

2004 Dissertation Summaries

Diagnostic accuracy of rapid immunochromatographic assays for the detection of dengue virus IgM antibodies during the acute phase of infection: A systematic review and meta-analysis

Candidate: Stuart Blacksell

A systematic literature review was performed using computer-based search engines to locate relevant studies using rapid methods for the detection of dengue IgM antibodies. Standardised quality assessment of selected studies using the QUADAS tool was performed to select only high quality studies for the final meta-analysis. A meta-analysis was performed on common outcomes measures to determine the overall diagnostic accuracy of immunochromatographic tests (ICT). Heterogeneity between studies, and its sources, were investigated. From a total of 302 potentially suitable studies, 36 were included in the quality review from which 11 studies were selected for the final meta-analysis.

Significant between study heterogeneity invalidated pooling of diagnostic indices and therefore subgroup analysis was performed. When compared to the Panbio Duo ELISA the dengue ICT demonstrated high levels of diagnostic accuracy. Furthermore, diagnostic accuracy was improved when samples were collected later in the infection. It is recommended that a high quality study be performed using the standardised diagnostic assay assessment methodologies described by the Cochrane Collaboration to confirm the results of the study.

Surgical site infections within the vascular surgical patient: Identification of an appropriate index for risk stratification

Candidate: Merrilyn Curtis

The aims of this study were to identify specific risk factors for vascular surgery patients that are predictive for the development of a surgical site infection (SSI) within the in-hospital and post-discharge settings. A case control study was conducted. Cases consisted of all patients who underwent one of three similar vascular surgical procedures at a major tertiary hospital, and developed a post-operative SSI. One control case for each case was randomly selected from the remainder of patients who underwent the same procedure.

The study identified risk factors predictive for the development of an SSI which occurs following vascular surgery involving revascularisation of the lower extremities. Factors identified differed between SSIs, which occur within the in-patient setting compared to those which occur following discharge from hospital. For the purpose of prediction and preventative intervention, obesity is the only significant risk factor, which can be identified pre-operatively and with common delays between the development of symptoms and the procedure, with the scope to modify.

Antenatal predictors of delivery outside a tertiary perinatal centre in mothers delivering extremely low birthweight infants in Queensland, 1998-2000

Candidate: Tim Donovan

The delivery of an infant of birthweight 500-999 grams (ELBW) outside a tertiary perinatal hospital continues to be associated with higher mortality and morbidity despite advances in obstetric and neonatal care. The primary objective of this study was to establish quantitative risk measures for birth outside a tertiary hospital among antenatal characteristics of mothers delivering an ELBW infant of gestation ≥ 24 weeks. The Queensland Perinatal Data Collection was used.

Significant differential neonatal mortality remains between ELBW infants delivered outside the highest-level perinatal centres when compared with those delivering in the three tertiary hospitals. Antenatal factors associated with place of delivery suggest that appropriate in-utero transfer occurs following the presence of prelabour rupture of membranes, when pregnancy induced hypertension is detected and in pregnancies with a congenital anomaly. However, mothers aged less than 25 years remain at higher risk of non-tertiary ELBW birth. Assessment of the admission – delivery time interval data suggests that at least 31% of mothers delivering an ELBW infant outside an appropriate perinatal centre had an opportunity for in-utero transport. The proportion of ELBW infants delivered outside a tertiary perinatal hospital should be used as one of the clinical indicators of a regions efficacy in perinatal care over time.

Are there gender differences in the associations of physical activity and waist circumference with risk of undiagnosed abnormal glucose tolerance in Australian adults?

Candidate: Genevieve Healy

There is clear evidence that type 2 diabetes and its precursor, impaired glucose tolerance, have a substantial impact on the Australian community. Physical activity and waist circumference are established independent risk factors for these conditions of abnormal glucose tolerance (AGT). However, the extent to which physical activity attenuates the risk of AGT in overweight and obese men and women is not clear. Using a study sample of 7,356 adults (3,210 men; 4,146 women) from the cross-sectional 1999-2000 AusDiab study, the aim of this dissertation was to explore the associations between waist circumference, physical activity, and undiagnosed AGT in men and women.

Logistic regression analysis revealed that sufficient physical activity was significantly associated with a reduced risk of AGT in men and women with a normal waist circumference. When waist circumference and physical activity status were considered simultaneously, men and women who were overweight or obese had a greater risk of AGT compared to men and women with a normal waist circumference, regardless of physical activity level. No gender differences were observed in any of the associations. The findings from this study suggest that both physical activity level and waist circumference should be used to identify men and women at risk of undiagnosed AGT.

