Pacific Health Review

Merry Christmas from the team at Research Review

Making Education Easy

Issue 13 – 2011

In this issue:

Kia orana, Fakalofa lahi atu, Talofa lava, Malo e lelei, Bula vinaka, Taloha ni, Kia ora, Greetings.

Welcome to the December edition of Pacific Health Review for 2011. As we reflect on a year of unprecedented natural events in New Zealand and ponder news reports of the worsening European financial crisis, and closer to home the reports of the vulnerability of our Pacific region to climate change, it can seem the world we live in is in perpetual crisis. On a brighter note, however, summer is here and there are signs of hope and success when we reflect on developments in Pacific health in 2011.

Ministry of Health reports for immunisation and cancer screening services for Pacific people are examples of what can be achieved for our communities. In 2011, Pacific 2-year-old children have the highest immunisation rates compared to all other ethnic groups in New Zealand. This is important, because immunisation is one of the most effective ways to protect our children against infectious diseases.

Health system reports also show that over the past four years uptake of screening for cervical cancer and breast cancer services has occurred at a higher rate for Pacific women than other ethnic groups. The potential gain from these results is demonstrated in the research report on cancer trends reviewed in this edition. It shows a 64% reduction in cervical cancer incidence in Pacific women between 1981 and 2004. The common risk factors for cancer, as well as cardiovascular disease and many other chronic conditions are diabetes, obesity and (lack of) physical activity. These issues, as well as child and youth health, will continue to be a focus of Pacific Health Review.

We are also continuing our scan of the health research literature relating to Pacific Island countries. The articles included here – on MRSA in Samoa and rheumatic fever in Fiji are important reminders both of our transnational, shared populations and our interdependent communities and health systems. We can learn from innovation that is happening in Pacific countries and apply these learnings to the challenges we face in New Zealand for important health issues like rheumatic fever.

I have started a new role at the Ministry of Health as Chief Advisor, Community Health Service Improvement. The role integrates a focus on programmes for child and maternal health, immunisation, tobacco control, primary care and Pacific health. We will strengthen approaches to Pacific health by ensuring a Pacific focus is maintained through the work of these programmes. Through such a comprehensive range of health programmes we now have greater potential to achieve positive gains in the health and wellbeing of our communities and improved community engagement with the health system.

Thanks to all the reviewers and the teams at Pacific Health Review and Pacific Perspectives who have brought us this publication in 2011. And to our readers, I would like to take this opportunity to wish you and your families a very happy and healthy Christmas. I look forward to working with you again in 2012.

Dr Api Talemaitoga, Chief Advisor Community Health Service Improvement

Dr Debbie Ryan, Principal Pacific Perspectives, selected the articles and coordinated the commentaries for this edition. debbieryan@researchreview.co.nz

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Dr Api Talemaitoga, Chief Advisor, Community Health Service Improvement, wishes to acknowledge the commentaries and insights provided by Dr Debbie Ryan, Dr Siniva Sinclair, Dr Corina Grey, Dr Ofa Dewes, Dr Ineke Meredith, Siloma Masina and Dr Sai Boladuadua.

Global burden of disease in young people aged 10-24 years: a systematic analysis

Authors: Gore FM et al

Summary: This paper provides new estimates on the total global burden of disease among young people.

Comment: (Dr Siniva Sinclair) This paper presents, for the first time, a systematic overview of the health of young people aged 10–24 years, based on the World Health Organisation's 2004 Global Burden of Disease study. The age range 10–24 years, covering adolescence and early adulthood, is also subdivided into three smaller age bands: 10–14, 15–19 and 20–24 years. Altogether, people in this age group comprise 27% of the world's population and bear 15.5% of the total burden of disability-adjusted life years lost (DALYs) across all ages, the proportion increasing with age within this group. Moreover, a number of risk factors that commonly start in adolescence (such as tobacco use, low physical activity, high blood pressure, and overweight / obesity) make significant contributions to disease burdens in later adulthood. The study reports separately on the two categories that make up DALYs: years of life lost (YLL), reflecting premature mortality and years lost because of disability (YLD). There are huge disparities between high-income countries and other regions of the world, with Africa and Southeast Asia bearing particularly disproportionate burdens of DALYs, largely because of much higher YLL; YLD varies less between regions than YLL. This highlights the importance of considering the burden of non-fatal disease, such as neuropsychiatric disorders (the leading cause of disability in young people in each region) as well as mortality (in which injury prevention must be given more attention). Such a compilation of data from existing sources worldwide makes an important contribution to understanding the health of young people in this age range, but also highlights the importance of improving health data collection, including for more detailed age categories than are commonly in use.

