

Pacific Health Review

Making Education Easy

Issue 14 – 2012

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

Welcome to Pacific Health Review.

In this era of globalisation and technological advances, our health workforce is facing unprecedented challenges in providing quality healthcare for increasingly diverse populations. At the same time, we are expected to achieve more within a fiscally constrained environment and in the context of the Treasury warning that economic conditions in New Zealand are likely to worsen before improving. In such circumstances, we have a duty to ensure that the most vulnerable in our community receive the health care they need.

This edition of Pacific Health Review includes articles which address the high rates of respiratory disease in Pacific children. The studies on hospital admissions for lower respiratory tract infections and primary care management of asthma are a reminder that these problems have continued in Pacific communities over the past decade.

We are reminded that Pacific young people also have persisting unmet health needs. Included are studies that provide insights on youth-friendly services in primary care, and factors associated with smoking prevalence in Pacific fathers. These and the other studies in this edition point to socio-economic disadvantage, and cultural and language factors as foci for interventions to improve health outcomes. Other findings are that the quality of health services and the characteristics of providers are important determinants of patient outcomes.

The Ministry of Health has identified that a clinical workforce has a key role in designing and implementing the changes required to deliver better health care at the front line. An example of this leadership role is the work of clinicians and researchers contributing to the knowledge and evidence base for improving the health of all our populations, especially the most vulnerable. Achieving real changes for these groups requires us to build on what we know works – supporting interdisciplinary networks to share innovation and provide integrated approaches to care. A special thank you to our commentators for the insights they have provided.

We welcome your feedback on how Pacific Health Review can contribute to this work.

Best wishes

Dr Api Talemaitoga

Chief Advisor Community Service Improvement

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Dr Api Talemaitoga, Chief Advisor, Community Health Service Improvement, wishes to acknowledge the commentaries and insights provided by Dr Teuila Percival with additional comments on Vitamin D by Prof Robert Scragg, Dr Eta Raicebe, Dr Alec Ekeroma, Dr Fionna Bell, Dorothy Clendon, Dr Andrew Chan Mow, Dr Debbie Ryan, Barbara Vardey, Mafi Funaki-Tahifote and Dr Ineke Meredith.



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Child nutrition and lower respiratory tract disease burden in New Zealand: a global context for a national perspective

Authors: Grant CC et al

Summary: This paper considers the contribution of malnutrition to acute lower respiratory infection (ALRI) disease burden in children aged <5 years in New Zealand.

Comment: (Dr Teuila Percival, with comments on vitamin D by Professor Robert Scragg) Lower respiratory tract disease is a major problem for Pacific children in New Zealand. As mentioned by Grant et al, New Zealand's overall hospitalisation rate for LRT disease is high compared with other developed countries but most of this excess burden of disease is with Pacific and Māori children; New Zealand European hospitalisation rates are not dissimilar to those in the USA or UK. Pacific child hospitalisation pneumonia rates are 5 times that of Europeans and more than twice that of Māori.(1) Similarly, bronchiolitis hospitalisation in <1-yr-olds is 4 times higher in Pacific peoples than Europeans.(1)

There is a clear socioeconomic gradient exhibited for child LRTI admissions.(1) Maternal smoking, lack of breastfeeding, low birth weight as mentioned all impact on LRTI. There is some discussion that poor housing, poor nutrition and access to primary healthcare are particularly important in New Zealand.(2)

The sequelae of repeated LRTIs may result in chronic productive cough or bronchiectasis. Pacific children experience this chronic lung disease at rates many times higher than Māori or Europeans and not dissimilar to Aboriginal Australian children. The increased severity of disease seen in New Zealand also suggests some delay in presentation.(3) This disease is a continuing concern in adult life and is a major cause of adult mortality in Pacific females.(4) The burden of respiratory disease and the associated determinants and risk factors are of considerable importance to Pacific peoples.