Workplace wellness and its measurement: A systematic review of randomised controlled studies.

Candidate: Beverly Oliver Leger

A systematic review of randomised controlled trials was undertaken to assess recent study designs and the outcomes of workplace health promotion activities. A range of databases were searched for relevant studies published in English, during the period 1996-2003. Two independent reviewers concurred on the inclusion of randomised controlled studies measuring outcomes in terms of worker, worker-organisation interface or organization meeting four core reporting quality criteria: employ a control or comparison group, provide pre-intervention and post-intervention data and report on all the outcomes that the study set out to examine.

Fifteen studies were eligible for inclusion in the systematic review. None of these studies provided comparable outcome data enabling meta-analysis of results. The outcome results of several original reviewed studies suggest increased benefits of workplace health promotion interventions. Despite these reports, all but two of 10 outcome categories provided insufficient data to establish important patterns of change. Outcome categories of fruit and vegetable consumption and cancer screening provided mixed and positive trends respectively for effectiveness in mass and high-risk prevention strategies. Due to selection and publication bias, methodological and reporting quality problems, drawing a conclusion regarding the effectiveness of workplace health promotion interventions in this review is implausible.

Regional variation of end stage renal disease in indigenous Australians

Candidate: Anne Preston-Thomas

End stage renal disease (ESRD) is a significant health issue for Indigenous Australians in that it has an enormous impact on quality of life and on high mortality and morbidity rates. It also has marked regional variation. This study aimed to determine the extent of regional variation in treated ESRD during the study period 1993-2001. The indirectly standardised incidence ratio of treated ESRD relative to the incidence in the total Australian population was calculated in order to compare rates between states and territories, between Aboriginal and Torres Strait Island Commission regions and to compare rates in regions with differing proportions of Indigenous population.

There has been a small but steady increase in incidence rates of treated ESRD in Indigenous Australians throughout Australia from 1993 to 2001. This increase is seen in most areas, from urban to remote. However, the previously documented exponential increase in incidence rates in certain remote areas was not reconfirmed in this study. Indigenous people living in regions with a greater proportion of Indigenous population experience high treated ESRD incidence and a high proportion of these patients have to relocate to access renal replacement therapy. There still exists a paucity of renal services in a number of areas of high need.

Defining the Boundaries of Autistic Spectrum Disorder Diagnoses

Candidate: Catherine Skellern

This study examines difficulties faced by paediatricians and child psychiatrists in confirming or denying a diagnosis of Autistic Spectrum Disorder (ASD). In addition to the inherent uncertainties involved in using behaviourally defined disorders, this study examined the practice of deliberate misrepresentation of ASD diagnosis as a potential contributing factor to the high prevalence rates of ASD in Queensland. A survey examining the frequency of this type of consultation for newly referred patients, self-perceptions of accuracy of diagnoses and adequacy of training preparation, use of deliberate misrepresentation of diagnosis and attitudes relating to this practice was sent to paediatricians and child psychiatrists in Queensland. Responses were received from 85% of paediatricians and 58% of child psychiatrists.

A significant number of children receiving ASD diagnoses relate in part to the practice of deliberate misrepresentation of ASD diagnoses in response to external pressures. Many paediatricians are struggling with the diagnostic challenges presented by this “new morbidity” and feel under-prepared from their training.

Risk factors for Barrett’s Oesophagus

Candidate: Kylie Smith

Over the past 30 years there has been a rapid increase in the incidence of oesophageal adenocarcinoma and as a result there has been recent interest in the disease which often precedes it, Barrett’s oesophagus. This study aimed to measure the risk of incident or dysplastic Barrett’s oesophagus associated with environmental and phenotypic exposures in a population-based case-control study as well as comparing the pattern and magnitude of associations found for incident and prevalent Barrett’s oesophagus. Preliminary data from a large population based case control study of Barrett’s oesophagus being conducted by the Queensland Institute of Medical Research was used. Eligible cases were classified as incident (newly diagnosed n = 143) prevalent (previously diagnosed, n= 183) or positive dysplasia (n=53) Barrett’s oesophagus cases. Two hundred and fifty-three controls, who were Queensland residents, were randomly selected from the electoral role.

There was a large difference between the risk estimates obtained for incident compared with prevalent Barrett’s oesophagus for the variables strenuous physical activity, acid reflux, heartburn, cigarette smoking, female BMI and history of hiatus hernia. Therefore investigators planning studies of Barrett’s oesophagus should determine whether cases are newly diagnosed, or existing as this is likely to influence their results. While a causal association cannot be inferred from one observational study it would appear from a public health point of view that both cigarette smoking and increased BMI are potentially avoidable risk factors for Barrett’s oesophagus.

