

## **MPH Dissertation summaries 2006**

### **Associations of dental caries status of Queensland primary school children to health attitudes, behaviours and socioeconomic factors**

Candidate: Helen Clifford

The tooth brushing in primary schools research project was designed to determine the possible cause-effect relationship of daily tooth brushing at school on the incidence of dental caries. A total of 806 children from 14 schools received a dental examination and a parent survey at baseline survey. Matched longitudinal data were collected for a total of 520 students at 30 months. A single examiner and recorder were used to conduct all dental examinations in a clinical setting. At baseline, the mean number of tooth surfaces with caries experience (d3mf/D3MF) was 3.30 (SD 6.0) and this rose to 4.81 (SD 6.4) by post intervention. Children who were economically disadvantaged showed significantly higher levels of dental caries experience. Social disadvantage related to family factors, such as mother's age at child's birth and father's highest level of education, also showed statistically significant associations with child dental caries experience. Relative to children with no dental caries, children with the highest levels of dental caries were more likely to eat sweets more than once a day; drink cordial, juice and soft drink more often; and usually drink cordial between meals at home. They were also less likely to drink more milk more often or eat sweets rarely compared to children with no dental caries.

Children who brushed their teeth more than twice a day were more than twice as likely to be caries free compared to children who brushed their teeth occasionally. A positive association was found between positive parental attitudes to maintaining oral health and low caries experience. Overall, a small improvement was found in caries incidence in the tooth-brushing intervention group compared to the control group; but the wide confidence interval suggests that the intervention was unable to substantially reduce dental caries incidence for this population.

### **Evaluation of the community health activities model program for senior's questionnaire**

Candidate: Kate Giles

The Community Health Activities Model Program for Seniors (CHAMPS) questionnaire had been previously used in the United States, but not in Australia. In this study, 100 questionnaires were mailed to seniors registered with the 50+ registry at the Australian Centre for Ageing at the University of Queensland: 73 responded to the evaluation's first phase and 54 to the follow-up phase. The CHAMPS questionnaire was found to be a reliable and valid measure for

physical activity for Australian adults over 65 years, comparable to, if not better than, the measures in the US study.

## **A Preliminary Assessment of Equity in the Allocation of Liver Transplantation across the Australian States: A Public Health Policy Perspective**

Candidate: Charleton Noble

End-stage liver disease (ESLD) is a major public health dilemma. The optimal treatment for ESLD is liver transplantation, which is challenged by organ shortages leading to growing waiting lists. This, however, is only part of the dilemma. Along with growing waiting lists is an increased need to make complex decisions about how waiting lists are managed and who to transplant when a suitable organ is available. How these decisions are made are important factors in assuring equitable health care. Equity issues in the clinical speciality of liver transplantation are the focus of this dissertation. Its terms of reference included identifying indications for and use of liver transplantation in Australia, together with the structure and resource distribution of its service arrangements. Comparison is made with the United Kingdom and the United States, with particular attention on the evolution from biomedical science to population-based needs analysis. Six characteristics were used with the terms of reference. These included the strategic outlook, real-world outcomes, linkage and communication within and across organisational and professional boundaries of the service (including how inclusive, transparent and robust its arrangements are). The purpose of this thesis is to identify both socio-political and clinical complexities surrounding equity issues in liver transplantation and to draw out a methodology for determining future policy. The project utilised soft systems methodology to enhance the image of real-world dynamics and to support problem definition and problem solving that would otherwise remain unnoticed for sometime in the midst of cultural and organisational change in current health-care organisations. This methodology was directed at three world views: the professional, the political and the public (community). Conceptual metaphors enabled key parts of the whole service to be dissected to identify areas of concern. The issues of equity articulate around the environment in which areas of concern exist and into the problem owners and actors who can enable change. Analysis of these segments provides a cluster of rich potential in terms of data development and prospective knowledge, and is an important starting point for discussion and debate. There is scope for advanced research projects in equity issues in liver transplantation in Australia. Future analytical development could use an individual world view or all of the world views presented in this dissertation to identify how transplantation is provided in Australia and how this may be transformed. Developing this type of study could be useful when applied to other forms of solid organ transplantation and their associated organisational structures. This thesis identified the need for improved governance at both state and national levels to identify with community, political and biomedical views on

equitable liver transplantation services. The consequences of failing to understand this are already apparent, as liver transplant waiting lists grow and donation rates are inadequate to meet demand.