Grant's review presents the likely nutritional associations relevant in the New Zealand context. The lack of breastfeeding has been a concern for Pacific peoples in New Zealand where initiation rates are high with a rapid drop-off in the first 3 months of life. The Pacific Islands Families Study identified a number of reasons why Pacific women fail to continue breastfeeding with policy and service delivery implications.(5)

Increased risk of infant acute lower respiratory disease with low maternal vitamin D levels has been described elsewhere.(6) There is some concern that vitamin D deficiency is probably quite prevalent in Pacific mothers, with a recent study screening pregnant women for vitamin D deficiency in Wellington finding 94% of the Samoan mothers were vitamin D-deficient.(7)

The 2002 NZ Children's Nutrition Survey reported that 58% of Pacific children have insufficient vitamin D levels, much higher than other ethnic groups.(8) This is due to increased skin pigmentation limiting synthesis of vitamin D by skin, since sun exposure contributes about 90% of vitamin D. Outdoor activities by children will increase vitamin D levels, and may also protect against respiratory infection, given a recent report from an Auckland case-control study of children aged <5 years, which found that children who spent <30 minutes per day outside had double the risk of pneumonia compared to those staying outside for longer.(9)

Pacific children also experience the highest hospitalisation rates for all other infectious diseases.(1) Some of these, along with respiratory disease, may be impacted by nutritional deficiencies or lack of breastfeeding with adequate housing and access to healthcare continuing to be important modifiable determinants that can reduce acute Pacific hospitalisations and improve children's health.(10)

Further investigation of vitamin D deficiency and respiratory disease is an area of importance for Pacific peoples.

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4. Kolbe J, Wells AU. Bronchiectasis: A neglected cause of respiratory morbidity and mortality. *Respirology*. 1996;1(4):221-5.
5. Schuller P et al. Exclusive and any breast-feeding rates of Pacific infants in Auckland: data from the Pacific Islands Families First Two Years of Life Study. *Public Health Nutr*. 2006;9(6):692-9.
6. Morales E et al. Maternal vitamin D status in pregnancy and risk of lower respiratory tract infections, wheezing, and asthma in offspring. *Epidemiology*. 2012;23(1):64-71.
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9. Grant CC et al. Risk factors for community-acquired pneumonia in pre-school-aged children. *J Paediatr Child Health*. 2012 (in press).
10. Jackson G et al. Reduced acute hospitalisation with the healthy housing programme. *J Epidemiol Community Health*. 2011;65(7):588-93.

Reference: *J Paediatr Child Health*. 2011;47(8):497-504.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1754.2010.01868.x/abstract>

Risk factors for community-acquired pneumonia in pre-school-aged children

Authors: Grant CC et al

Summary: This paper discusses risk factors for pre-school-aged children developing and being hospitalised with community-acquired pneumonia (CAP) in New Zealand.

Comment: (Dr Eta Raicebe) The study must be applauded for its design, which has analysed a multiple number of factors associated with CAP and achieved the numbers (more than 10% of their target) in two arms of the study population (pneumonia requiring hospital admission and case controls) to be able to have adequate power and minimise bias.

This study highlights poorer nutritional status at the time of the study, spending less than 30 minutes per day outside for the preceding four weeks, previous chest infections and bedroom mould as risk factors for CAP. The children who required hospital admission were interestingly associated with maternal history of pneumonia, implying that environmental factors contributed to childhood CAP. Not surprisingly, overcrowded households, exposure to second hand smoke and bedroom mould were also risk factors. Importantly, breastfeeding was associated with a lower rate of CAP though there was no difference found when looking at duration of breastfeeding.

The authors state that they were unable to differentiate the infectious cause of these CAPs. It will be interesting to see the effect of the pneumococcal vaccine that has been introduced into the NZ childhood immunisation schedule since this study was conducted, as *Streptococcus pneumoniae* is the most common bacterial pathogen to cause CAP in children under 5 years.

Reference: *J Paediatr Child Health*. 2012 (in press)

<http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1754.2011.02244.x/abstract>



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Human papillomavirus genotype prevalence in cervical biopsies from women diagnosed with cervical intraepithelial neoplasia or cervical cancer in Fiji

Authors: Tabrizi SN et al

Summary: This paper describes human papillomavirus (HPV) genotype distribution in cervical cancer and precancers (cervical intraepithelial lesion [CIN]3) in Fiji.

Comment: (Dr Alec Ekeroma) This study is welcome, as it adds to our knowledge on the burden of HPV disease in the Pacific and the genotypes of HPV prevalent in Fiji. A reputable team whose members have done similar studies previously did the study and co-investigators were Fiji health professionals whose contribution was vital in the completion of the project. The methodology was sound and the contribution of the WHO HPV laboratory in Victoria is noted.

This study found 100% (n=112) of women with a high-grade lesion (CIN3) and 97% (n=152) with squamous cell carcinoma of the cervix (SCC) had a high-risk HPV (HrHPV). HPV 16 and 18 were present in 88% of the samples and HPV 16 alone present in 71%. What is not explained is the significantly higher rate of HPV 16 in Indo-Fijians compared to Melanesian-Fijians, which may well be due to sample selection bias.