Universal or selective directly observed treatment? A clinical audit of directly observed treatment and tuberculosis in north-east London (United Kingdom) cohort.

Candidate: Kerri Viney

Tuberculosis (TB) remains a public health challenge in the 21st century. Worldwide, however, treatment completion remains a major objective and is an indication of program success. Directly observed treatment (DOT) is part of the World Health Organisation (WHO) recommended TB control strategy and is a means of addressing the challenge of completing a course of TB medication. Although universal DOT is advocated for all patients some countries offer selective DOT, here patients are considered to be more at risk of non-adherence to treatment.

This study represents a retrospective clinical audit for the period 1997-2001 comparing actual practice against the standard in a selective DOT program in East London, UK. The study found that a program of selective DOT is appropriate in this setting. It appears that it is when approximately 30% of patients were on DOT treatment completion rates were optimised. Selective DOT may be appropriate in this setting provided that treatment completion rates are maintained above 90% and that treatment outcome is documented for every patient with regular cohort analysis.

A study of the offence histories of 200 speed offenders.

Jane Manderson QUT

A demographic picture of speed offenders in terms of age groups, sex distribution and criminal histories is supplied. The recidivism rate and mean time for re-offence is calculated. An association was found between speed offences in the twelve months prior to the index offence and the presence of a high speed offence. Antisocial driving tendencies were more strongly associated with the presence of high speed offences in female speed offenders than male speed offenders. The presence of a crash history was associated with the presence of high speed offences and this effect was modified by age and the presence of a criminal history.

What works? A select review of Indigenous mental health promotion interventions

Candidate: Nikki Clelland

The need for action to promote mental health awareness and prevent mental health problems and disorders for Indigenous populations is undisputed. The purpose of this study was to identify effective Indigenous mental health promotion interventions to inform future policy, practice, and research. Twenty-three reports of Indigenous mental health promotion interventions were identified and analysed using a systematic review technique.

The results suggest that currently, the available evidence on effective Indigenous mental health promotion is limited. Future developments should ensure meaningful Indigenous participation and focus on the implementation and evaluation of comprehensive health promotion interventions together with appropriate research dissemination.

Needle and Syringe Availability and Support Programs for HIV/AIDS Prevention: An Examination of Community Perceptions in Ganjiakou, Beijing, China

Candidate: Jia Li

China has been experiencing a serious HIV/AIDS epidemic and the primary cause is sharing injection equipment among intravenous drug users (IDUs). In this regard, Needle and Syringe Availability and Support Programs (NSASPs) have proven effective in reducing the risk behaviour in this population. HIV/AIDS spread associated with IDU is an emerging issue in Ganjiakou, Beijing, China, and there is an urgent need to introduce a NSASP to help prevent or reduce the incidence of HIV/AIDS among IDUs in this community. In practice, community acceptance, support and involvement are essential to the success of NSASPs. This highlights the importance to understand community views and concerns about NSASPs. This study serves this purpose by examining community perceptions of NSASPs.

The study was interpretive and explanatory in nature utilising qualitative methods to develop an in-depth understanding of community perceptions of NSASPs in Ganjiakou. The primary data collection method was semi-structured in-depth interviews. A thematic analysis of the data was undertaken informed by grounded theory methodology.

The study identified three categories of community perceptions of NSASPs: situation of community, circumstances of individuals and nature of NSASPs. Each of the categories comprises a number of factors clustered under themes. An explanatory framework was built to present the interrelations and interactions between the categories, themes and factors. The study findings enhance our understanding of community views and concerns about NSASPs and provide useful information for the planning and implementation of NSASPs in China.

Reorientation of child and family health Services: Sunshine Coast Health Service District

Candidate: Marilyn Chew

The research that underpins this thesis focused on analysing specific elements of the change management processes that were employed to effect reorientation of child and family health services in the Sunshine Coast Health Service District. In particular, the research aimed to understand the impact of implementing the Family CARE Home Visiting Program on child and family health staff and the services that they provide. This necessitated changes in program and service structures, changes in practice for individual staff, and changes in working relationships. Examination of these aspects of change required gaining an understanding from staff regarding their experience of the change processes and the impact of the changes on their practice, their behaviour and attitudes, as well as their working relationships. Qualitative methods, including focus groups and interviews, were used to conduct this research. The data were systematically analysed and collated into themes that emerged from the focus groups and interviews. These themes were further analysed by reflecting on the literature and developing a concept diagram which illustrated the key research findings. The results of this research indicate that the Sunshine Coast Health Service District has made significant changes to the services it provides to families with infants and young children. The process of change has been supported by policy and a strong evidence base for providing services differently. In addition, there is a culture of

continuous improvement and learning, with strong leadership and opportunities for staff to participate at all levels of service development.