Reference: Lancet. 2011;377(9783):2093-102.

http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2811%2960512-6/abstract

Do enhancements to the urban built environment improve physical activity levels among socially disadvantaged populations?

Authors: Pearce JR & Maddison R

Summary: The authors reviewed international and New Zealand-based literature for the purpose of exploring the impact of open space and street connectivity on physical activity among socially-disadvantaged populations. Enhancements to the environment are likely to have a positive effect on physical activity behaviour. However, the effect on these population groups, including Māori and Pacific peoples, in New Zealand is inconclusive due to the lack of credible evidence. High-quality research is urgently needed to determine the effect of changing the urban built environment on physical activity and obesity prevention.

Comment: (Dr Ofa Dewes) This high-level review flags the urgent need to identify sustainable environmental solutions to increase physical activity and prevent obesity in order to arrest the burgeoning obesity-related consequences that would otherwise result.

That the international literature provides evidence of a positive effect on physical activity behaviour is encouraging. That credible evidence is lacking for socially-disadvantaged population groups in New Zealand, including Māori and Pacific peoples, serves to highlight a chronic need for action. Doing nothing is not an option. Neither are indefinite delays at enhancing the built environment through improved access and street connectivity including open spaces. Ignoring what needs to be done, as identified by the authors, will only perpetuate health inequalities among socially disadvantaged, Māori and Pacific populations, in New Zealand.

Research that identifies sustainable solutions to prevent obesity as well as facilitate weight loss and weight management, and endeavours to monitor and evaluate the effects of improvements to the built environment are needed now. Culturally appropriate and ethnic-specific approaches to encourage physical activity and effect healthy lifestyle change among Pacific peoples, and complement enhancements to the built environment, are also warranted.

Reference: Int J Equity Health. 2011;10:28.

http://www.equityhealthj.com/content/10/1/28

Changes in patterns of racial disparities in attending low-mortality hospitals and outcomes among patients with stroke

Authors: Shen JJ, Lu M

Summary: Findings from this study can be used assist in prioritising areas for policy interventions to eliminate racial disparities and improve health care. The researchers, based at the University of Nevada at Las Vegas, examined patterns of racial/ethnic disparities as reflected by admission to high-quality hospitals as well as outcomes represented by hospital mortality among all patients with stroke.

Comment: (Dr Corina Grey) This United States study used a nationally representative dataset to look at ethnic patterns of admission to high-quality (low-mortality) hospitals and hospital mortality among 273,532 stroke patients. Patients were categorised into the following ethnic groups: White, African American, Hispanic/Latino and Asian/Pacific Islander. Between 2000 and 2006 African Americans and Hispanics showed a marked improvement in access to high-quality hospitals, being more likely to access better hospitals than Whites in 2006. Asians/Pacific Islanders with stroke, on the other hand, were less likely to access high-quality hospitals throughout the study period. No disparities in hospital mortality from stroke were found between ethnic groups, but the study did not look at other outcomes for stroke, such as length of hospital stay or on-going disability.

The results from this study are not necessarily directly relevant to Pacific health in New Zealand: access to public hospitals in this country are based on geographical location, not insurance status or ability to pay, and no New Zealand study would group Asian and Pacific peoples together, as stroke incidence and outcomes are likely to differ considerably between the two groups. However, it does raise issues that need to be considered here in New Zealand. A 1997 study reported much higher 28 day case-fatality rates from stroke in Maori and Pacific peoples compared to Europeans.[1] Almost 20 years on, the study has not been repeated and the reasons behind the higher case fatality rates have not been adequately explored. Further, given that Pacific peoples, on average, suffer from strokes at a much younger age than Europeans, studies are needed investigating ethnic differences in on-going disability and years of life lost from stroke.

