appropriate patients were referred to the dental school. This was of particular importance in Oral Medicine and Orthodontics, where inappropriate referrals were relatively common-place.

## **2. Electronic Patient Records**

The group discussed the development of electronic records, from relatively simple databases, to more comprehensive systems which included charting, records of treatment items, images and radiographs. Presentations from the National University of Singapore and the University of British Columbia identified the specific needs of the Dental School, and how these were different from those of conventional general specialist practice. Specific needs of the Dental School environment included grading, specialized charting, authentication of entries into student records, tracking of student work, being able to handle multiple uses in multiple clinics in terms of appointment booking, and finally being able to track items of service as a requirement for the treatment of hospital patients.

In response to the discussion point “Is the paperless electronic patient record worthwhile?”, it was felt that electronic patient record was advantageous, since it would be ubiquitous and available at any time and at any place, be well-suited to multiple providers in multiple clinics, allow the sharing of information and the tracking of trends within data, and also provide a number of unique views of the individual patient, e.g. radiograph and clinical images integrated with charting.

In terms of the means by which digital information, including images, could be managed or secured, it was identified that access needed to be limited both through physical security as well as system or software security. Having an acceptable user policy would ensure that all users would have to sign in and be verified by the system, and this in conjunction with audit trails would provide an appropriate means for ensuring security of the system. Recent legislative changes in many jurisdictions addressed issues of data protection, protection and patient confidentiality, and it was noted that in each location, the electronic patient records systems would need to comply with such legislation.

Student access from laptop computers was discussed at some length, and this was felt to be a worthwhile initiative, since the cost of maintaining the point of access hardware would not be an ongoing concern for the dental school environment. The use of wireless networks could be useful for student access within clinic environments.

## **3. Learning objects catalogue.**

A presentation from Professor Peter Harris from the University of Melbourne outlined the move from the U21 collection to a database site within the University of Melbourne. This essentially has a noticeboard function and provides an opportunity for individuals to showcase products and then have a link to a site with further detail. The dentistry group felt that the site hosted by the University of Melbourne could include objects developed both as courseware and also for continuing professional dental education.

There was a feeling amongst the group that smaller elements of courseware were unlikely to be broadly applicable since they were very parochial, e.g. Week 3 in Year 2, Module 1, would be a specific topic which would be different across each of the programs. Professor Ed Yen from the University of British Columbia provided a presentation on the EEL system introduced at the University of British Columbia some years ago. This electronic education library again serves a very useful noticeboard function. Moreover for a dental audience, it has the advantages of dental categories and specialist sub-categories. In discussion, it was noted

that many electronic resources were programmed with unique code and unless they were web-based, tended not to share a common platform.

The overall feeling of the group was that objects could be entered on both the UBC EEL system and also on the U21/University of Melbourne catalogue, and this would be a useful means for authors to make available information about their products.

Items that were already fully commercialized would be preferred, since in these the intellectual policy issues would have already been addressed between the author and their parent university.

#### **4. Benchmarking**

This topic was discussed at some length by the group. The initial dataset compiled by Professor Walsh was based on five schools. During the meeting, an additional two schools provided data. It was hoped that all eight U21 dental schools will be able to contribute data for the next meeting in 2005 in Lund, Sweden.

There was discussion about the benchmarking tool itself, as well as the actual data outputs. There was a need to focus the tool on to the core (under)graduate dental training program to allow clearer dissection of the differences between schools. There was also a need to clarify the operating environment of each school in terms of its relationship to the local health service, or government health department.

Because a number of schools had school reviews planned for 2005 and 2006, it was felt that the original data set would be useful strategically for school reviews, since it would provide knowledge of the performance of the school and allow effective comparison with others. The initial data set was certainly useful in identifying areas where improvements could be considered.

Issues raised by the Benchmarking data included the nature of the interaction with the local or regional health department, the costs involved with maintaining and replacing clinical chairs as these became more heavily used, and the teaching loads of clinical academics within the Dental School, particularly in the context of the worldwide shortage of dental academics.

At the same time, the need to encourage and facilitate research within the school was stressed. Considerable discussion was held regarding the influence of the pedagogy used within the school on its facilities, staff and research outputs. For example, it was felt that the introduction of hybrid models and greater interfacing with the basic sciences was likely to improve research productivity within the school.

