International Benchmarking of Asian Health Outcomes for Waitemata and Auckland DHBs

January, 2017

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AUCKLAND DISTRICT HEALTH BOARD
Te Toka Tumai

Waitemata District Health Board
Best Care for Everyone

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Published in January 2017 by Waitemata District Health Board, Private Bag 93503, Takapuna, Auckland 0740, New Zealand.

ISBN 978-0-473-38636-8 (Paperback)
ISBN 978-0-473-38637-5 (PDF)

Suggested Citation: Zhou L and Bennett S, International Benchmarking of Asian Health Outcomes for Waitemata DHB and Auckland DHB. Auckland: Waitemata District Health Board, 2017.

Foreword

Auckland's population is growing and changing incredibly rapidly. The cultural and ethnic diversity of our people has enriched our city in a myriad of ways, creating a working and living environment unlike any other in New Zealand. We have more than 180 different ethnicities living in the city, and almost 40% of Aucklanders were not born in New Zealand.

In the last 15 years the greatest increase of any ethnic group has been in those of Asian origin, principally from China, India, Korea and more recently the Philippines. In 1991, 5.5% of Auckland's population identified themselves as Asian. By 2001 this had risen to 14% and in 2016 it has reached 25%.

The overall health outcomes achieved by our Asian populations are very good. This report highlights that the two DHBs are national and international leaders in Asian health with Asian peoples experiencing excellent health outcomes and health status compared to the rest of the population and when benchmarked internationally. Our Asian peoples enjoy very high life expectancy at birth, lower rates of infant mortality and lower mortality from cardiovascular disease, diabetes and cancer when compared to other population groups.

Importantly, migrants are less likely to experience barriers to social integration in New Zealand. Our Asian population score very highly in terms of personal rights, personal freedom and choice, tolerance and inclusion. The Asian population in both DHBs have attained high levels of educational achievement with the proportion of the population having a bachelor degree/level 7 qualification or above, higher than the New Zealand average.

Our challenge is to maintain these outstanding results and to address those areas where issues are emerging particularly for some Asian sub groups. While many Asian migrants enjoy good health, we need to be mindful that the 'healthy migrant effect' will diminish over time and the rapidly growing population will create unique challenges for maximising health outcomes into the future.

This report identifies specific points of focus and outlines some recommendations that will help us maintain world class health status for our Asian population. These include the future burden of lifestyle-associated risk factors such as smoking and obesity, and the ability of the Asian population to get information on the health & disability system, and access and utilise culturally appropriate health services in a timely manner.

We are highly committed to achieving and maintaining equitable health outcomes for the multiple, varied population groups in Auckland and look forward to working with our many partners who are passionate about Asian health and wellbeing in this city.

Dr Dale Bramley,

Chief Executive Officer

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Acknowledgements

This document was written by the joint Planning, Funding and Outcomes Unit of Auckland and Waitemata District Health Boards under the leadership of Simon Bowen and Dr Debbie Holdsworth. The editor was Wendy Bennett (Manager, Planning and Health Intelligence).

The authors would like to thank all of the people who have contributed in different ways to the completion of this report.

The following people in particular deserve special mention for their support and assistance:

Dr Dale Bramley, CEO, Waitemata District Health Board

Dr Mazin Ghafel, Public Health Physician, Auckland and Waitemata District Health Boards

Simon Bowen, Director Health Outcomes, Auckland and Waitemata District Health Boards

Cherie McLean, Australian Institute of Health and Welfare, Australia

Michael Walsh, Epidemiologist, Auckland and Waitemata District Health Boards

Lily Yang, Planning Support, Auckland and Waitemata District Health Boards

Cleo Neville, Planning and Accountability Analyst, Auckland and Waitemata District Health Boards

G. Raj Singh, Project Manager, Auckland and Waitemata District Health Boards

Zhan Ye Chen, medical student, University of Auckland

List of Abbreviations

ARR	Annualised Rate of Reduction
ATEED	Auckland Tourism, Events and Economic Development
AUT	Auckland University of Technology
BMI	Body Mass Index
CALD	Culturally and Linguistically Diverse
CBD	Central Business District
CHAG	CALD Health Reference Group
CI	Confidence Interval
CME	Continuing Medical Education
CNE	Continuing Nursing Education
CVD	Cardiovascular Disease
DAA	Direct acting-antivirals
DALYs	Disability-adjusted Life Years
DHB	District Health Board
ECHO	Ending Childhood Obesity
ED	Emergency Department
GBD	Global Burden of Disease
GP	General Practitioner
HNA	Health Needs Assessment
HoP	Health of Older People
ICD	International Classification of Disease
IGME	Inter-agency Group for Child Mortality Estimation
IHME	Institute for Health Metrics and Evaluation
INFoRM	Inter-Agency Network for Refugees and Migrants
INZ	Immigration New Zealand
MDG 5	The Fifth Millennium Development Goal
MELAA	Middle Eastern, Latin American and African
MIPEX	Migrant Integration Policy Index
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
MOPS	Maintenance of Professional Standards
NGO	Non-Government Organisation
NHS	National Health System
NRRS	National Refugee Resettlement Strategy
NSW	New South Wales
NZ	New Zealand
NZHS	New Zealand Health Survey
OECD	Organisation for Economic Co-operation and Development
OR	Odds Ratio
PBU	Primary Birthing Unit
PHO	Primary Health Organisation
PTE	Private Training Establishment
RSSG	Regional Settlement Steering Group
SDGs	Sustainable Development Goals
SRR	Standardised (mortality) Rate Ratio
TANI	The Asian Network Inc.
UI	Uncertainty Interval
UK	United Kingdom
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UoA	University of Auckland
US	United States of America
WHO	World Health Organisation
YLD	Years Lived with Disability
YLL	Years of Life Lost

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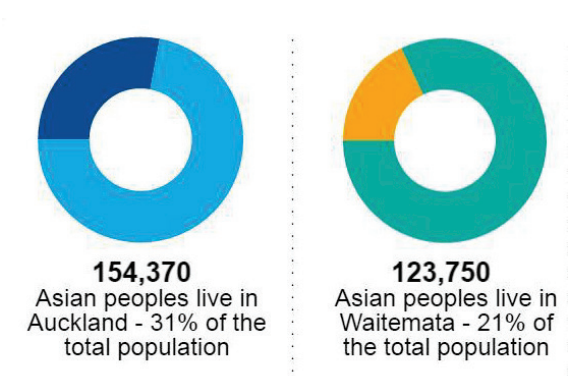
Executive summary

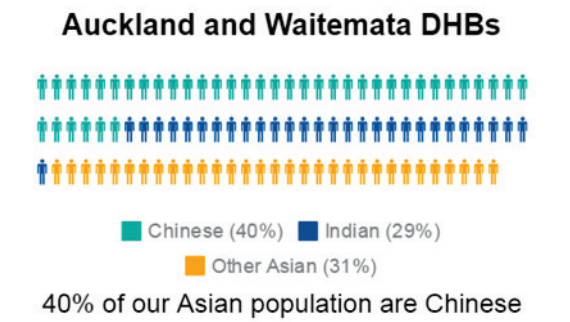
This benchmarking report has been developed to profile and assess the health of Waitemata and Auckland districts' Asian population in an international context – considering their health status against our high level outcomes to maximise life expectancy and reduce inequalities in health outcomes. It is important to note that the Asian population is made up of many individual population groups and each of these groups has differing and specific health needs. Where possible, these differences are explored further in this report. The report has been developed alongside a supplementary Asian Health Benchmarking Technical Report.

