Pacific Health Review

Making Education Easy

Issue 26 – 2019

In this issue:

Abbreviations used in this issue

AF = atrial fibrillation

APSGN = acute post-streptococcal glomerulonephritis

ARF = acute rheumatic fever

CHA$_2$DS$_2$-VASc = Congestive heart failure or left ventricular dysfunction Hypertension, Age ≥75 (doubled), Diabetes, Stroke (doubled)-Vascular disease, Age 65–74, Sex category (female)

MoH = Ministry of Health

NVAF = non-valvular AF

PFBS = publicly-funded bariatric surgery

CONTRIBUTORS TO THIS ISSUE

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Lisa Kitione is a consultant with experience and interest in health policy, research and evaluation for Pacific communities.

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

Welcome back to Pacific Health Review.

New Zealand's response to the tragic events in Christchurch in March have again highlighted that diversity, inclusiveness, equity and social justice are core values of New Zealand's society. These values are in turn reflected through health legislation, strategies and policies focusing on improving health outcomes and inequalities for minority populations, including Pacific people. Despite this, the research and evidence reviewed in this publication continues to demonstrate that more than two decades of implementation of equity policies has not led to the achievement of equity. This is starkly demonstrated in persisting disparities in diabetes rates for Pacific people compared with the total New Zealand population. The Ministry of Health reports that the rate of diabetes in Pacific adults is now 20% compared with 7% for other New Zealanders and Auckland regional data shows diabetes rates of nearly 60% for Pacific people over 65 years of age.

Diabetes specialist Dr Tim Cundy has been researching and writing about diabetes for nearly two decades and his latest publication showing that the problem is now affecting young Pacific adults in growing numbers is concerning. In addition, the research in bariatric surgery shows that access policies and targeted funding are not sufficient responses. Our commentators are questioning why evaluation and performance monitoring with an equity lens are not required.

Pacific child health remains a key issue for all New Zealand society. The publication evaluating the rheumatic fever programme and the research about the B4School Check initiative show the complexity of action required and the need to understand the diversity of groups included in the term Pacific. Pacific people themselves need to be included and indeed at the forefront of finding solutions to problems that have now been described for many years.

Pacific Health Review is privileged to bring you this selection of publications about Pacific health, which provide insights to some of the challenges facing our health sector. Please send us your feedback.

Best wishes.

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Ethnic disparities in rates of publicly funded bariatric surgery in New Zealand (2009–2014)

Authors: Rahiri JL et al.

Summary: These researchers analysed reported Census and hospitalisation discharge data from Statistics NZ and the New Zealand Ministry of Health (MoH) in order to calculate rates of publicly-funded bariatric surgery by self-identified ethnicity amongst morbidly obese individuals who underwent bariatric procedures between June 2009 and July 2014. The respective average numbers of publicly-funded bariatric procedures performed for morbid obesity among Europeans, Māori and Pacific Islanders over the 5-year study period were 3.0, 1.4 and 0.7 per 1,000 patients, respectively.

Comment (Alisa Ili): Bariatric surgery is recommended to reduce excess body weight and is the recognised gold standard treatment for morbid obesity where all other methods (e.g. weight loss diets, exercise programmes) have failed. Publicly funded bariatric surgery (PFBS) has been available in New Zealand since 2007, with an increase in procedures in 2014 due to additional government funding. This research identifies that although funding for bariatric surgery in New Zealand has increased, access remains limited, with disparities between ethnic groups. The average number of PFBS procedures performed per 1,000 morbidly obese patients from June 2009 to July 2014 was for European patients up to 5 times higher than for Pacific patients. The authors identify that the provision of PFBS is dependent on several factors, including adequate funding and resources, primary healthcare provider referral systems, patient and social attitudes to weight loss surgery, and the accessibility of healthcare for patients. However, these findings align with research in New Zealand that consistently shows ethnic disparities in access to and through healthcare services for Pacific and Māori compared with New Zealand European groups, despite Pacific and Māori having much higher rates of preventable diseases.