The paper supports the evidence that, of the more than 100 HPV genotypes, about 15 are known as high-risk (HrHPV) at causing cervical dysplasia and cancer. HPV 16 and 18 are HrHPV types more prevalent in severe cervical dysplasia and SCC elsewhere, which again, is consistent with the findings from Fiji.

The findings support the advocacy for a comprehensive HPV vaccination programme in Fiji, which may prevent 88% of women developing cervical dysplasia and cancer. It is important, however, to consider the costs and benefits of all options. Thailand opted for strengthening its cervical screening programmes after a cost-benefit analysis showed the high cost of the vaccines outstripped any benefits despite vaccine prices tumbling on policy announcement. NZ's age-standardised mortality rate from cervical cancer nearly halved from 4.9/100,000 in 1988 to 2.9/100,000 in 1997 as a result of improvements to the cervical screening programme. With a mortality rate due to cervical cancer 10 times that of NZ at 29.4/100,000; something should be done, urgently, on many fronts. Foremost is a political commitment to an evidence-based programme that requires both cervical screening and HPV vaccination.

Reference: *Sex Health. 2011;8(3):338-42.*

<http://www.publish.csiro.au/index.cfm?paper=SH10083>

Self-reported pregnancy and access to primary health care among sexually experienced New Zealand high school students

Authors: Copland RJ et al

Summary: Using data from 2,620 year 9 through 13 students who participated in the New Zealand Youth'07 Health and Wellbeing survey, these researchers examined the prevalence of self-reported pregnancy and the association between teenage pregnancy and access to primary health care.

Comment: (Dr Fionna Bell) This nationally representative survey confirms the most significant healthcare barriers for young people who experience pregnancy are lack of privacy, clinician-centric sited or timed clinics, and adult-centric access processes. Of concern is the low level of confidential healthcare for young people in general, and the level of repeat pregnancy experience of students who have accessed healthcare with the first pregnancy. The finding of significantly higher self-reported pregnancy in 15-year-olds than in older students is consistent with such students being early school leavers.

The right to privacy is clearly stated in the Hippocratic Oath and the Code of Health and Disability Services Consumer's Rights. The Contraception, Sterilisation, Abortion Amendment Act 1990 states that young people of any age have the right to access sexual healthcare and information with confidentiality assured. Clinicians and their team members should reflect on whether their own values, beliefs, and experiences are influencing the quality of the healthcare offered to young people. Stories of privacy breaches are damaging to community perceptions of quality.

This paper raises concern that waiting room signs advertising "Free sexual healthcare for under 22-year-olds" may also be a barrier to access. Of particular concern is the privacy of Pacific, Māori and Indian young people who often come from lower income larger extended families and wider faith/cultural-based social networks than the majority of their New Zealander peers. Being spotted anywhere along an unaffordable healthcare process runs the risk of being associated with "sex". At a minimum, primary care should offer "Free healthcare for under 18-year-olds", ideally for all under 25-year-olds.

When young people practice risky adult behaviours, the management of an individual's underlying issues will prove more effective than strategies to reduce physical risk alone. For example a young person who is regularly binge drinking and sexual risk taking will modify their own behaviours more permanently when their anxiety disorder is appropriately managed. The HEADSSS assessment provides a comprehensive framework for open questions over a few consultations (remember Church/Marae/Temple). Opportunities offered to listen to young people now, allows the development of trust to establish a more loyal long-term patient-doctor relationship.

This paper points to the need for increased male responsibility for their part in sexual encounters. Every male who uses a condom properly every time, and who checks and disposes of the used condom can be certain he has contained his body fluids and sperm. Yet, less than 82% of New Zealand male secondary students were certain they had never been responsible for a pregnancy. STI events occur more frequently than pregnancy. Consistent with the disproportionate burden of STIs and complications experienced by Pacific young people, Youth'07 has also reported that Pacific students use condoms the least. The myth that Pacific men don't use condoms is a self-fulfilling prophecy and needs to end. NZ STI incidence patterns by gender and age follow the social tendency of older males to couple with younger females. Encouraging young females to assert condom use with an older partner has less chance of success than the powerful influence of a father figure recommending condom use by his sons. When young Pacific males do not receive condom encouragement from men in their lives, male clinicians can step up and be that influential man.