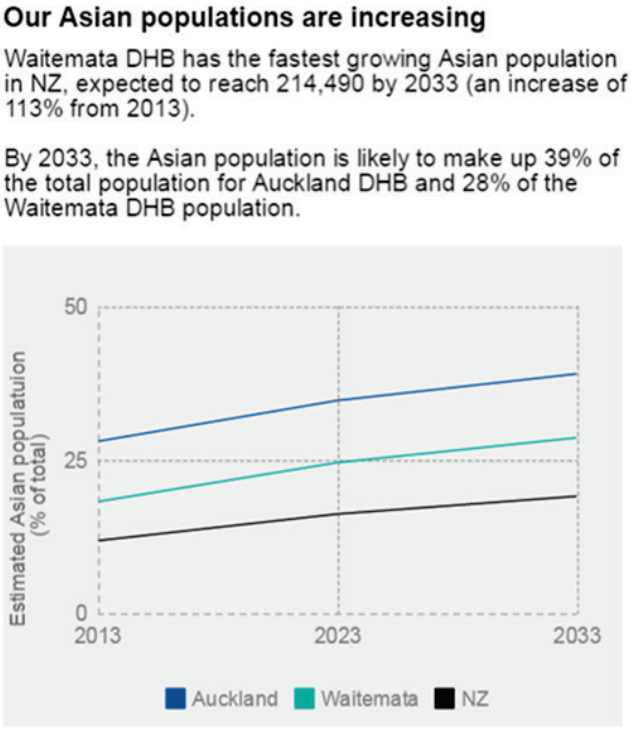
Population profile

New Zealand, and particularly the Auckland region, are becoming more diverse in ethnicity and culture. The 2013 census estimated that there are 127,980 (28% of the total) Asians residing in Auckland District Health Board (DHB) and 100,550 (18% of the total) in the Waitemata DHB. When compared nationally, Waitemata and Auckland DHBs have higher proportions of their population identifying as Asian (Asians accounted for 12% of the total nationwide).

By 2033, the Asian population will likely make up between 28% to 39% of the total population for Waitemata and Auckland DHBs. Nationwide, Asian populations are growing the fastest and will account for 19% (slightly more than 1 million in size) of the total by 2033. New immigrants make up a large proportion of the New Zealand Asian population. In the Auckland region, approximately 78% of the Asian population were born overseas, and nearly half of this overseas-born population are new settlers who have been residing in New Zealand for less than 10 years. This high volume of migrants creates unique challenges for maximising health outcomes.







Overall, the findings of this report highlight that the two DHBs are national and international leaders in Asian health with Asian peoples experiencing excellent health outcomes and health status compared to the rest of the population and when benchmarked internationally. This includes high life expectancy at birth, lower rates of infant mortality, lowest rate of years of life lost (YLLs) from cardiovascular disease (CVD) and lowest rate of YLLs from cancer[1]. The impact from diabetes for both DHBs was also low when considered internationally. These results are consistent with the well-established phenomenon of the 'healthy migrant effect' (Appendix 1).

The report also identifies that migrants in New Zealand experience the most equitable entitlement (Migrant Integration Policy Index report 2014) when compared to the comparator countries[2]. Asian peoples in both DHBs are highly educated with the proportion of the population having a bachelor degree/level 7 qualification or above higher than the New Zealand average.

Health Outcomes		
Life expectancy	• Both DHBs experience a higher life expectancy at birth (90 years, Waitemata; 89 years, Auckland; 92.9 years for Chinese in Waitemata) when compared to the comparator countries and to the Asian population of New Zealand.	
Cardiovascular diseases	• Both DHBs had the lowest rate of years of life lost (per 100, 000 population) from cardiovascular disease (Waitemata women 897, men 1,147; Auckland women 894, men 1,617).	
Cancer	• Both DHBs had among the lowest rates of years of life lost from cancer (Waitemata women 1,330, men 2,265; Auckland women 1,633, men 2,020).	
Mental health	• Both DHBs had lower overall years of life lost from Alzheimer's disease and other dementias than the total population of New Zealand (Waitemata women 118 per 100,000, men 129 per 100,000; Auckland 103 per 100,000, for both women and men).	
Diabetes	• Both DHBs had among the lowest rates of years of life lost from diabetes (Waitemata women 154, men 204; Auckland women 174, men 212).	
Infant health	• Both DHBs had a combined infant mortality rate which was amongst the lowest (2.2 per 1,000 live births).	
Risk Factors & Prevention		
Tobacco smoking	• Both DHBs had slightly lower smoking prevalence among the Asian population (9.9%, Waitemata; 8.8%, Auckland) than the New Zealand average (19%) (New Zealand Healthy survey) • The prevalence in Chinese men is among the highest in the Asian sub-groups (15.2%, Waitemata; 13.8%, Auckland) and higher than that of the European/Other population • There is a large inequality in smoking prevalence between sexes,	

[1] In this document we have used the term 'cancer' to refer to all neoplasms that may be benign (not cancer), or malignant (cancer)

[2] These are: Australia, being a neighbouring country of New Zealand and with a high immigrant population; Canada, the UK and Singapore who all have high immigrant populations and China, Korea and India where the highest volumes of Asian immigrants originate from.

	with Asian males having a smoking prevalence five to seven times higher than females.	
Obesity	• The rates of obesity in both DHBs (14.1%, Waitemata; 11.6%, Auckland) are lower than New Zealand as a whole • The DHBs' obesity rates are higher than many of the comparative Asian countries • New Zealand had the highest all-cause mortality rate (60.8 per 100,000 population) attributable to high Body Mass Index (BMI).	
Physical activity	• Both DHBs had a lower prevalence for adults meeting the New Zealand guidelines for physical activity (30.5%, Waitemata; 45.2%, Auckland) than the New Zealand average (54.0%) • Both DHBs had the lowest prevalence of sufficient physical activity when compared to the comparator countries.	
Health service use	**Immunisation** • Both 8-month and 2 year old immunisation rates are above the 95% coverage target. Rates are similar to the best performing comparator country (China). **Cancer screening** • The cervical screening coverage rates for Asian women of both DHBs (66.3%, Waitemata; 66.0%, Auckland) were lower that the New Zealand average (76.7%) • Asian breast screening rate was lower in Waitemata (66.3%) than the New Zealand average (71.4%) and lower when compared to the comparator countries. **Health service utilisation** • Asian adults in New Zealand were less likely to have a usual health practitioner or service to visit when unwell (<90%) than other ethnicities • Primary Health Organisation (PHO) enrolment rates among the Asian population remain well below that of other ethnicities of both DHBs (82%, Waitemata; 74%, Auckland).	
Social Progress		
Social progress index & opportunity	• Higher proportions of Asian peoples aged 25+ years in both DHBs had a bachelor degree/level 7 qualification or above than the New Zealand average (22.3%) • New Zealand had the highest overall social progress index score (87.1) among the comparator countries (2015) • Migrants in New Zealand experience the most equitable entitlement (Migrant Integration Policy Index report 2014) when compared to the comparator countries.	

Comparison of health indicators between Waitemata, Auckland, New Zealand and comparator country best

Summary of key highlights comparing DHBs' Asian population with comparator countries (Appendix 2 and the supplementary Technical Report).

Table 1 Comparison of health outcomes between Waitemata, Auckland, New Zealand and comparator country best

		Waitemata Asian	Auckland Asian	New Zealand	Comparator country Best	
Life expectancy (years)	Overall	90	89	82#	83# (Singapore)	
Cardiovascular disease (YLL per 100,000 population)	Female	897	894	1,691*	1,326* (Australia)	
	Male	1,147	1,617	2,991*	2,301* (Australia)	
Cancer (YLL per 100,000 population)	Female	1,330	1,633	2,803*	1,907* (India	
	Male	2,265	2,020	3,406*	2,129* (India)	
Diabetes (YLL per 100,000 population)	Female	154	174	137*	71* (UK)	
	Male	204	212	233*	106* (UK)	
Alzheimer's & other dementia (YLL per 100,000 population)	Female	118	103	283*	30* (Singapore)	
	Male	129	103	305*	41* (Singapore)	
Intentional Injuries (YLL per 100,000 population)	Female	120	208	302*	151* (the UK)	
	Male	401	264	908*	467* (China)	
Maternal and infant health	Low birth weight rate	6.5%	8.3%	5.7%$	2.4%$ (China)	
	Infant mortality	2.2 per 1,000 live births		5$	2.0$ (Singapore)	
Smoking	Current smoking rate	9.9%	8.8%	17.6%#	12.4%# (India)	
Obesity	High BMI rate	14.1%	11.6%	29.2%#	4.9%# (India)	
Physical activity	Physical activity rate	30.5%	45.2%	60.2%#	86.6%#	
Immunisation	Coverage rate (8 months)	98%	97%	92.7%	-	

*Global Burden of Disease Study 2010; # Estimates by World Health Organisation; $ Estimates by World Bank or the UN

Overall the health outcomes of the Waitemata and Auckland DHBs' Asian population - when compared to New Zealand and overseas - are very good and in many areas Asian health status within the two DHBs would make us an international leader in achieving excellent health outcomes. However, the results of the benchmarking process have identified emerging areas to monitor. These include the future burden of lifestyle-associated risk factors such as smoking and obesity, and the ability of the Asian population to access and utilise culturally appropriate health services. This is significant as these have the potential to impact on the future health needs and demand for services for segments of the Asian population. Overseas evidence suggests that the 'healthy migrant effect' wanes among migrants with additional years in the new 'host' country (Singh, 2006) (Arcia et al., 2001) (Singh, Kogan & Yu, 2009). Our focus should be on action now, protecting and sustaining the excellent health outcomes that the Asian population experience.