[1] Bonita R et al. Ethnicity differences in stroke incidence and case fatality in Auckland, New Zealand. Stroke. 1997;28:758-61.

Reference: Ethnicity Dis. 2011;21(2):135-41.

http://health-equity.pitt.edu/3294/

Socioeconomic disparities in stroke rates and outcome: pooled analysis of stroke incidence studies in Australia and New Zealand

Authors: Heeley EL et al

Summary: This paper provides evidence that people living in areas that are relatively more deprived in socioeconomic terms experience higher rates of stroke.

Comment: (Dr Corina Grey) The aim of this study was to estimate the influence of socioeconomic status on stroke incidence and case fatality. Data from three population-based studies (the Perth Community Stroke Study 1995-2000, Northeast Melbourne Stroke Incidence Study 1996-1999, and Auckland Regional Community Stroke Study 2002–2003) were used. Of the 3133 incident cases of stroke that occurred over the three studies, 3077 (98%) were able to be matched to deprivation data. The age-standardised stroke incidence rate was 70% higher among the most deprived quintile compared to the least deprived, and patients in the most deprived areas had strokes at an earlier age than those in the least deprived area (68 years compared to 77 years). The authors estimated that up to one-fifth of strokes in Australia and New Zealand could be prevented by improving the socioeconomic profile of those living in the most deprived areas. However, area-level deprivation was not found to be associated with 12-month case-fatality.

Although ethnicity was not a focus of this paper, it is pertinent to Pacific health. Pacific peoples are overrepresented in the most socioeconomically deprived areas of New Zealand and have been reported to be suffering from strokes at an increasing rate, an earlier age, and with a higher case-fatality compared to non-Maori non-Pacific peoples.[1] Programmes aimed at reducing stroke rates in New Zealand must aim to reach the most vulnerable: Māori, Pacific peoples and those living in the most deprived areas (groups that are not necessarily mutually exclusive).

[1] Feigin VL et al. Burden of stroke in Māori and Pacific peoples of New Zealand. Int J Stroke. 2007;2:208-10.

Reference: Med J Aust. 2011;195:10-4.

http://tinyurl.com/stroke-disparities

Social inequalities or inequities in cancer incidence? Repeated census-cancer cohort studies, New Zealand 1981-1986 to 2001-2004

Authors: Blakely T et al

Summary: There are important disparities in cancer incidence between Pacific and European/Other people in New Zealand.

Comment: (Dr Ineke Meredith) This paper examined ethnic and socioeconomic differences and trends in cancer incidence in New Zealand between 1981–2004. The authors have linked 1981, 1986, 1991, 1996, 2001 census data with incident cancers from the New Zealand Cancer Registry to create five cohorts of the entire New Zealand population.

Compared to European/Other people in New Zealand, Pacific people have higher incidence rates of cervical, endometrial, ovarian, liver, lung (males), pancreatic and stomach cancers, and myeloma. Despite colorectal cancer being the most commonly diagnosed cancer in New Zealand, Pacific people have a risk approximately 50% less than that of European/Other people. Pacific people have lower incidence rates for bladder, brain, breast, kidney, oesophageal and prostate cancers and melanoma. Differences are large, ranging from a 90% reduced risk of melanoma to a risk over six times greater than European/Others for liver cancer. Important trends over time for Pacific women were a 64% reduction in cervical cancer incidence (p trend <0.05), and a 245% increase in lung cancer (p trend $= 0.02$). Pacific men experienced a 366% increase (p trend $= 0.02$) in prostate cancer over time.

Disparities in cancer incidence are partially explained by differences in smoking (lung in males) and infectious disease (HPV and cervical cancer, *H. pylori* and stomach cancer, HBV/HCV and liver cancer). However, whilst Pacific people experience a disproportionate burden of cancer related to infectious disease, they are now facing an important transition with burgeoning evidence supporting the role of diabetes, obesity and physical inactivity in carcinogenesis. Endometrial cancer is a good example of this with Pacific women experiencing a risk over two and a half times greater than European/Other women. Kidney cancer is an unexplained disparity. Pacific people have the highest rates of established risk factors for this disease (obesity, diabetes and ESRF) yet they have a risk 50% less than European/Others for developing kidney cancer. Reassuringly, it seems the cervical screening programme has been successful for Pacific women with a statistically significant reduction in incidence rates over time.