#### **5. Trans-cultural education.**

This project led by the University of Melbourne and the University of British Columbia had progressed significantly since the last meeting. An analysis of intercultural issues related to dental practitioner/patient communication had been undertaken from a cultural perspective, and the project was now moving to analyze the demography of dental service provision and to compare this to the cultural diversity of the patient base. It was intended that once fully developed, an audit of national or regional jurisdictions would be possible.

The intent of the project was to try to match education with services, by encouraging students to be more aware of the cultural issues involved in dealing with their patients. In order for this goal to be achieved, it would be necessary to conduct an audit of inter-cultural components within the dental education curricula, and the degree to which these have been developed in each of the U21 dental schools.

It was identified that within Australia, there was a disproportionate representation of migrant students in tertiary education, and that access by recently arrived students from non-English speaking backgrounds was well above the rates for the equivalent age groups. Several cohorts of students had particularly high participation rates, and for this reason, the demographic of the students was unlikely to match that of their patients.

The literature review for this project has been completed and the major issues identified. A survey instrument is under development and it was hoped to have preliminary data from this available for the Lund meeting. Once finalized, the survey instrument could then be used by all eight U21 dental schools to precipitate curricula change in response to issues raised by the survey data.

## **6. Infection control.**

In discussion of this point, led by the University of Hong Kong, it was felt that there were concerns with having a sufficient evidence base, and this was reflected in variation between various recently released national guidelines, for example, the Centres for Disease Control in the United States and the Communicable Diseases Network of Australia. It was felt there was a need to align practices within teaching institutions with situations in clinical practice, so that the students were well prepared for infection control issues after graduation. There was concern expressed regarding the perceived versus actual risks from microorganisms in dental unit waterlines, as well as the threat posed by emerging diseases such as prion diseases and SARS. It was felt that a benchmarking survey would be worthwhile looking at core infection control practices, and Professor Walsh undertook to adapt an existing survey for this purpose.

## **7. Educational pedagogy used within dental education.**

The usefulness of the problem based learning approach was discussed at length, given the challenges with skills acquisitions and the need to retain didactic components in order to ensure foundation skills were acquired within the program. It was felt that a hybrid model was useful since this would retain the ability to provide a structure upon which problem-solving and case-based teaching could then build. It was felt that with a fully PBL approach, there may be gaps in the knowledge-base or incomplete coverage of certain topics. It was also identified that there may be a miss-match when the students undertake further training, for example, a fellowship, diploma or masters program which would be typically based on a more didactic framework of knowledge rather than from a looser conceptual framework.

It was noted that staff resourcing for PBL was an issue, since all staff may not be willing to contribute equally in terms of either preparing cases, or tutoring groups, and thus the increase burden may fall on a few staff.

It was also pointed out that the more elaborate assessment and examinations for PBL placed greater demands upon staff time. There was also the problem of needing to review, rewrite or change PBL problems every year, and in this regard, there may be benefit in exchanging some

PBL materials. The experience in the Australian and New Zealand region was discussed, and the ANZDENTAL collaboration was put forward as a possible model in which dental schools could exchange case materials on equivalency basis. Associate Professor Mike Morgan from the University of Melbourne undertook to adapt a survey developed for the ANZDENTAL group, to establish the usage rates of PBL within the different U21 dental schools, and associated issues.

#### 8. U-21 meeting in Lund, 2005

Finally, the group identified issues for the agenda of the Lund meeting in 2005. There were six major issues identified for follow-up at that meeting.

1. Developments in E-health and electronic patient records.
2. Data for the benchmarking of operations, particularly concerning the undergraduate dental training programs.
3. Infection control practices, based on a benchmarking project.
4. Relationships with hospitals and health departments.
5. The preliminary data from the trans-cultural education project.
6. The usage of PBL components within dental courses and the level to which these may be able to be shared between U21 dental schools.

As has been the case in previous years, the group had thoughtful and animated discussions on most topics, and the participants felt there was significant worth in continuing to push forward with projects that were immediately relevant to the dental school setting.

**Laurence J Walsh**  
The University of Queensland