Further studies are recommended to provide evidence for pathways for the monitoring and ultimately the "*equitable provision of publicly funded bariatric surgery*" for all New Zealanders. This research is a timely reminder of the importance of an equity approach to health services accountability and quality measures. "*We must remember the primary responsibility for protecting and enhancing health equity rests in the first instance with national governments*" (Commission on Social Determinants of Health, 2008).

Reference: ANZ J Surg. 2018;88(5):E366-9

Abstract

Attrition after acceptance onto a publicly funded bariatric surgery program

Authors: Taylor T et al.

Summary: These researchers retrospectively analysed data from 704 New Zealanders referred for and accepted into publicly-funded bariatric surgery from 2007 to 2016. A total of 326 completed surgery successfully; 378 left the progamme before surgery, corresponding to an attrition rate of 54%. Attrition differed significantly by gender (men 66% vs 45% women; p<0.001) and ethnicity (39% in New Zealand Europeans, 50% in Māori, and 73% in Pacific patients; p<0.001). Whereas 2 out of 3 European women proceeded to surgery, <1 in 7 Pacific men did so. Attrition was associated with having a higher mean BMI and being a smoker. Logistic regression analysis revealed a protective effect of employment against attrition for New Zealand Europeans (p<0.004), which was not apparent among Pacific patients.

Comment (Alisa Ili): Access to and through health services and specifically bariatric surgery is an important and under-researched issue in New Zealand. The findings of this research suggest that those most in need of services are least likely to get the care they require. The context for this study is a nationwide survey in 2019 showing patients who received publicly-funded bariatric surgery (PFBS) were predominantly NZ European, with 21% Māori and only 9% Pacific. The significant barriers Pacific people face in accessing health services are already well documented. These include transport, costs of healthcare and patient frustrations caused by discrepancies between their expectation of respect and actual experience of healthcare interaction. The importance of relational practice, for example during the first visit, establishing 'Va' (the sacred space) may be relevant when considering the high attrition rates for Pacific people undergoing PFBS. This also shows that an equity lens for monitoring health service performance and quality requires definitions of access that encompass more than referral to, or first specialist visit measures.

This research highlights important disparities in attrition rates for PFBS for males and Pacific people; however, it does not provide information about what causes these gender and ethnic differences. While the linkages to socioeconomic status are well known, more research about the specific pathways for particular groups is required. For example, while Māori and Pacific people are often grouped together in research and health services performance reporting, the differences between Māori and Pacific people shown in this research point to the need for careful consideration of how and why population groups are defined in different ways. We need future studies to assist with strategies to ensure that all our patients are able to remain in the bariatric surgery programme before and after surgery.

Reference: Obes Surg. 2018;28(8):2500-7
Abstract

Increasing incidence of type 2 diabetes in New Zealand children <15 years of age in a regional-based diabetes service, Auckland, New Zealand

Authors: Sjardin N et al.

Summary: These researchers analysed data from a cohort of 104 New Zealand children (aged <15 years) presenting with type 2 diabetes to a single paediatric diabetes centre in Auckland between 1995 and 2015. The cohort had a BMI standard deviation score of $^{+}$2.3, blood sugar of 15.3 mmol/L, and HbA1c of 76 mmol/mol. At presentation, acanthosis nigricans was found in 90% of the children and 48% were symptomatic. One-third (33%) were Māori, 46% Pacifica, 15% Asian/Middle Eastern and 6% European. Type 2 diabetes incidence increased by 5% each year. The average annual incidence per 100,000 over the entire 21-year period was 1.5 overall, 5.9 in Pacifica and 4.1 in Māori.

Comment (Corina Grey): Type 2 diabetes remains an uncommon diagnosis in children younger than 15 years. Over the 21-year period, 1,185 children were diagnosed with diabetes, most (1,030, 88%) with type 1 diabetes. Of the 104 children with type 2 diabetes, the majority (79%) were Māori or Pacific and/or living in areas considered 'most deprived' (70%). Worryingly, Pacific children had the highest type 2 diabetes incidence rates, and, compared with Asian and Middle Eastern children, the highest annual rate of increase in diabetes over the study period (6% per year).