This paper highlights several areas where further research into unexplained ethnic disparities is required. Continued effort is required to reduce the burden of cancer related to infectious disease and tobacco; these cancers are preventable. New Zealand parliament has agreed to a goal of making New Zealand smokefree by 2025. With increasing evidence for the role of obesity in cancer, reducing exposure to obesogenic environments is crucial.

Reference: Cancer Causes Control. 2011;22(9):1307-18.

http://www.springerlink.com/content/7n18088136316840/

Place of death related to demographic factors for hospice patients in Wellington, Aotearoa in New Zealand

Authors: Taylor EJ et al

Summary: The article discusses the findings of a retrospective chart review of all patients who were under the care of Mary Potter Hospice between 2006–2008, with a sample of 1268 cases who received care from the hospice either through their inpatient unit or in the community; with a recorded place of death. The review findings support other research that points to the association of social, economic, ethnic and cultural factors with where people die. Data collected clearly define societal differences in patient's approaches and view of death. However, the findings could also point to the need for a rethink of service delivery and a review of models of services that better meet the cultural needs of minority groups.

Comment: (Siloma Masina) This article raises important issues for Pacific communities and their access to palliative care services. I have grouped my comments under the headings strengths, challenges, and other considerations.

The strengths of the research are:

- the clear distinction between places of death for the different ethnic groups;
- culture is identified as a significant factor in the choices people make about where they die. (However, the authors do not discuss how they define culture);
- there is a clear distinction in factors determining those that die at home and those who die at the hospice;
- the findings confirm similar conclusions in other research cited by the authors;
- the recommendation from this research that Pacific people's place of death can be a driver for modelling service delivery to meet their needs. "Each society, ultimately, needs to support care at the end of life that best befits persons of that society".

Challenging points:

- Pacific cultural worldviews of dying are not always considered when planning care and end-of-life services.
- There is a need for the promotion of the hospice philosophy to Pacific communities. This promotion needs to be tailored to health literacy needs.
- "...the strongest evidence from this study (from the multinomial regression) is the finding that dying at home was only predicted by being of a Pacific ethnicity". Greater discussion is required to understand how ethnicity impacts on choice of place to die. Ethnicity can be defined as an individual's heritage, or other important factors such as culture, religious and or spiritual, beliefs and lifestyle may also be relevant.
- Key phrases used in the report such as "attitude to death" need to be explored further to identify whether assumptions the authors have made are valid for people with a different world view.

Additional points to consider

- Other factors that could have been explored that may impact on a Pacific person's choice of where they die are external factors such as accessibility of services, availability of services in Pacific languages and appropriate support.
- How does the promotional information and communication process used by hospices support a Pacific worldview/experience and understanding of death?
- The low proportion of Pacific people who die in a hospice setting leads to questions of whether there is effective promotion of the services, as well as whether the way hospice services are delivered are appropriate for these populations.
- The high proportion of hospice patients who die at home may indicate the need to strengthen hospice services in the community setting.

Reference: Palliat Med. 2011 Jun 22. [Epub ahead of print]

http://pmj.sagepub.com/content/early/2011/06/22/0269216311412229.long

Siloma Masina

As this issue goes to press, we would like to pay our respects to the family of our dear colleague, friend and champion of Pacific health, Siloma Masina, who passed away suddenly on Tuesday 20 December 2011. Siloma contributed to this Pacific Health Review, a further example of her hard work and dedication to improving the health and wellbeing of our Pacific people.

Siloma will be missed by her family, work colleagues and friends. We in the Pacific health sector know she leaves with us a legacy - the importance of advocating for improved health outcomes for Pacific families and communities. Siloma's contribution to Pacific health will always be remembered by those of us who have had the privilege of working with her.

Isalei. Nu qai laki moce no neimami tokani lomani.
(We miss you. Farewell dear friend).