Patient experience and community engagement/participation

Enhanced patient experience is a strategic priority and long-term outcome for the DHBs with the intent to engage patients and communities in the care they receive. Improving experiences of health care services is an important indicator in assessing the quality of the care we provide and is strongly linked to overall health outcomes.

Patient experience of care	
Values	The top four values Asians placed on their experiences and expectations of Auckland DHB health services were: 1. Excellence and professionalism 2. A professional connection with clinicians 3. Confidence about the level of care 4. Efficiency, productivity, and good processes.
Experience of healthcare services	• Asian patients of Auckland DHB are less likely to rate their overall care and treatment as 'very good to excellent' (81%), compared to non-Asians (NZ European 84%, Māori 84% and Pacific 84%) • 58.7% of Chinese patients of Waitemata DHB were 'extremely likely' to 'recommend our ward to friends and family if they need similar care or treatment', compared to non-Asians (NZ European 70%, Māori 69.2%, Samoan 65.2% and Tongan 58.8%).
Access to healthcare services	• Chinese of Auckland DHB Local Boards were more likely to rate their access to health care as 'low', compared to New Zealand Europeans • Factors attributing to a 'low' self-rating relate to 'cost' of services and quality issues such as 'availability/waiting times' at general practice.
International students	International students tended to: • have a lower level of understanding of New Zealand health and disability systems • be less likely to have a family doctor or General Practitioner (GP) clinic to go to • have accessed Emergency Departments (ED) at public hospitals significantly less, after adjusting for the effects of ethnicity.

Overall, Asian patients had the greatest tendency to rate their overall care/treatment or recommend similar care/treatment lower as compared to other ethnic groups across the two DHBs. This may be attributed to the high values they place on receiving timely access to care, how services address language and cultural barriers, and the provision of high quality, professional culturally appropriate treatment. Engagement with key segments of the population i.e. students across the localities such as the Auckland CBD or at a Local Board level are key to understanding the attitudes, experiences, barriers and enablers to uptake of health services, and can guide future opportunities for targeted community engagement/participation and co-design work with Asian ethnic consumers.

Where to next?

The overall findings within this report show that the Asian populations of Waitemata and Auckland DHBs experience excellent health outcomes and health status compared to the rest of the New Zealand population and when benchmarked internationally. If we are to maintain or improve Asian health status we must address the disparities within Asian 'high-risk' subgroups associated with access to, and utilisation of health and disability services for newcomers, distribution of health determinants and risk factors, and a diminishing protective 'healthy migrant effect'. Disparities highlighted in this report include a greater risk of CVD for our South Asian population, and the higher Chinese risk of diabetes, youth mental health and childhood obesity.

The next steps will include progressing a set of recommendations to maintain, improve or accelerate (if possible) health status where there are variations in health outcomes with an overarching focus on the following areas:

Areas for focus

The key recommendations focus on the need to maintain and further improve the health outcomes our Asian populations already experience. Key areas for focus include:

Maintain health status

Health Outcomes

- Continue to monitor and maintain where health outcomes are excellent, such as life expectancy and lower mortality rates from CVD and cancer.

Children get the best possible start in life

- Increase the proportion of Asian newborn infants enrolled with a PHO and other health services by three months of age.

Monitoring Asian & migrant health

- Granular data monitoring to level 4 at a national level as part of a systems solution
- Monitor separately the health of South Asian, Chinese and Other Asian populations in national and regional surveys.

Policy & legal frameworks

- Ensure alignment of efforts to national strategies:
  - New Zealand Health Strategy: Future direction
  - New Zealand Migrant Settlement and Integration Strategy's - Outcome 5: Health & Wellbeing
  - New Zealand International Student Wellbeing Strategy Outcomes Framework - Outcome 3: Health & Wellbeing
  - New Zealand Refugee Resettlement Strategy - Health & Wellbeing Outcome.

Networks & partnerships

- Asian consumer voices are included in service co-design planning cycles.

Improve or accelerate health status

Asian & migrant sensitive health systems

- Increase Asian PHO enrolment rates, with the commensurate benefits of seeing one regular family doctor (GP)
- Support the People Strategy (Auckland DHB) to increase promotion of the culturally and linguistically diverse (CALD) cultural competency courses.

Reduce premature mortality from cardiovascular disease

The lowest premature mortality from cancer

- Increase culturally appropriate messaging to South Asian and other targeted ethnic groups about CVD and diabetes risk assessments and healthy lifestyle behaviours.

Achieve a smokefree Waitemata and Auckland by 2025 (<5%)

- Promote culturally appropriate smokefree information and messages to male Chinese and Other Asian communities to achieve the Smokefree Aotearoa 2025 goal.

Reduce childhood obesity

- Work in partnership with Healthy Families Waitakere, the Healthy Babies Healthy Futures

(HBHF) programme and other partners.

Children get the best possible start in life

- Promote awareness of the prevalence of measles and uptake of the 4-year immunisations in Asian communities.

Reduce morbidity and mortality for people with mental illness

- Work with Asian Mental Health Services (Auckland and Waitemata DHBs) to provide culturally appropriate support for Asian clients and their families.

Older people experience independence and quality of life

- Progress the roll out of the Cognitive Impairment Pathway and support the review of Day Programmes for older adults.

Patient experience

- At least 5% of Asian representatives join Reo Ora (Auckland and Waitemata DHBs).

Strategic approach

The Asian and Middle Eastern, Latin American and African (MELAA) Health Action Plan (Auckland and Waitemata DHBs) will be updated to address the areas of focus set out in this health needs assessment. This action plan will be overseen by the Asian & MELAA Health Governance Group (Auckland and Waitemata DHBs). Successful implementation of the action plan will require collaboration across the health sector.

Background and scope

Traditionally, a health needs assessment is an analysis of a population's demand and need for health services - it can help to create a picture of the health status of a DHB population at a given time. It provides the foundation for the Annual Plan, Regional Service Plan, and other strategic and operational plans. Previous health needs assessments have highlighted the mainly excellent health outcomes of Asian populations across our districts. The purpose of this adapted health needs assessment therefore was to compare health outcomes of Asian populations in Waitemata and Auckland DHBs with Asians internationally to highlight what action could be taken locally to further improve health outcomes for Asians in our districts.

New Zealand, and particularly the Auckland region is becoming more diverse in ethnicity and culture. The Asian population share significantly contributes to the total population in Waitemata and Auckland DHBs and New Zealand. There were estimated 127,980 (28% of the total) and 100,550 (18% of the total) Asians residing in the catchment areas of Auckland and Waitemata DHBs, respectively (Asians accounted for 12% of the total nationwide), based on Census 2013. By 2033, the Asian population will likely make up 28% to 39% of the total population for Waitemata and Auckland DHBs. Nationwide, Asian populations are growing the fastest and will account for 19% (slightly more than 1 million in size) of the total by 2033. New immigrants make up a large proportion of the New Zealand Asian population. In the Auckland region, about 78% of the Asian population were born overseas, and nearly half of this overseas-born population are new settlers who have been residing in New Zealand for under 10 years (Walker, 2014).