Diabetes is an important issue for Pacific health. Other analyses have shown that, by the age of 65 years, approximately half of Pacific people have been diagnosed with this condition, which can shorten life expectancy and lead to blindness, amputations and heart disease. We need to invest in public health interventions to improve the affordability of healthy food, increase access to spaces to engage in physical activity and reduce families' exposure to unhealthy food and beverages. Increasing access to routine diabetes checks, diabetic medications and insulin, as well as self-management education and chronic disease care, are vitally important.

Reference: J Paediatr Child Health. 2018;54(9):1005-10
Abstract

Ethnic disparities in breast cancer survival in New Zealand: which factors contribute?

Authors: Tin Tin S et al.

Summary: This analysis included 13,657 New Zealand women diagnosed with primary invasive breast cancer between January 2000 and June 2014; 1,281 (9.4%) were Māori and 897 (6.6%) were Pacifica. Māori and Pacific women were younger than other ethnic groups, more likely to reside in deprived neighbourhoods and to have comorbidities, less likely to be diagnosed through screening and have early-stage cancer, less likely to be treated in a private care facility, to receive timely cancer treatment, and to receive breast-conserving surgery. In Cox regression analyses, Māori and Pacific women were at greater risk than women of other ethnicities of excess mortality from breast cancer (age and year of diagnosis adjusted HRs: 1.76; 95% CI, 1.51 to 2.04 for Māori and 1.97; 95% CI, 1.67 to 2.32 for Pacifica), the majority of which (75% and 99%, respectively) were due to baseline differences. Key contributors to ethnic disparities in breast cancer survival were late disease stage at diagnosis (this was the most important contributor), neighbourhood deprivation, mode of diagnosis, type of health care facility where primary cancer treatment was undertaken and type of loco-regional therapy.

Comment (Corina Grey): Consistent with previous reports, this important study found that Māori and Pacific women had higher mortality following a breast cancer diagnosis, and later stage at diagnosis accounted for a substantial proportion of this survival differential compared to non-Māori/non-Pacific women. While breast screening rates for Pacific women have improved over time, now exceeding the coverage target of 70%, there is still a lot of room for improvement.

In this study, Māori and Pacific women had significantly longer delays in time to first treatment for breast cancer (median time 33–34 days, compared to 23 days for non-Māori/non-Pacific women). The main component of this delay was time to initial diagnosis rather than delay to the start of treatment, and this was shown to contribute to poorer outcomes for Māori and Pacific women. Māori and Pacific women (16% each) were also significantly less likely to access private care for their primary treatment for breast cancer than other women (47%). Previous research has linked private care with earlier diagnoses, better treatments and higher survival from breast cancer, and in this analysis, differential access to private care accounted for 10% of the survival disparities in Pacific women.

New Zealand prides itself in having universal access to healthcare and therefore, if we are serious about achieving equity of outcomes for all groups, we need to ensure that women are able to access primary and secondary care services in a timely manner, regardless of financial capacity. 'Deprivation' cannot be viewed as an acceptable reason for differences in health outcomes.

Reference: BMC Cancer. 2018;18(1):58
Abstract

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Post-streptococcal glomerulonephritis: some reduction in a disease of disparities

Authors: Vogel AM et al.

Summary: This New Zealand study assessed trends in hospital admissions for acute post-streptococcal glomerulonephritis (APSGN) in children living in Auckland from 2007 through 2015. A total of 430 cases of APSGN were identified throughout Auckland (337 definite and 93 probable), with a mean annual incidence of 15.2 per 100,000. The incidence in children aged 0–14 years was 17 times higher in Pacific peoples and almost 7 times higher in Māori than it was in European/other populations (50.2 vs 19.6 vs 2.9 per 100,000, respectively). Multivariate analysis found ethnicity, deprivation, male gender, age (peak 3–8 years) and season (summer/autumn) were significantly associated with admission risk. Rates trended downward from 2007 to 2015.