Comparison of two modes of delivery of an exercise prescription scheme

Authors: Foley L et al

Summary: Review by Green Prescription (GRx) referrals from health professionals has been shown to be effective for increasing the physical activity levels of patients. Little is known about which methods of delivering the programme represent the best value for money. The purpose of this paper was to compare the cost and outcomes of two modes of delivery of a GRx programme. One mode offered phone support involving monthly telephone calls over a 3–4 month period to encourage physical activity participation. A second mode offered community support via weekly face-to-face support group meetings, in which physical activities were offered.

Comment: (Dr Api Talemaitoga) The major finding from this article was that the 2 methods of delivering the Green Prescription (GRx) programme were costed the same. The two modes of delivery were monthly telephone support for 3-4 months and a weekly face-to-face community support model. The outcomes measured were the increase in the level of physical activity and participant satisfaction. The community support model led to participants achieving a greater number of days of exercise per week and greater satisfaction than those supported by the monthly telephone support model.

It is not surprising that the majority of those that actually registered for the programme (there was a 68% drop off rate from referral to registration) preferred the weekly face-to-face community support model, and that Māori and Pacific peoples favoured face-to-face community support.

Pacific clinicians are well aware that Pacific patients prefer face-to-face discussions, where language is just one of the ways of communicating health messages. The cultural nuances of the relationship, including nonverbal cues play an important part in the interaction with health professionals. It is a strength harnessed by Pacific health providers and an example of cultural competence best practice, required of all health practitioners by the Health Practitioners Competency Act (HPCA).

The article findings are also relevant for health promotion and public health practitioners. We must ensure that our health messages are (to the best of our abilities) linguistically and culturally appropriate for the diverse ethnic groups that use our health system. Only then can we address inequity of access to health care and ensure maximum gain of the full benefits of our health service which will improve health outcomes for all New Zealanders.

Reference: N Z Med J. 2011;124(1338):44-54.

http://journal.nzma.org.nz/journal/abstract.php?id=4757

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Methicillin-resistant *Staphylococcus aureus*, Samoa, 2007–2008

Authors: Alesana-Slater J et al

Summary: These researchers investigated the prevalence and characteristics of methicillin-resistant *Staphylococcus aureus* (MRSA) in Samoa, by assessing wound swabs from 399 persons with skin and soft tissue infection living there. MRSA was isolated from 9% of study participants; 34 of the 196 *S. aureus* isolates were MRSA. Of the 5 identified MRSA genotypes, the 3 most common were USA300, the Queensland clone, and a sequence type 1 MRSA strain that shares <85% homology with the sequence type 1 MRSA strain common in the region (WA MRSA-1). The Southwest Pacific MRSA clone was identified but accounted for only 12% of MRSA isolates.

Comment: (Dr Api Talemaitoga) This project provides a great example of Pacific mentoring. The lead author is Samoan and at the time of this research was a medical student (now a house surgeon). He was supported to undertake this project in Samoa by a Samoan clinician/academic working at the medical school he attended.

The report makes the point and I concur that the difficulties for the project of working in resource- and laboratory infrastructure-challenged Samoa were overcome by researchers able to understand the culture and speak the language and who had experience of living in Samoa.

One would assume that for a small Pacific nation like Samoa, managing the burden of non-communicable diseases and chronic diseases with limited public health system resources, the issue of antimicrobial drug resistance would be the last thing on a long list of priorities. The literature supports this, as there is limited information and few publications on this topic in Pacific Island states.

The authors state that relatively high rates of MRSA infection have been reported in Polynesian people living outside their island nations in places like Alaska, Australia and New Zealand. With the trends in increased travel and tourism between these countries and Pacific island states the authors note that "...antimicrobial drug resistance does not respect national boundaries...". Clinicians in New Zealand need to be aware of this possibility when treating Pacific peoples visiting our shores or tourists that may have acquired an infection while on holiday in the Pacific region. The authors express surprise that the Southwest Pacific clone MRSA was not the dominant type. They identified high prevalence rates of the USA 300 and Queensland clone MRSA in the isolates collected. This also reflects the amount of travel between these countries.

It is interesting to note that there was no association between increased MRSA infections and recent use of antimicrobials or health care. There was no geographical clustering of cases in the various sites from which samples were collected. Of note, the main island of Upolu had more participants with MRSA isolated from them than from participants in the less-developed island of Savai'i. Upolu also has higher numbers of tourist visitors.