Despite the common tendency to cluster all Asian peoples into one single category, it is important to note that the term 'Asian' as used in New Zealand refers to very diverse communities with origins in the Asian continent, from Afghanistan in the west to Japan in the east, and from China in the north to Indonesia in the south (Ho, 2015). Moreover, some Asian ethnic groups living in New Zealand may have arrived on these shores as a new migrant by 'choice', whereas others such as refugees (and their families), and asylum seekers have come to this country asking for protection for fear of being mistreated or are in danger. They are from countries including Burma, Bangladesh, Bhutan, Cambodia, China, India, Laos, Nepal, Pakistan, Sri Lanka and Vietnam. New Zealand is unique in that it reserves its quota placements for the most needy cases such as medically disabled, women-at-risk and protection cases as identified by the United Nations High Commissioner for Refugees (UNHCR) (Ministry of Health, 2016).

Asian populations are performing well in many health areas in Waitemata and Auckland DHBs, perhaps partially due to the protective 'healthy migrant effect', enjoying higher than average life expectancy at birth, and generally better health outcomes compared to other ethnic groups nationally. However there are significant variations experienced within and across Asian subgroups and unmet needs for 'high-risk' groups such as former refugees. Other than ethnic origins, the people grouped under the generic label of Asian are very diverse in health status, health beliefs and practices, housing, geographical distribution, migration history, English language proficiency and socio-economic status; all of these factors can influence how they engage with health services (Bedford & Ho, 2008) (Frieson, 2005) (Ho & Bedford, 2006) (Horner & Ameratunga, 2012). Furthermore, there is evidence of their underutilisation of health and social services compared to other ethnic groups (Mehta, 2012).

"New Zealand's health system needs to do better for the population groups that do not enjoy the same health as New Zealanders as a whole. These groups include Māori and Pacific peoples, some Asian subgroups, refugees, migrants and people with disabilities."

- *Minister of Health. 2016.* ***New Zealand Health Strategy: Future direction****. Wellington: Ministry of Health.*

A benchmarking process was used as the method to apply metrics and compare best practice approaches in order to determine who has the very best key health outcomes and health areas, who sets the standard and what that standard is, compared to New Zealand at a country level and at a district level for Waitemata and Auckland DHBs. The results of undertaking such a process allows funders and planners to identify the gaps and areas of high performance for Asian subgroups locally, looking at their health outcomes compared internationally, with broader consideration to international social progress indices, broader policy and legal frameworks, and culturally appropriate services, programmes and partnerships. Benchmarking Asian subgroups within the two DHBs and at a country level to international comparator countries, establishes a platform to better understand potential future demands on services for identified subgroups and unmet need to close the health inequalities gap experienced by targeted Asian ethnic groups.

The report covers the following sections:

1. Headline qualitative findings from an international health literature analysis, comparing best practice approaches and benchmarked performance of New Zealand compared with comparator countries in the following areas:
   - Monitoring Asian and migrant health
   - Policy and legal frameworks affecting Asian and migrant health
   - Asian and migrant sensitive health systems including service access and utilisation, and the health workforce
   - Networks, partnerships and multi-country frameworks on Asian and migrant health
2. Population profile of Asian in Waitemata and Auckland DHBs, and other countries
3. Key health outcomes, health risk factors and prevention, and health service use
4. Patient experience and community engagement/participation
5. Opportunity including social progress index indicators
6. Key findings
7. Reflections and next steps.

Most countries in Europe do not routinely collect health data by migrant status, in contrast to the practice in Australia, Canada, New Zealand and the United States (US) (WHO, 2011). Singapore, Australia, Canada and the UK have higher migrant populations or a higher share of migrants in their total populations according to the Migration Policy Institute (Migration Policy Institute, 2010). In addition, China, India and South Korea ('South Korea' and 'Republic of Korea' are used interchangeably in this report) will also be included as they are the major origin countries of the Asian peoples in Waitemata and Auckland DHBs and in New Zealand.

Table 2 Countries included in the report

Country	Reason for inclusion as a comparator	Income level	Migrant status, ethnicity data or proxy	Population group to be used for comparison
Australia	Neighbouring country of New Zealand and with higher immigration population	High income	Available	National data, Asian data when available
Canada	Higher immigration population	High income	Available	National data, Asian data when available
The UK	Higher immigration population	High income	Available	National data, Asian data when available
Singapore	Higher immigration population	High income	Mainly Chinese and Indian	National data
Korea	Korean, origin country	High income	Korean	National data
China	Chinese, origin country	Developing country	Chinese	National data
India	Indian, origin country	Developing country	Indian	National data

Methods

Literature sources

The literature review focused on studies of Asian and migrant health from a series of comparable countries (Australia, Canada, China, India, Korea, New Zealand, Singapore, UK and US). Searches for relevant articles were conducted on Medline, PubMed, Scopus, Grey Literature, Web of Science and Google Scholar between November 2015 and February 2016. In addition, the websites of the World Health Organization (WHO) and Migrant Integration Policy Index (MIPEX) were searched. The following combinations of keywords were used to identify relevant articles:

- [(Specific Country, e.g. Australia) AND (monitor OR Surveillance OR trends OR ethnicity data OR health status)] AND (Migrant OR Asian)
- [(Specific Country) AND (policy OR entitlement OR legal framework OR law OR regulation)] AND (Migrant OR Asian)
- [(Specific Country) AND (culturally competent OR work force OR access OR responsive OR cultural support OR diversity)] AND (Migrant OR Asian).

Strategic and Outcome frameworks

This benchmarking report is informed by the Boards' Strategic Themes for both Waitemata and Auckland DHBs.

Community, whānau and patient-centred model of care	**Emphasis/investment on both treatment and keeping people healthy**
Service integration and/or consolidation	**Intelligence and insight**
Evidence informed decision making and practice	**Outward focus and flexible, service orientation**
Operational and financial sustainability	

Outcome and intervention logic frameworks have been included in the 2016/17 annual plans for both Waitemata and Auckland DHBs (Appendix 3 and 4). At a high level, the health outcomes of both DHBs are: 1) increase in life expectancy at birth, and 2) reduce the ethnic gap in life expectancy at birth. To achieve the high level outcomes, the two DHBs measure their performance against a range of outcome and impact measures to understand how to address inequalities in life expectancy. Both DHBs have established key long-term outcomes made up of three main areas: 1) risk factors/prevention or healthy communities; 2) reducing mortality rates from conditions considered amenable, and 3) improving patient experience of health services. This benchmarking analysis follows the order of the high level and then long-term outcomes.

Disease burden metrics

The World Bank commissioned the first Global Burden of Disease (GBD) study for its World Development Report 1993, in collaboration with the Harvard School of Public Health and WHO. The Bill & Melinda Gates Foundation provided funding for a new GBD 2010 study in 2007, led by the Institute for Health Metrics and Evaluation at the University of Washington, in collaboration with WHO, Harvard University, Johns Hopkins University, and the University of Queensland (WHO, 2013). Most recently, papers were published in the Lancet, based on the new round of study – GBD 2013 (Murray, 2015) (Global Burden of Disease Study 2013 Collaborators, 2015) (GBD 2013 Risk Factors Collaborators, 2015). New Zealand and Australia have also produced burden of disease reports (Ministry of Health, 2012) (AIHW, 2015).

There were substantial differences in some areas between the GBD 2010 and the WHO/UN Interagency groups, but in many other areas the results were quite similar. However, when the WHO report was released in November 2013, it did not endorse the GBD 2010 results before they had the opportunity to review and assess the reasons for differences, pending the availability of more detailed information on the data. It is also not known whether WHO will endorse the results of GBD 2013, which includes changes and improvements since GBD 2010. However, the concepts of disease burden are the same between the two sets of methods.

Disability-adjusted life year (DALY) is a summary measure combining time lost through premature death and time lived in states of less than optimal health, referred to as 'disability'. One DALY can be thought of as one lost year of 'healthy' life and the measured disease burden is the gap between a population's health status and that of a normative reference population (WHO, 2013). DALYs for a cause is calculated as the sum of the YLLs from that cause and the YLDs for people living in states of less than good health resulting from the specific cause:

DALY = YLL + YLD for a specific cause or all causes.

Box 1 Key terms used in burden of disease studies (AIHW, 2015)

Attributable burden: The disease burden attributed to a particular risk factor. It is the reduction in burden that would have occurred if exposure to the risk factor had been avoided.