Comment (Corina Grey): This study reports both good news and bad news. The good news: in Auckland, rates of APSGN appear to be declining at a rate of 9% per year. The bad news: in the authors' own words, 'deeply disturbing' inequities in disease rates, with Pacific children once again having the highest rates (17 times higher than non- Māori non-Pacific children), attributed in part to socioeconomic factors.

APSGN is thought to be the result of an immune complex-related process brought on by a Group A streptococcal infection (usually pharyngitis or impetigo). The short-term prognosis for children with APSGN is excellent, but long-term follow-up has identified persistent urinary abnormalities (proteinuria and/or microhaematuria), which are markers of evolving or underlying renal disease. Studies have shown that Māori and Pacific children are more likely to have renal consequences following APSGN. The authors postulated that the declining rates of APSGN observed over the study period (2006–2015) may be attributed, at least in part, to initiatives providing earlier and more accessible community treatment of streptococcal infection – for example, school-based primary care clinics in South Auckland. These initiatives are a great way of increasing access to healthcare, but need to be supported by wider initiatives to address poor quality housing and overcrowding, which is all too common in New Zealand.

Reference: J Paediatr Child Health. 2018 Oct 12. [Epub ahead of print]

Abstract

Burden of atrial fibrillation in Māori and Pacific people in New Zealand: a cohort study

Authors: Gu Y et al.

Summary: This study examined the burden of AF in a primary care population in New Zealand. Electronic medical records for 135,840 adults (including 19,918 Māori and 43,634 Pacific people) enrolled at 37 general practices were analysed for AF diagnosis and associated medication prescription information. The overall prevalence of non-valvular AF (NVAF) was 1.3%, and increased with age (4.4% in people aged $\geq$55 years). Māori aged $\geq$55 years were more likely to be diagnosed with NVAF than Pacific and non-Māori/non-Pacific people (7.3% vs 4.0% and 4.1%, $p<0.001$). Māori and Pacific NVAF patients were diagnosed with AF approximately 10 years earlier than non-Māori/non-Pacific patients. Overall, 67% of NVAF patients were at high risk for stroke (CHA$_2$DS$_2$-VASc $\geq$2) at the time of AF diagnosis. 48% of Māori and Pacific NVAF patients aged <65 years were at high risk for stroke, compared with 22% of non-Māori/non-Pacific patients ($p<0.001$). Adherence to AF medication was suboptimal in NVAF patients at high risk for stroke or with stroke history, irrespective of ethnic group.

Comment (Ron Manulevu): Pacific peoples aged $\geq$55 years had an intermediate prevalence of NVAF diagnosis (4.1%) compared to Māori (7.3%) and non-Māori/non-Pacific people (4.0%) ($p<0.001$). NVAF diagnosis was made 10 years earlier in Pacifica (61 years) and Māori (60 years) compared with non-Māori/non-Pacific people (71 years). Pacific patients aged <65 years when diagnosed with NVAF were at high stroke risk (43%) compared with non-Māori/non-Pacific people (22%). Across all Pacific age groups, 62% had a CHA$_2$DS$_2$-VASc $\geq$2 on diagnosis of NVAF. There was poor adherence with stroke medications across the entire study and 77/292 high-risk Pacific patients suffered $\geq$1 stroke event during the EMR data extraction. Disappointingly, the study also identified underutilisation of stroke medications for Pacific peoples. Given the ethnic disparities clearly evident, this study provides a basis for urgent AF screening targeting Pacific people aged $\geq$55 years. There should also be a focus on improving prescribing (clinician) and adherence (patient) patterns with respect to stroke medications.

Reference: Intern Med J. 2018;48(3):301-9

Abstract

Multimorbidity in Māori and Pacific patients: cross-sectional study in a Dunedin general practice

Authors: Stokes T et al.