As prevention is better than cure, I challenge primary healthcare clinicians and their teams to increase their clinic's utilisation rates by Māori and Pacific young people – the young people at greatest probability of becoming parents before tertiary study completion and of developing premature morbidity.

Reference: *J Adolesc Health. 2011;49(5):518-24.*

<http://www.jahonline.org/article/S1054-139X%2811%2900118-2/abstract>

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Acculturation status has a modest effect on smoking prevalence among a cohort of Pacific fathers in New Zealand

Authors: Tautolo ES et al

Summary: The study identifies a relationship between acculturation and smoking status within Pacific fathers in New Zealand.

Comment: (Dorothy Clendon) The results of this study reveal that there is a link between acculturation and smoking status amongst Pacific fathers in New Zealand. Specifically, a stronger identification with Pacific culture appears to be a protective factor for smoking; fathers who had greater affiliation with their Pacific culture were less likely to smoke. The findings lead the authors to speculate that the findings support tobacco control strategies that 'maintain, enhance and celebrate' the cultural identity of Pacific fathers.

Pacific people experience the burden of smoking considerably more than most other New Zealanders; approximately 35% of Pacific people smoke, compared with 20% of the general population. Parental smoking negatively impacts children; through exposure to second-hand smoke, and as a key risk factor in the uptake of smoking by young people.

766 Pacific fathers were identified through the Pacific Island Families Study for this research. One year following the birth of their child, the fathers were interviewed using an adaptation of the General Ethnicity Questionnaire to establish their acculturation and smoking status.

Whilst the link between acculturation and smoking status is examined in detail, the study also detects two other significant risk factors for smoking; namely low education status and regular consumption of alcohol.

It is interesting to note that the rate of smoking within both the fathers included in this study and the Pacific population in New Zealand is considerably lower than the apparent rates in Pacific countries themselves. The authors speculate that this reflects both the strength of tobacco control mechanisms in New Zealand, and the tendency for minority and/or emigrant groups to move towards (although remain significantly higher than) the wider trend of the country in which they now live. This finding lends weight to arguments for greater tobacco control within Pacific Island countries.

Length of time in a country and place of birth are often used in research as proxy measures for acculturation. This study showed little relationship between these variables and affiliation to either their Pacific or New Zealand culture, indicating that it may not be appropriate to use these as proxy measures. Whilst the Questionnaire has some limitations, it provides a much more accurate picture of acculturation.

Reference: *Aust N Z J Public Health.* 2011;35(6):509-16.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2011.00774.x/abstract>



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Pharmacological management of children's asthma in general practice: findings from a cross sectional survey in Auckland, New Zealand

Authors: Crengle S et al

Summary: This study investigated whether ethnic differences exist in pharmacological management of children's asthma.

Comment: (Dr Andrew Chan Mow and Dr Debbie Ryan) New Zealand has one of the highest rates of asthma in the world and Pacific children have high rates of hospitalisations for asthma. In 2008, 9% of all Pacific ambulatory sensitive hospital admissions (ASH) were due to asthma, compared with 5% for non-Māori and non-Pacific people.(1)

Although the data for this study was collected 10 years ago, the authors note that this remains the only study to focus on the question of ethnic differences in pharmacological management of asthma in children. Persisting hospitalisation rates and inequalities between ethnic groups suggest the need for further research and a focus on improving the quality of primary care.

A key area requiring improvement in primary care management of asthma is in the use of spacers. This study found that although the use of nebulisers is no longer recommended (except in extreme circumstances), over half of Pacific and Māori caregivers and one-third of European caregivers reported treatment by nebuliser in the previous 12 months. The involvement of nursing staff is critical to lead compliance with recommended guidelines for acute asthma care.

The experience in our practices is that the use of spacers in acute asthma care does help to reduce anxiety in both the child and parents. It also provides an opportunity for a skills update, especially in older children, for whom there can be some stigma associated with the use of spacers, especially when using the device in public or at school.

Other studies confirm the authors' recommendation for the provision of patient self-management education. This can be delivered to individuals or through group sessions. It is also important for primary care practices to review the effectiveness of providing repeated Action Plans.

An important issue for Pacific people that the study does not address is the need for practice staff to assess the health literacy of patients. In our experience, the perception of "asthma wellness" can be variable, for example, the repeated use of a reliever is seen by some parents as well-controlled asthma and may in fact lead to poor adherence to preventer therapy.