### **The Effects of Air Pollution from Industrial Activities on Children in Yen Phong District**

Candidate: Huu Thang Nguen

There is epidemiological evidence from some studies that respiratory symptoms and pulmonary function are considered good indexes for estimating the impact of air pollution on children. Based on those indexes, this study assessed the effects of air pollution from industrial activities on children in Yen Phong district, Bac Ninh province, Vietnam. Spirometric measures were taken of 307 children (ranging in age from 6 to 12 years) in two hamlets (Van Mon – exposed commune and Yen Phu – unexposed commune) attending randomly selected schools of hamlets, using the Fukoda ST95 Spirometer. At the same time, the prevalence of school children suffering from respiratory symptoms was studied by using a questionnaire to interview children's caregivers. The results showed the decrements in the average of children's PFT indexes in the exposed commune—VC (95.08%), FVC (88.71%), FEVI (87.92%) and FEVI/FVC (92.98%), compared with children's PFT indexes in the unexposed commune—VC (106.01%), FVC (94.53%), FEVI (104.47%) and FEVI/FVC (96.3%). In addition, the findings from interviewing the respiratory symptomatic also indicated that children in the exposed commune were more likely to experience some type of respiratory symptom when compared to children in the unexposed commune. The excess risk for respiratory symptoms among children in the exposed commune was also shown for the frequency of cough and symptoms of both the lower and upper respiratory systems. Variations in the spirometric indices and the prevalence of school children suffering from respiratory symptoms were observed across the exposed commune as compared with the unexposed commune. These results suggest that children in the exposed hamlet were more likely to be unhealthy than children in the unexposed hamlet. This cross - sectional data, however, does not permit the conclusion that there is a certain cause for the unhealthy status of the children in the exposed Community

### **Exploring the acceptability of antenatal ultrasound to Aboriginal women living in remote communities within Central Australia**

Candidate: Bernadette Rickard

This study explored the acceptability of providing basic antenatal ultrasound to Aboriginal women living in remote areas of Central Australia. Key findings of this research include establishing that Aboriginal women enjoy seeing images of their

unborn children on the ultrasound screen as well as receiving photographs after the procedure. Aboriginal women articulate that having an ultrasound machine in their community clinic makes them feel happy and that they enjoy showing images to their families. Provision of basic antenatal ultrasound to remote communities is well-received by midwives and Aboriginal health workers who have been trained in its use. Health practitioners' increased capacity to accurately date pregnancies for Aboriginal women in remote communities helps reduce the dislocation burden for remote-dwelling women incurred through their having to journey long distances to regional hospitals for early dating ultrasound. Accurate dating of pregnancy at the community level additionally affords potential to reduce the pre-delivery waiting period Aboriginal women endure, as they observe the current recommendations to again travel 'to town' to give birth in hospital rather than in their remote communities.

### **Varicella, Rubella and Hepatitis B Vaccination for Healthcare Workers at A Women's And Children's Hospital**

Candidate Li Siok Hong

This dissertation describes a cohort study of varicella, rubella and hepatitis B immune status among HCWs at KK Women's and Children's Hospital, Singapore. The aim of the Staff Vaccination Program was to prevent transmission of vaccine-preventable infectious diseases among HCWs and patients. Of the HCWs surveyed, 22.8% (421/1844), 41.6% (767/1844) and 77% (1375/1785) had no evidence of immunity to varicella, rubella and hepatitis B, respectively. Of these HCWs, 15.2%, 20.3% and 28.4% had negative antibodies for varicella, rubella and hepatitis B, respectively, and were offered vaccination. Of the latter group, 74%, 79.3% and 63.2% accepted vaccination against varicella, rubella and hepatitis B, respectively. Of those HSWs who received a complete vaccine series of hepatitis B, 10.5% had no seroconversion. Hence, the overall immunity rate in HCWs was 97% for varicella, 94.2% for rubella and 82.6% for hepatitis B. The study shows a progressive increase in immunity status among HCWs, which points to the considerable success of the Staff Vaccination Program. However, the hospital community comprises two major groups, HCWs and patients. Although high immunity has been achieved among the HCWs, this group of staff is mixed with patients who have unknown immunity status. Thus, there is still a potential risk to outbreak of infection. Hence, the staff vaccination program must be maintained, as lapses may result in a re-emergence of infectious diseases.

### **Factors Associated with Breastfeeding Practices and Duration for Singaporean Women- A Prospective Cohort Study**

Candidate: Cynthia Pang Pui Chan

The study seeks to identify factors associated with breastfeeding practices and duration for Singaporean women so that appropriate measures can be implemented to improve breastfeeding outcomes for mothers and babies in Singapore. The breastfeeding rates observed in this study showed that exclusive breastfeeding is very low. Most of the mothers combined breastfeeding with supplementary feeds of infant formula. At six weeks, only 22.6% of mothers were still exclusively breastfeeding and this rate fell to 17.3% at four months and as low as 3.1% at six months. The study's main findings indicate that factors such as Chinese ethnicity, primigravida and lower educational attainment are common non-modifiable factors associated with lower initiation and shorter duration of breastfeeding. However, modifiable factors such as early initiation within one hour after birth and intention to breastfeed exclusively were also found to be significantly associated with continuation of breastfeeding and exclusive breastfeeding at six weeks postpartum. These modifiable factors must be taken into consideration by midwives to improve the breastfeeding situation in Singapore.