Disability-adjusted life year: One (1) year of healthy life lost, either through premature death or, equivalently, through living with ill health due to illness or injury.

Incidence: The number of new cases (of an illness or event) occurring during a given period.

Prevalence: The number of cases of a disease or injury in a population at a given time.

Years lived with disability: A measure of the years of what could have been a healthy life that were instead spent in states of less than full health. YLD represents non-fatal burden.

Years of life lost: Years of life lost due to premature death. YLL represents fatal burden interchangeably termed 'fatal health loss'.

WHO adopted the simplified calculation methods for DALYs in late 2012 as described below (WHO, 2013):

- Use of a new normative standard life table for the loss function used to compute YLLs
- Calculation of YLDs simply as the prevalence of each sequela multiplied by the relevant disability weight

- Adjustment for comorbidity in the calculation of YLDs
- No discounting for time or unequal age weights.

The report adopted the WHO methods for calculating mortality and YLL rates for Waitemata and Auckland DHBs and New Zealand, using the WHO standard life table (standard loss functions), WHO World standard population (2000-2025) for age standardisation, WHO/GHE cause categories and ICD 10 codes, the WHO method of redistribution of garbage disease cause codes and adjustment for incompleteness of death registrations.

DALYs and YLDs were not included in the comparison/ranking at DHB level due to the necessary epidemiological data not being available for Asians and their sub-groups in both DHBs and the potentially large discrepancy between data sources.

At country level, the disease burden metrics were extracted for the year 2010 (termed as 'GBD 2010' in this report) from the Viz Hub of the Institute for Health Metrics and Evaluation (IHME) (IHME, 2016). Acknowledging the potential differences of the methods for mortality and YLL rates between the WHO and the IHME (GBD 2010 and 2013), we used the New Zealand average for adjusting the discrepancy when comparing the health outcomes of Asians in the two DHBs with the metrics at country level. There may still be residual biases, but the comparisons aimed to look at the rank rather than the absolute values and are thus thought to be relatively robust.

Maternal health

Maternal mortality ratio (MMR) measures the number of maternal deaths per 100,000 live births. The fifth Millennium Development Goal (MDG 5) aims for a 75% reduction in MMR between 1990 and 2015. The GBD 2013 study used their cause of death database (1980-2013) to estimate MMR (Kassebaum, 2014). Direct and indirect deaths during pregnancy and within 6 weeks of delivery, plus late maternal deaths up to 1 year after delivery and the fraction of HIV-related deaths aggravated by pregnancy were included in the calculation of MMR in GBD 2013.

The Perinatal and Maternal Mortality Review Committee (PMMRC) of New Zealand defines a maternal related death as 'death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes', based on the WHO definitions from the International Classification of Diseases (10th edition) (PMMRC, 2015). In addition, the PMMRC also defines MMR as the number of maternal related deaths per 100,000 maternities, and maternities are defined here as 'all births at 20 weeks or beyond or weighing 400g or more if gestation was unknown'. Because of the different definitions of MMR between PMMRC and the GBD 2013 study, direct comparisons would be hard. No calculations were made for MMR by ethnicity at DHB level due to very small numbers.

Low birth weight is defined as a weight of less than 2500g (up to and including 2499g) irrespective of the gestational age and the measurement should be taken within the first hours of life, before significant postnatal weight loss has occurred (Ministry of Health, 2015). Child mortality is a core indicator of child health and well-being. The MDG4 target was to reduce the under-five mortality rate by two thirds between 1990 and 2015.

An infant death is a live-born infant dying before the first year of life is completed according to WHO (UN IGME, 2015). Infant deaths comprise early neonatal deaths, late neonatal deaths and post-neonatal deaths. Infant death rate is the number of infant deaths per 1000 live births over a particular time period (usually annually).

Risk factors

GBD 2013 estimates the burden of disease attributable to risk factors in three categories at Level 1: 1) behavioural, 2) environmental, and 3) metabolic. At its level 2, the risk factors are as follows:

Table 3 Risk factors included in GBD study

Low glomerular filtration rate	Air pollution
Low bone mineral density	Unsafe sex
High total cholesterol	Tobacco smoke
High systolic blood pressure	Sexual abuse and violence
High fasting plasma glucose	Low physical activity
High body mass index	Dietary risks
Unsafe water, sanitation, and hand washing	Child and maternal malnutrition
Other environmental risks	Alcohol and drug use
Occupational risks	

WHO reported four metrics of smoking, which are defined below (WHO, 2015).

Table 4 Definitions of smoking used by WHO

Current Tobacco Smoking	'Current' means smoking at the time of the survey, including daily and non-daily smoking. 'Tobacco smoking' means smoking any form of tobacco, including cigarettes, cigars, pipes, hookah, shisha, water-pipe, etc. and excluding smokeless tobacco.
Daily Tobacco Smoking	'Daily' means smoking every day at the time of the survey. 'Tobacco smoking' means smoking any form of tobacco, including cigarettes, cigars, pipes, hookah, shisha, water-pipe, etc. and excluding smokeless tobacco.
Current Cigarette Smoking	'Current' means smoking at the time of the survey, including daily and non-daily smoking. 'Cigarette smoking' means smoking any form of cigarette, including manufactured and roll-your-own.
Daily Cigarette Smoking	'Daily' means smoking every day at the time of the survey. 'Cigarette smoking' means smoking any form of cigarette, including manufactured and roll-your-own.

The smoking rates based on Census 2013 are used in this report so that the rates by Asian subgroup can be calculated. The definitions related to smoking in Census 2013 are listed below:

- Regular smoker – Someone who actively smokes one or more manufactured or hand-rolled tobacco cigarettes per day
- Never smoked – Someone who never actively smoked manufactured or hand-rolled tobacco cigarettes at all or never actively smoked one or more per day
- Ex-smoker – Someone who is not a regular smoker now but had been a regular smoker of one or more cigarettes in the past.

'Regular smoker' in Census 2013 is very close to the definition of 'daily smoking' in the New Zealand Health Survey (NZHS).

Overweight and obesity, modifiable risk factors for health are defined as 'abnormal or excessive fat accumulation that may impair health' according to WHO (WHO, 2016). Obesity is defined as a person's BMI of 30 kg/m^2 or higher for an adult. Obesity rate is the percentage of a defined population with BMI of 30 kg/m^2 or higher. The WHO's definition of overweight is a person's BMI greater than or equal to 25 but less than 30 kg/m^2 for an adult.

Social Progress Index

The Social Progress Index offers a 'rich framework for measuring the multiple dimensions of social progress, benchmarking success, and catalysing greater human wellbeing' (Social Progress Imperative, 2016). The index is designed based on four principles, namely exclusively social and environmental indicators, outcomes rather than inputs, holistic and relevant to all countries, and actionable. There are three dimensions of social progress included at country level in the Social Progress Index Framework (Appendix 5), which are: 1) basic human needs, 2) foundations of wellbeing, and 3) opportunity, so that these three questions can be answered properly:

- Does a country provide for its people's most essential needs?
- Are the building blocks in place for individuals and communities to enhance and sustain wellbeing?
- Is there opportunity for all individuals to reach their full potential?

There are four components for each dimension of the framework and for each component there are three-five specific outcome indicators. The overall Social Progress Index score is a simple average of the three dimensions, and each dimension is the simple average of its four components. 'Principal component analysis' is used to identify the components using the outcome indicators within each component of the Social Progress Index framework.

It is particularly important for migrants to live in a harmonious and inclusive social and political environment, in addition to enjoying good general physical and mental health. In the framework, the last but not least dimension, opportunity, 'measures the degree to which a country's citizens have personal rights and freedoms and are able to make their own personal decisions as well as whether prejudices or hostilities within a society prohibit individuals from reaching their potential'. Access to advanced education is essential for migrants and creates abundant opportunities for individual and social development.

Social Progress Index scores at the overall level, dimension level, and component level are all based on a 0-100 scale.