The contribution of language and cultural understandings to health literacy is demonstrated by the findings of a recent Tapasefika PHO programme in South Auckland. The programme was successful in reducing hospital admissions for respiratory conditions in children. Factors contributing to the success of this programme included the development of language-specific resources for mothers/caregivers that were simple and easy to follow, early post-discharge visits by a well child nurse able to speak the preferred language of the patient/caregiver, and coordination of care with the child's GP.

This study also does not address the question of after-hours access. An important question is whether children with asthma are being seen by a regular provider or attending after hours clinics when unwell. This is especially important for children with moderate to severe asthma.

Based on the use of inhaled corticosteroids, the study found that children with moderate to severe asthma were probably under-treated in the 12 months prior. There is a need for each practice to have a "severe asthma" register so that high-risk children are identified and followed-up on a regular basis if they have not attended for scheduled reviews. The use of evidence-based guidelines for asthma care has been shown to be effective. This study is a timely reminder in primary care to review our approaches to providing high-quality asthma care.

1. Grey C. Reducing presentations to emergency departments by Pacific peoples: A report prepared for the Ministry of Health. Wellington: unpublished; 2010.

Reference: *N Z Med J.* 2011;124(1346):44-56.

<http://journal.nzma.org.nz/journal/abstract.php?id=4969>

Primary care practices and health professional determinants of immunisation coverage

Authors: Grant CC et al

Summary: These researchers explored primary care factors associated with immunisation coverage.

Comment: (Barbara Vardey) Although the authors of this study admit to several limitations, they identified a number of factors that contribute to the statement "...immunisation coverage is mediocre in New Zealand..."

These include:

- variation in health provision across the primary health care setting;
- quality of knowledge and skills of the health professionals;
- variance in DHB funding and resourcing of immunisation programme delivery;
- social determinants influencing access;
- inadequate immunisation information given to caregivers due to the disconnect between antenatal care and primary care providers;
- delays in enrolling newborns with primary health providers due to poor information transfer systems between midwives and general practice teams;
- health literacy of the health professionals and caregivers;
- inadequate use of systems to monitor immunisations; and
- poor governance structures providing leadership for quality.

This study noted that although New Zealand has a national immunisation schedule, we do not have a national approach to achieving immunisation coverage. It is evident that quality services delivered by primary health providers with good knowledge about immunisation who promote immunisation and understand their communities will achieve good results.

The study found that the confidence of doctors in their knowledge of immunisation was associated with higher coverage. Although the nurses included in the study had completed vaccinator training and were equally confident in their work, this did not have a strong influence on increased immunisation coverage. This is disappointing, as immunisation is seen as an area of focus for nursing staff. Importantly, having a whole of general practice team approach appeared to help achieve good results, regardless of the deprivation level of the population in the practice.

The changes in maternity and obstetrics services in New Zealand since the 1990s appear to have affected the timeliness of immunisation for our children. Inconsistent referral and/or communication between LMCs and general practice teams has created a gap in ensuring there is a health provider involved in the child's care from birth. The introduction of the NIR has helped narrow this gap but not completely close it. The delay in enrolment of a newborn with a practice is noted as a factor contributing to children not being fully immunised.

The introduction of health targets has now driven some of the work to achieve a national target for immunisation of Under 2-year-olds.

This has helped improve coverage for Māori and Pacific children. However, differing funding models used by DHBs affected the available resources to ensure immunisation services were delivered effectively. This appeared to affect capacity in some practices.

The authors assert that social deprivation rather than ethnicity is the dominant determinant of practice immunisation coverage. However, the study also found regional differences in immunisation rates that were not explained by socioeconomic deprivation.

Pacific peoples do experience high rates of socioeconomic deprivation and the debate about the relative importance of culture and ethnicity as determinants of health outcomes is addressed in numerous other studies. Despite the conclusion reached by the authors of this study, immunisation rates for Pacific children in New Zealand are now higher than other ethnic groups, and in some DHBs Pacific immunisation rates for 2-year-olds is 95%. This improvement probably reflects the significant investment some DHB regions have made in immunisation coordination and outreach services. This has made a considerable contribution to quality of education to primary health providers and to midwives and caregivers.

Reference: *J Paediatr Child Health*. 2011;47(8):541-9.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1754.2011.02018.x/abstract>



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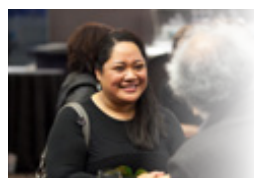
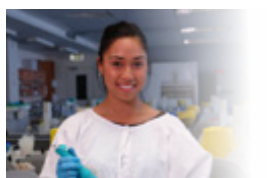


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The influence of social involvement, neighbourhood aesthetics, and community garden participation on fruit and vegetable consumption

Authors: Litt JS et al

Summary: These researchers surveyed 436 residents across 58 block groups in Denver, Colorado, from 2006 to 2007, in a project that explored neighbourhood processes affecting food-related behaviours.