Summary: These researchers obtained the electronic medical records for a random sample of Māori and Pacific patients aged $\geq$35 years enrolled with a large urban Dunedin general practice and analysed the data for the number and type of morbidities, as well as the prevalence of multimorbidity and polypharmacy in relation to age, sex and socioeconomic deprivation. Multimorbidity affected approximately half (52.5%) of Māori and 64.3% of Pacific patients; 22.8% and 10.0% of patients, respectively, had physical and mental health comorbidities. Polypharmacy was much more common among Pacific than Māori patients (32.9% vs 13.6%). In both groups, multimorbidity increased with age and with increasing levels of socioeconomic deprivation. Across both groups, the 8 most prevalent chronic conditions were obesity, anxiety or depression, hypertension, asthma or chronic obstructive pulmonary disease, gout, diabetes, CVD and osteoarthritis.

Comment (Ron Manulevu): This study identified that 64.3% of Pacific patients had multimorbidity (95% CI, 51.9 to 75.4); 32.9% (95% CI, 22.1 to 45.1) of Pacific patients had polypharmacy; and 10% (95% CI, 4.1 to 19.5) of Pacific patients had physical and mental health comorbidity. Pacific statistics were higher for multimorbidity and polypharmacy, respectively, compared with Māori. The prevalence of multimorbidity in Pacific and Māori increased with age and increasing deprivation. Eight prevalent chronic conditions for Maori and Pacific peoples were identified and are consistent with recent literature. Although the study has its limitations (small sample size [wide CI], omission of a New Zealand European comparison group and non-representative enrolment data for Māori and Pacific) in terms of national application, it does lay a foundation for a move towards a multimorbidity focus. Information that would be useful include: patient understanding of their medications; and, adverse effects of polypharmacy in the study group.

Reference: J Prim Health Care. 2018;10(1):39-43

Abstract

Type 2 diabetes in young adults in central Auckland – demography and complications

Authors: Beig J et al.

Summary: This analysis of data from 310 young adults (aged <45 years) with type 2 diabetes registered with the Auckland Diabetes Centre in 2015 examined demographic, anthropometric and metabolic variables, as well as the prevalence and emergence of complications. Almost four-fifths (78%) of the cohort consisted of 3 demographic groups: 44% of the cohort were migrants of Asian or Pacific Island origin and had been diagnosed with type 2 diabetes at a mean age of 28 years, a median 9 years after migration; 29% were New Zealand-born Pacifica with a high prevalence of morbid obesity and 12% were diagnosed with major mental illness or intellectual disability. The median HbA1c was 80 mmol/mol at diagnosis; nearly one-third (28%) had a median HbA1c of ≥100 mmol/mol. At a median 6 years after diagnosis, over half (56%) of the cohort had some degree of retinopathy; the likelihood increased with the duration of diabetes and glycaemic control (p=0.001). Nearly half (44%) of the cohort had abnormal albuminuria at diagnosis; 12% had macroalbuminuria. A significant association was observed between increased albuminuria and obesity (p=0.002). Advanced CKD (stage 4–5) was significantly associated with retinopathy severity and degree of albuminuria at diagnosis (p=0.0001). Major CV events were associated with the severity of retinopathy at diagnosis (p=0.0001).

Comment (Ron Manulevu): Worldwide, there is a trend towards earlier age of onset and an increase in the prevalence of type 2 diabetes (Fazelli et al., 2013; Hotu et al., 2004). The authors of this study conclude that "*new migrants, New Zealand-born Pāsifika and patients with mental illness or an intellectual disability compromise the bulk of young onset T2D*". By age 40, these patients often exhibit advanced complications of type 2 diabetes, in particular, retinopathy; renal complications; microvascular and CVD complications. We regularly see obesity in our young Pacific people as a stepping stone to the development of type 2 diabetes. The linked stressors of migration, social obligations and deprivation further compound issues for Pacific young people. Furthermore, the metabolic effects of atypical antipsychotics add another dimension. Earlier retinopathy and albumin checks for young Pacific peoples at increased risk of type 2 diabetes were discussed in the study. This would provide the best chance of identifying patients early and reducing the advancement of type 2 diabetes-related complications.

Reference: Intern Med J. 2018;48(1):67-73
Abstract

Primary prevention of rheumatic fever in the 21st century: evaluation of a national programme

Authors: Jack SJ et al.