Definitions

Table 5 Definitions used in the report

Term	Definition
Asian	People originating from Asian countries including countries in West Asia (Afghanistan and Nepal), South Asia (covering the Indian sub-continent), East Asia (covering China, North and South Korea, Taiwan, Hong Kong, Japan), and South East Asia (Singapore, Malaysia, the Philippines, Vietnam, Thailand, Myanmar, Laos and Cambodia). This definition is commonly used within the health sector and is the basis of the Statistics New Zealand Asian ethnicity categories
Cancer	In this document we have used the term 'cancer' to refer to all neoplasms that may be benign (not cancer), or malignant (cancer)
CALD populations	Culturally and linguistically diverse populations from Asian, Middle Eastern, Latin American and African backgrounds
Fatal health loss	Fatal health loss refers to the measure of YLLs
Health loss	Health loss refers to the measure of DALYs
MELAA	Middle Eastern, Latin American and African groups
Migrants	People who were born overseas who settle in New Zealand (also known as immigrants)
Refugees	Any person who, owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his/her nationality and is unable, or owing to such fear, is unwilling to avail himself/herself of the protection of that country[3]. Refugees arrive in New Zealand under one of three categories: ▪ Quota refugees ▪ Family reunification members ▪ Asylum seekers
Total dependency ratio	The total dependency ratio estimates the burden of the dependent populations (the number of children (0-14 years old) and older persons (65 years or over)) by the working-age population (15-64 years old)[4], which is related to social and economic development, and has implications for social support needs and use of health care services.

[3] United Nations Convention Relating to the Status of Refugees (1951). United Nations Conference on the Status of Refugees and Stateless Persons, Article 1. Geneva.

[4] Dependency ratio. http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/demographics/dependency_ratio.pdf, accessed 12 April 2016

Legend used for interpretation and reflection

To reflect on the 'learnings' from the benchmarked findings and areas for further work, a section on 'Interpretation and reflection' has been added after each health outcome area for the main headings: 1) Life expectancy at birth, 2) Major cause group and leading causes of disease burden, 3) Risk factors & prevention, and 4) Long-term outcomes. The legend is as follows:

Indicates where our result is better than that being compared to

Indicates where our result is similar to that being compared to

Indicates where our result is not as good as that being compared to

Caveats and limitations

Literature review

1. The Asian cohort is often described as a subset of the country's migrant population or ethnic minorities, instead of being categorised as its own separate entity. As a result, the qualitative literature resources on Asian health in the comparable countries were limited. A second search round with inclusion of 'migrant' as a search word was incorporated into the method, in order to expand the scope of the search and draw comparable findings from the literature.
2. Apart from the comparator countries (Australia, Canada, UK and US), there were difficulties in finding literature from China, India, Korea and Singapore. These difficulties include language differences and literature from these countries not being readily published on the search databases accessed.
3. The majority of the literature sourced focused on pilot studies on a specific disease outcome. This had limitations in terms of generalisability or transferability at a national, regional or sub-regional level for a targeted Asian ethnic group, though the findings were interesting to note for identified Asian ethnic groups.

Analysis of health outcomes

The report uses a wide range of data sources and the data may come from different years for the same indicator. For the health outcomes and all cause disease burdens attributed by the health risk factors, the data of the four metrics namely; mortality rate, DALYs rate, YLL rate and YLD rate, were mainly extracted from the GBD study and Global Health Estimates/WHO, at country level. At DHB

level and by ethnicity, only mortality rate and YLL rate were estimated based on robust mortality data, using the WHO methodology. There are differences to some degree in cause definition by ICD codes, standard life table, World standard population and redistribution of 'garbage codes' between the GBD study and the WHO method in calculating mortality and YLL rates. In addition, there are many data gaps particularly for Asians residing in the migrant countries Australia, Canada and the UK as ethnicity has not been systematically collected and reported in their national systems, such as birth or death registrations.

Nevertheless, the report attempts to provide an international context for the performance of Asian health in Waitemata and Auckland DHBs, to identify the areas of high and low performance, issues, unmet need, and experiences and expectations of Asian health service users.

Literature review

This section of the report summarises recent international and national literature on Asian and migrant health monitoring, policy, programmes and partnerships for benchmarking purposes in the following areas:

- Monitoring Asian and migrant health
- Policy and legal frameworks affecting Asian and migrant health
- Asian and migrant sensitive health systems including service access and utilisation, and the health workforce
- Networks, partnerships and multi-country frameworks on Asian and migrant health.

Monitoring Asian and migrant health

New Zealand's approach to monitoring Asian and migrant health data is comparable with the comparator countries in terms of the methodology used for health data surveillance. Similar to the comparator countries, New Zealand has faced many systematic issues with migrant and ethnicity coding with regards to disaggregation of migrant (into migrant variables) and ethnicity (into Asian subgroups) health data. A recent significant shift has been the updating of the Ministry of Health (MoH) Ethnicity Data Protocols for the Health and Disability Sector (2004) recommendations. Refreshed protocols support a transition from the previous minimum requirements of collecting up to three ethnicities at Level 2 classification, to collecting up to six ethnicities at Level 4 classification. This reflects the requirement for information systems to capture the greater population diversity and improved granularity of information to plan, fund and monitor health services. These changes represent a significant move forward in terms of ethnicity data collection and will make a valuable contribution to health planning. The changes will apply to the whole of the health and disability sector from July 2017.

Communicable disease monitoring

Global public health agencies have shifted focus to improving the collection of ethno-cultural data to assist with communicable disease prevention and control (Gushulak, 2010). Historically, there has been an association of labelling communicable disease risk attributed to targeted ethnic groups risk during periods of outbreak e.g. measles and tuberculosis. Consistently, New Zealand and the US experience a common trend, whereby the collection of ethno-cultural data and inclusion of the migrant variables used in Australia have been traditionally linked to communicable disease surveillance, and not transferred over to non-communicable disease monitoring routines.

Policy and legal frameworks affecting Asian and migrant health

Migrant Integration Policy Index

The MIPEX (Wong, Mortensen, Lim, & Abbott, 2015) is a unique tool which measures policies to integrate migrants in 38 countries. MIPEX is the most reliable and cited index of integration and citizenship policies, widely used by both qualitative and quantitative researchers globally. It

examines the following dimensions with a comparison to what an ideal healthcare system would look like for migrants, including:

- All residents having the same healthcare coverage as domestic nationals in law and in practice
- Access to entitlements, in which all residents can access information in various languages, and through various methods, including cultural mediators
- Healthcare providers informed of these entitlements and equipped to meet their needs, through training, interpretation methods, adapted diagnostic methods and including diversity in staff.
- Health policies support these changes and are equipped to respond to the needs of an increasingly CALD society.

Data from the MIPEX report (2014) was analysed based on the health policy criteria above. New Zealand was ranked the highest ahead of every country listed in the MIPEX report, as well as when benchmarked against the comparator countries in this benchmarking report. The findings demonstrate that migrants in New Zealand receive the most equitable entitlement as compared to our comparator countries both in terms of policy and in practice. There are local policies implemented to cater for the migrant population where there is a high migrant population density. These policies make New Zealand one of the most progressive countries as benchmarked against the countries in this report, but also in the OECD.

Drivers of change

Globally, there is competition to attract, recruit and retain talent to drive the national business growth agenda. New Zealand is right in the mix of this competitive drive for migrant talent. Canada recognises the advantage of highly skilled migrants and international students filling the labour shortage in highly skilled areas, growing the economy and nation building. New immigration policies and programmes have been specifically created to make it easier for international students to study, work, and become permanent residents in Canada, especially for graduate students (Gopal, 2014). New Zealand's new immigration approaches are similar to Canada's in terms of purpose and intention. The result has seen unprecedented net migration of permanent and temporary individuals from Asian countries such as India (21%), China (19%) and the Philippines (9%) who choose to live, work and study in New Zealand (MBIE, Auckland's Migration Statistics and Trends, 2016). However, current policies shaping migrants lives through rules around time limits, work rights and the possibility of gaining permanent residence creates situations where some temporary migrants experience increased vulnerability including limited access to services and unmet need (Collins, 2016). National drivers include:

- New Zealand's immigration policy has progressively shifted from an emphasis on permanent settlement towards an increasing focus on temporary migration (Collins, 2016). Research indicates that 36.1% of temporary migrants to New Zealand live in the Auckland CBD (Collins, 2016)
- The internationalisation and commodification of education is another component of change impacting migration in New Zealand (Collins, 2016). Growth in the export value of international education is a significant contributor to the country's Business Growth Agenda

Auckland hosts a large proportion of international students - close to 63% - which represents a contribution to the Auckland economy of $1.6 billion (MBIE, Auckland's Migration Statistics and Trends, 2016). A key policy encouraging international students to study in New Zealand, in particular in the Auckland district, is driven by targets set by the Auckland Tourism, Events and Economic Development (ATEED) Agency (92,000 by 2025, currently at 70,000 in 2015) (ATEED, 2016)

- Retention policies to encourage international students holding New Zealand degrees to stay post study and work in high value sectors. New Zealand offers work search visas under two categories – Open and Employer Assisted. The Open visa is for 12 months; the Employer assisted visa is for between 2 to 3 years. Students who stay on after they graduate are more likely to stay permanently (MBIE, Auckland's Migration Statistics and Trends, 2016). ATEED has set a target of 25,000 international education jobs within the Auckland region by 2025 (currently 15,000 in 2015).