Comment: (Mafi Funaki-Tahifote) This article found that a larger percentage of home and community gardeners consumed the recommended amount of vegetables and fruits per day than non-gardeners. However, after adjusting for socioeconomic status, health, and social and psychological factors, community gardeners consumed almost a serving more of vegetables and fruits each day than did home gardeners and non-gardeners. The findings suggest that community gardening may be one viable way of increasing fruit and vegetable consumption.

This article is very encouraging for our Pacific communities here in New Zealand considering that as Pacific people, we hail from islands that communally farmed our own foods including the growing of our own vegetables and fruits. This is especially pertinent given that over half of Pacific participants at the recent 2008/09 adult national nutrition survey did not meet the recommended guideline of three or more servings of vegetables a day. For fruits, under half met the recommended guideline of two or more servings of fruit per day.

It is very important that Pacific people meet the recommended number of servings for fruit and vegetables per day because there is clear evidence for the protective effect within these foods on ischaemic heart disease, ischaemic stroke, and cancers of the lung, oesophageal, stomach and colorectal cancer. The increase of vegetable and fruit consumption to meet the recommended guideline servings per day would help reduce the high prevalence of these diseases amongst Pacific people. Obesity rates are also high, with Pacific people being over twice as likely to be obese than non-Pacific participants in the 2008/09 adult national nutrition survey. Higher fruits and vegetables intake may substitute for less healthy foods such as energy-dense foods and contribute indirectly to maintaining a healthy body weight.

It was also estimated that in 1997, 'low' vegetable and fruit intake contributed to 1559 deaths (6% of all deaths) in New Zealand. Higher consumption of vegetables and fruits to meet recommended servings per day would save more lives amongst the Pacific communities.

Reference: *Am J Public Health.* 2011;101(8):1466-73.

<http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2010.300111>

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Investigating reasons for ethnic inequalities in breast cancer survival in New Zealand

Authors: McKenzie F et al

Summary: Differential access to healthcare and deprivation account for disparities in breast cancer survival between Pacific and non-Māori non-Pacific women in New Zealand.

Comment: (Dr Ineke Meredith) The authors investigated the role that demographic and tumour characteristics play in explaining breast cancer survival inequalities between Pacific, Māori and non-Māori non-Pacific women in New Zealand. The New Zealand Cancer Registry was used to identify all non-Māori non-Pacific cases of primary breast cancer diagnosed between April 2005 to April 2006. In order to increase the number of Pacific and Māori women, this period was extended to April 2007. Follow-up was to April 2009. 2968 breast cancer cases were diagnosed, 2271 of which were non-Māori non-Pacific, 506 were Māori and 191 were Pacific. The median age at diagnosis was 58.7yr for non-Māori non-Pacific, 53.7yr for Māori and 50.1yr for Pacific women ($p < 0.001$). Māori and Pacific women were more likely to be of low SES and have larger, more aggressive tumours with distal spread. They were also more likely to have HER2-positive tumours. There were 433 deaths recorded in the follow-up period, of which 321 were non-Māori non-Pacific, 76 were Māori and 36 were Pacific women. Non-Māori non-Pacific women had higher survival estimates than Māori and Pacific women across time. Age-adjusted excess mortality hazard ratios compared to non-Māori non-Pacific were 1.76 (95% CI 1.18-2.48) for Māori and 2.49 (95% CI 1.57-3.94) for Pacific women. When further adjusted for deprivation and access to care variables (extent of disease and tumour size), the inequalities were eliminated (HR 1.02, 95% CI 0.69-1.51; HR 0.92, 95% CI 0.55-1.55 for Māori and Pacific respectively).

Despite Pacific women having lower incidence rates for breast cancer than non-Māori non-Pacific women in New Zealand, they have poorer survival. This paper highlights the importance of access to healthcare as a significant contributor to these discrepancies as well as deprivation. Demographic risk factor profiles are pertinent to the latter and include risk factors such as diabetes and obesity.

Reference: *Ethn Health.* 2011;16(6):535-49.

<http://tinyurl.com/breast-cancer-inequalities>