Antimicrobial drug resistance is an international issue of concern. For resource-challenged Pacific nations there are potentially significant cost implications. High antimicrobial use correlates with high levels of drug resistance and it is concerning that this research shows that more than 60% of all prescriptions dispensed in Samoa are for antimicrobial drugs. Inadequate dosing and poor adherence by patients (which are reported anecdotally in Samoa) also increase the development of drug resistance.

Clinicians and pharmacists in New Zealand must be aware of this emerging problem in our Pacific country neighbours. They can assist with addressing the problems by ensuring that the explanations given to patients about the reasons for dosing intervals, expected benefits and possible side effects and length of time on medications need to be clear and concise. This is true for all medications. The support of aid agencies and development partners in assisting Pacific countries with performing quality antimicrobial drug susceptibility testing and surveillance must be strongly encouraged, not only for humanitarian reasons in providing assistance to Pacific Island states, but also to assist New Zealanders who regularly travel to the Pacific region for holidays or work.

Reference: Emerg Infect Dis. 2011;17(6):1023-9.

http://wwwnc.cdc.gov/eid/article/17/6/10-1083_article.htm

High prevalence of rheumatic heart disease in Fiji detected by echocardiography screening

Authors: Reeves BM et al

Summary: The authors of the study sought to demonstrate the efficacy, feasibility and effectiveness of echocardiographic screening for RHD in Fiji. They randomly selected a primary school in Lautoka, Fiji and carried out in-school (portable) echocardiography and clinical examination on pupils aged 5 to 14. Those found with abnormal findings were then recalled for complete in-hospital clinical assessment and echocardiography by a paediatrician with expertise in RHD and echocardiography. The prevalence of definite RHD detected by echocardiogram screening was 55.2 per 1000 compared with 11 per 1000 detected by clinical examination ($p<0.001$). The results showed that echocardiography is five times more sensitive at detecting RHD compared with clinical examination. A cost analysis also showed that a comprehensive screening programme is estimated to cost less than US$40 per patient detected.

Comment: (Dr Sai Boladuadua) Rheumatic heart disease is highly prevalent among developing countries and particularly in the Pacific region. Before this study, Tonga recorded the highest prevalence of RHD of 33.2 per 1000 (confirmed by echocardiography after being screened by clinical examination).[1] This study has shown results that have exceeded that number and confirms that Fiji has the highest documented prevalence of RHD in the world. The fight to try and curb this preventable cause of morbidity and mortality involves both primary (throat swabbing) and secondary (intramuscular penicillin) prophylaxis. Detection of cases for secondary prophylaxis includes some form of echocardiographic screening. This study has demonstrated that echocardiographic screening is cost-effective and feasible in areas of high prevalence using a rapid technique, portable machine with a 'non-expert' operator. Obviously there needs to be an appropriate model developed for RHD screening (by age and screening) in high prevalence areas, and screening criteria met, but combining echocardiographic screening with secondary penicillin prophylaxis has benefits and potential to reduce the prevalence of RHD.

This study has relevance to our Pacific population in New Zealand as Māori and Pacific Island children almost exclusively bear the burden of acute rheumatic fever, with age-specific rates in the 1990s of 31.9/100,000 for Māori children, 64.5/100,000 for Pacific Island children and 1.7/100,000 for European children.[2] There has been considerable effort over the years to try and combat this so called 'third world disease'. The government's commitment of $12 million over four years to this cause is an example of this. Although this is predominantly focussed on primary prophylaxis (school-based throat swabbing campaigns), there is potential scope to combine echocardiographic screening with primary prophylaxis in high prevalence populations to try and reduce the prevalence of RHD.

[1] Carapetis JR et al. Evaluation of a screening protocol using auscultation and portable echocardiography to detect asymptomatic rheumatic heart disease in Tongan schoolchildren. Nat Clin Pract Cardiovasc Med. 2008;5(7):411-7.

[2] Thornley C. Rheumatic fever registers in New Zealand. *Pub Health Rep.* 2001;8(6):41-4.

Reference: J Paediatr Child Health. 2011;47(7):473-8.

http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1754.2010.01997.x/abstract