Asian and migrant sensitive health systems including service access and utilisation, and the health workforce

CALD cultural competency training

Waitemata eCALD® services are a world leader in the development of CALD cultural competency training for the health workforce.

A comprehensive and quality range of CALD online and face-to-face courses and resources for the New Zealand health workforce have been developed by Waitemata DHB's eCALD® Services (WDHB, eCALD, 2016) with the aim of improving:

- the quality of engagement of health practitioners and CALD clients/patients
- cross-cultural communication and interactions between employers and employees, as well as employees-to-employees working in a culturally diverse workplace.

New Zealand health bodies have endorsed eCALD® courses and resources for their members, for example, the Royal New Zealand College of General Practitioners and the Health Regulatory Authorities of NZ (HRANZ) which includes: the Dental Council of NZ, Dietitians Board, Medical Council of NZ, Midwifery Council of New Zealand, Medical Radiation Technical Board, Medical Sciences Council, NZ Chiropractor Board, NZ Psychologists Board, Nursing Council of NZ, Occupational Therapy Board of NZ, Pharmacy council of NZ, Physiotherapy Board of NZ, Podiatrists Board of NZ, Psychotherapists Board of Aotearoa NZ, and the Optometrists & Dispensing Opticians Board.

National primary care and non-governmental organisations such as Pregnancy Help, Plunket NZ, Family Works, and Metlifecare are working with eCALD® to roll out courses to their employees. There is strong interest from the University of Auckland, School of Population Health and inter-sectoral agencies such as Ministry of Business, Innovation & Employment (MBIE) Settlement Unit of Immigration NZ, NZ Police, and NZ Human Rights Commission State Sector Services to the New Zealand Police to adopt/adapt the eCALD® courses. There is also international interest from Denmark, Australia and the US to review/adapt/adopt some of the eCALD® courses and resources.

Diverse workforce

Health organisations recognise that recruiting a diverse health workforce is advantageous to ensuring that the diverse cultural, linguistic and religious needs of their patients are met with the delivery of culturally appropriate and responsive services. In the UK, there is increasing pressure to use migrant labour, largely driven by cost and availability. There are policies in the US to encourage racial and ethnic diversity in the health workforce, but they are not migrant specific. In Australia and Canada, there are very limited measures that encourage the participation of migrants into the health workforce (Wong, Mortensen, Lim, & Abbott, 2015).

In New Zealand, diversity is encouraged in the workforce - however the policies often prioritise Māori and Pacific and are aimed at engagement, access to and through health care for prioritised populations, and enabling and creating a sustainable health workforce (Ministry of Health, 2016). The rapid net migration of new migrants from CALD Asian backgrounds in both Waitemata and Auckland DHBs warrants targeted workforce development strategies that include growing and sustaining a diverse, culturally competent workforce that provides 'cultural intelligence' in the health sector. Particularly for key high use settings such as primary health, secondary care and mental health to best reflect the needs of the communities they serve now and in the future.

Digital health tools

Australia has best practice examples of two applications or online tools available to support those with CALD Australian and refugee backgrounds:

- The Cancer Council Victoria provides a multilingual printable appointment card to help CALD Australians more easily access healthcare appointments (Cancer Council Victoria, 2016)
- New South Wales (NSW) Refugee Health Service's online Appointment Reminder Translation Tool allows the Service to generate translated appointment details into the client's preferred language (NSW Refugee Health Service, 2016).

In New Zealand, Waitemata DHB has developed the 'Listen Please' clinical translation application for patients to communicate with nurses, doctors and allied health personnel, and vice versa. It is aimed at patients who cannot speak at all (e.g. breathing tube in their airway) but can communicate non-verbally, or patients who cannot speak English but can speak Mandarin/Cantonese Chinese, Korean, Samoan or Tongan.

Language support

Research shows that language barriers have a negative effect on access to care and prevention services, adherence to treatment plans, timely follow-up, and appropriate use of emergency department services (Gushulak, 2010). Language interpretation is free and generally available to health patients in Australia, New Zealand, UK and in a few states in the US. In Canada, free services are not readily available, with the patient required to pay for service (Wong, Mortensen, Lim, & Abbott, 2015). In New Zealand, every individual has the legal right to an interpreter when dealing with the law, with health service providers or during elections, in keeping with Article 21 of the Universal Declaration of Human Rights (UN, 2016). Health interpreting services are free for patients who are eligible and entitled to publicly funded health and disability services living in the

metropolitan Auckland DHBs with the aim of (a) ensuring health services are accessible, (b) improving communication, and (c) improving and maintaining clinical safety (WDHB, Asian Health Services, 2016). In 2015/16, the top three languages requested by non-English speaking or limited English speaking clients and hearing impaired peoples when accessing primary health interpreting for services such as general practice in both Waitemata and Auckland DHBs were (NRA, Metro Auckland Primary Health Interpreting Report, 2016):

Waitemata DHB

1. Mandarin
2. Korean
3. Sign language

Auckland DHB

1. Mandarin
2. Vietnamese
3. Cantonese

In 2015-16, Immigration New Zealand undertook cross-government work to review and address the language barriers experienced in accessing services provided or funded by government agencies in the six resettlement regions in New Zealand. The Interpreter Services Project focused on available language assistance services for those who are not proficient in English, including the provision and use of interpreters by mainstream agencies, services and programmes (MBIE, Interpreter Services Project - Summary of National Themes from Service Provider Consultation, 2016)

Networks, partnerships and multi-country frameworks on Asian and migrant health

The literature indicates that the historical purpose of international collaboration and partnerships was to prevent potential cross-border spread of communicable disease, and this still is the primary focus for most countries.

A notable partnership between Auckland, Waitemata and Counties Manukau DHBs has been working in partnership with New Zealand Red Cross volunteers and the Mangere Refugee Resettlement Centre. Both have played pivotal roles in promoting the Refugee Primary Care Wrap Around Service (funded by the three metro Auckland DHBs) to their settling quota refugee (including Burmese, Kachin, Chin, Karen and Kayar) and asylum seeker communities aimed improving enrolment rates with a family doctor (GP) for access to universal healthcare.

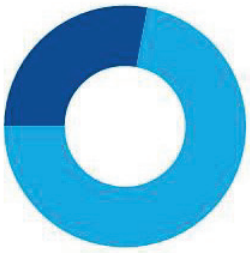
In New Zealand, there are a number of key stakeholder networks established at the national, regional or sub-regional levels, led by Central Government Ministries, DHBs or other agencies across health, settlement support agencies, Non-Government Organisations (NGO) providers, academia, immigration networks and community. The priority population foci includes Asians, migrants, and/or refugee populations where health is either the core focus or included in discussions as part of the Terms of Reference. The key networks (though not exhaustive) include: New Zealand Refugee Resettlement Strategy Implementation Auckland/Wellington Key Stakeholders Reference Group, Auckland Health National Refugee Resettlement Strategy (NRRS) Working Group, Auckland Agency

Group, Auckland Regional Asian & MELAA Primary Care Working Group, Asian & MELAA Health Governance Group (Waitemata and Auckland DHBs), Asian Mental Health & Addiction Governance Group (Waitemata DHB), Asian Mental Health & Addiction Governance Group (Counties Manukau DHB), Asian Clinical Governance Group Committee -Mental Health (Counties Manukau DHB), Pan-Asian Health Interest Group (Counties Manukau DHB), Multi-Ethnic Health Network (Waitemata and Auckland DHBs), The Asian Network Inc.(TANI) General Network Meeting, regional and/or local settlement networks, and ethnic specific groups. There are many other intersectoral ethnic advisory and interest groups established such as the Ethnic Peoples Advisory Panel (Auckland Council) and Asian Advisory Board (New Zealand Police).