An investigation of the role of local government in obesity prevention

Candidate: Libby Baillie

This study investigated the actual and potential role of local government jurisdictions in obesity prevention. Data were collected using three methodologies for providing public health intelligence relating to this issue, including a review of literature, analysis of existing obesity prevention strategy frameworks, and key stakeholder interviews. The analysis of these three intelligence sources focused on investigating potential areas where local governments can contribute to the actions, settings and targets of obesity prevention interventions, as outlined in existing national obesity strategy frameworks. In Australia, responsibility for obesity prevention has tended to rest with State and Federal government jurisdictions. There is limited scientific literature outlining the potential role of local governments available. This study demonstrates that stakeholders at the local government level believe they are in a unique position to contribute to the prevention of obesity at a population level, as they have the capacity to link local communities and neighbourhoods with state and federal governments. This potential is also supported by analysis of the types of interventions required, in particular those relating to reducing the impact of obesinogenic environments.

Exploring theory, policy, and practice of sexuality education on the Gold Coast

Candidate: Elizabeth A. Barber

This dissertation identifies key themes in the current literature and policy of sexuality education and applies these findings to the context of the Gold Coast, Queensland to gain insight into how health and education policies and research literature relate locally. Overall, current policies and guidelines reflect social justice and contemporary public health principles. However, the literature highlights several aspects of how sexuality education is commonly practiced contrary to these principles. Major criticisms emphasise a lack of clear definitions and values, inadequate teacher training, support and resources, fear of community response, and social environments that reward sexist and homophobic behaviours and promote conformity in children. The Gold Coast was considered unique in terms of its celebration of glamour and partying in events such as “Indy” and “Schoolies”. Complements and disparities between government policies and the practice of sexuality education on the Gold Coast were found. Focus groups and an in-depth interview involving six school staff, two parents and four sexual health educators investigated how these stakeholders perceive sexuality education. The participants of the qualitative component agreed that involvement of parents and local community is the most significant missing link in comprehensive sexuality education. This dissertation concludes that much of society is not yet prepared to accept children’s need and right to learn about, experience, and express their sexuality. Community engagement in the development, implementation, and evaluation of sexuality education will likely improve its acceptability.

Cambodian Mental Health Plan: A case study of the mental health policy process in a post conflict developing country

Candidate: Alexis Stockwell

Cambodia, a post colonial developing country whose physical, social, human and economic capital was violently restructured over 20 years by the Khmer Rouge regime, recently undertook a policy process to reform their mental health sector by developing a DRAFT Cambodian Mental Health Plan 2003-2022. This qualitative research explores the development of this Plan within a post conflict developing country context using personal interviews with key informants involved in the policy development process. In particular the research explores the influences on the policy process, including stakeholders and context, using theories predominantly drawn from radical policy analysis perspectives but also from literature on colonisation, globalisation, international organisations, violence/conflict, mental health, health, and mental health policy perspectives. The policy process research approach was taken because analysis of the mental health policy process is a young and underdeveloped discipline particularly for post conflict developing countries like Cambodia. Consequently this research was formative in nature. It gives insight to the dynamics of policy formulation and the significance of structural, professional, and interpersonal issues, to provide opportunities for the generation of hypotheses rather than final findings. The policy analysis theories and the interview tool developed to collect data for the research have been critiqued and a number of recommendations have been made for the use of this interview tool in similar research in the future.

Patterns of sun exposure and their relationship to melanoma of the trunk, of the head and neck, and of lentigo maligna melanoma in southeast Queensland.

Candidate: Mark Sticklely

This study, utilising a case-case design sought to determine whether each of several different measures of self-reported sun exposure, relating to childhood, adolescence or adulthood had a differential effect on the development of three different subtypes of melanoma – specifically superficial spreading melanoma or nodular melanoma of the trunk, superficial spreading melanoma or nodular melanoma of the head and neck, and lentigo maligna melanoma. In this series, participants with truncal melanoma were younger than those with either head and neck melanoma or LMM. There were few significant associations between child and adolescent sun exposure and type of melanoma. Workday sun exposure tended to be associated with either head and neck melanoma or LMM, while weekend and holiday exposure tended to be associated with truncal melanoma, although few of these measures reached statistical significance. This data lends some support to theory that melanoma arises from more than one pathway.