Summary: In 2011, the New Zealand Government launched a multi-faceted primary prevention intervention, the Rheumatic Fever Prevention Programme (RFPP), which includes several components. These researchers evaluated the impact of the school-based sore throat service; this component aims to prevent acute rheumatic fever (ARF) through timely detection and treatment of Group A pharyngitis. The analysis obtained first-episode ARF hospitalisations before (2009–11) and after (2012–16) implementation of the RFPP. A retrospective cohort study estimated the effectiveness of the school-based sore throat service in reducing the incidence of ARF by comparing first-episode ARF incidence during time-exposed (calculated as the total number of days that the service was operating for each school; 68,465,350 person-days) and time-not-exposed (calculated by subtracting total time exposed from the total duration of the service; 23,093,207 person-days) to the school service among children aged 5–12 years from 2012 to 2016. Following implementation of the RFPP, the national ARF incidence rate of first-episode ARF hospitalisations declined by 28% from 4.0 per 100,000 at baseline (2009–2011) to 2.9 per 100,000 by 2016 (p<0.01). The school-based sore throat service effectiveness overall was 23% (rate ratio [RR] 0.77; 95% CI, 0.56 to 1.06) and 46% in one high-risk region with high coverage (0.54; 0.34 to 0.84).

Comment (Lisa Kitione): This evaluation highlights the ongoing complexity of unpacking the rheumatic fever (RhF) burden experienced by Māori and Pacific children and their families. Even without presenting Pacific-specific data, rising national incidence of RhF rates in recent years clearly illustrates the persistence of the disease and the precariousness of inroads made to prevent it within our most at-risk communities. The researchers point to limitations in the evidence underpinning the RFPP (e.g. the effectiveness of oral antibiotics) that raises questions about the quality of our policy responses for vulnerable Pacific kids and families. As evaluation of this multifaceted public health intervention continues, the learning opportunities it presents should be optimised. As well as extracting lessons from success stories, like the well-run school-based programme in Counties Manukau, there is potential to improve the way we make policy, use evidence, and design research and evaluation in relation to our most vulnerable Pacific families.

Reference: Int J Epidemiol. 2018;47(5):1585-93
Abstract

Patterns of early primary school-based literacy interventions among Pacific children from a nationwide health screening programme of 4 year olds

Authors: Schluter PJ et al.

Summary: This investigation explored the feasibility of using the current national health screening programme of preschool children as an early detection tool for identifying Pacific children with the greatest literacy needs. The study researchers used time-to-event analyses of literacy intervention data for Pacific children born between 2005 and 2011. The study included 59,760 Pacific children, 6,861 (11.5%) of whom received at least one literacy intervention. A multivariate Cox proportional hazards analysis identified that Tongan (HR 1.33; 95% CI, 1.23 to 1.45) and Cook Island Māori (1.33; 1.21 to 1.47) children were more likely to receive an intervention than Samoan children; children identifying with both Pacific and non-Pacific ethnicities were less likely. The study researchers acknowledge that their multivariable model lacked reasonable predictive power (Harrell's *c*-statistic 0.592; 95% CI, 0.583 to 0.602), but they point out that it nevertheless identified important Pacific subpopulations who would benefit from targeted literacy intervention or policy implementation.

Comment: This study, linking two major interagency databases, is an all-too-rare example of the rich, nuanced and multilayered findings that are possible when researchers have access to a large and diverse Pacific sample. In this case, B4 School Check data from the MoH and literacy intervention data from the Ministry of Education highlight the heterogeneity of Pacific ethnicities, multiple ethnic identities and complexity of need in a sample of children that would otherwise fall within a 'single Pacific banner'.

Finding large differences between Pacific ethnic groups in the likelihood of receiving a literacy intervention, the researchers traverse a wide body of literature to examine what may underpin those differences, whether historical, cultural, systemic or otherwise. Drawing out the interdependence of health, wellbeing and educational outcomes, the study illustrates the dimensions and detail needed for appropriately targeted and timely policy responses for Pacific families with greatest need.

Reference: Sci Rep. 2018;8:12368
Abstract

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