In the South Island of New Zealand, there are dedicated groups addressing refugee and migrant health in the Canterbury region, which are: Inter-Agency Network for Refugees and Migrants (INFoRM), Health and Wellbeing Network, Elder Canterbury's Elder Refugee and Migrant Group, and CALD Health Reference Group (CHAG).

Population profile

Asian populations in Waitemata and Auckland DHBs, New Zealand



154,370
Asian peoples live in Auckland - 31% of the total population

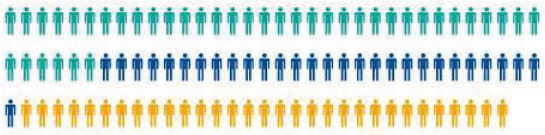
123,750
Asian peoples live in Waitemata - 21% of the total population

Our Asian populations are increasing

Waitemata DHB has the fastest growing Asian population in NZ, expected to reach 214,490 by 2033 (an increase of 113% from 2013).

By 2033, the Asian population is likely to make up 39% of the total population for Auckland DHB and 28% of the Waitemata DHB population.

Auckland and Waitemata DHBs



Chinese (40.31%) Indian (28.68%)
Other Asian (31.01%)

40% of our Asian population are Chinese

There are more females than males in our Chinese and Other Asian populations, and more Indian males than females, especially in Auckland DHB.

The Asian population is relatively young.
More than 50% of our Asian peoples are aged between 15 and 44.

9% of our Chinese population are aged 65+.

A higher proportion of Asian peoples aged 20-24 live in Auckland DHB than Waitemata. This is thought to be due to students attending Auckland universities and Private Training Establishments (PTEs)

For relatively smaller Asian sub-groups, only the Census Usually Resident (CUR) figures were available for use and the ethnicity was Total Response (i.e. one individual can belong to more than one self-identified ethnic group). We cannot make direct comparisons between the CUR population and the estimated population. There was a large Korean population followed by Filipino and Japanese in Waitemata DHB. In Auckland DHB, Filipino almost matched the Korean population, followed by Sri Lankan and Japanese.

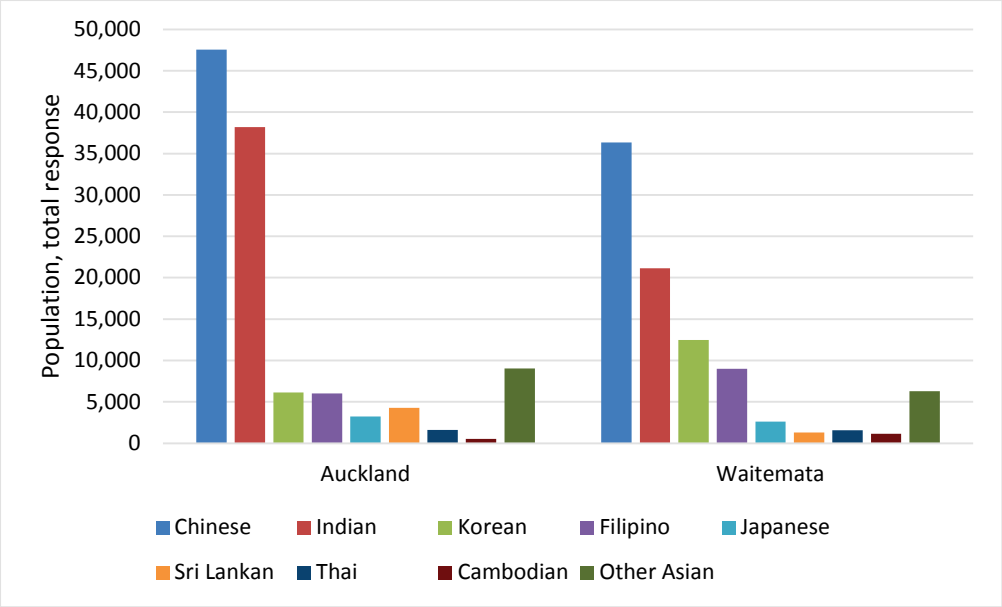


Figure 1 Asian sub-groups, Waitemata and Auckland DHBs, total response, CUR 2013

Other countries

The table below summarises the size of the Asian population and its contribution to the total population of that country.

Table 6 Size and proportion of Asian population by country

Country	Asian population (in thousands)	Proportion of the total population (%)	Year	Data source and comments
China	1,393,337	100%	2013	Global health observatory, WHO
India	1,252,140	100%	2013	Global health observatory, WHO
Republic of Korea	49,263	100%	2013	Global health observatory, WHO
Singapore	5,412	100%	2013	Global health observatory, WHO
Australia	1,538	6.5%	2015	Based on the top 10 countries of birth
Canada	4,279	13.0%	2011	Visible minority populations of South Asian, Chinese, Filipino, Southeast Asian, West Asian, Korean and Japanese
The UK	4,214	7.5%	2011	England and Wales, Census 2011
New Zealand	521	11.7%	2013	Estimated population

Australia

Australia does not collect ethnicity information in the social and health sector in a systematic way as New Zealand does. Country of birth is now used as a proxy for ethnicity, but probably omits the people born in Australia who are self-identified as Asian or Asian sub-groups.

Persons born in the UK were the largest group of overseas-born residents, accounting for 5.1% of Australia's total population, followed by people born in New Zealand (2.6%), China (2.0%), India (1.8%) and the Philippines and Vietnam (both 1.0%) (ABS, 2016).

Table 7 Top ten countries of birth estimated resident population, Australia, as at 30 June 2015 *(a)(b)(c)*

Country of birth	Population	% of Australian population
United Kingdom *(d)*	1,207,000	5.1
New Zealand	611,400	2.6
China *(e)*	481,800	2.0
India	432,700	1.8
Philippines	236,400	1.0
Vietnam	230,200	1.0
Italy	198,200	0.8
South Africa	178,700	0.8
Malaysia	156,500	0.7
Germany	125,900	0.5

Notes (a) Estimates are preliminary. (b) Top 10 countries of birth excluding Australia. (c) All population figures presented in this table are rounded. Estimates of the proportion of the Australian population are based on unrounded numbers. (d) United Kingdom, Channel Islands and Isle of Man. (e) Excludes Special Administrative Regions and Taiwan.

Source: Australian Bureau of Statistics. http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/3FA175EA6651F2CACA25776E00178CAA?opendocument, accessed 27 April 2016.

Canada

In Canada, 'visible minorities' are used in accordance with the Employment Equity Act of Canada. The Act defines 'visible minorities' as 'persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour' (Statistics Canada, 2016), with the aim of promoting equal opportunity in employment.

When the concept of visible minority was applied, South Asian and Chinese accounted for 4.8% and 4.0% respectively of the total population in 2011, with Korean accounting for 0.5%. When single and multiple responses of self-identified ethnic origin were both counted in Census 2011 of Canada, Chinese took 4.5% with a population of 1,487,580, with 3.6% for East Indian (1,165,145).

Table 8 Visible and non-visible minority populations by group, 1996–2011, Canada

Group	1996[2,3]		2001[4]		2006[5]		2011[1]	
	Population	%	Population	%	Population	%	Population	%
South Asian	670,590	2.4%	917,075	3.1%	1,262,865	4.0%	1,567,400	4.8%
Chinese	860,150	3.0%	1,029,395	3.5%	1,216,565	3.9%	1,324,750	4.0%
Filipino	234,195	0.8%	308,575	1.0%	410,695	1.3%	619,310	1.9%
Southeast Asian	172,765	0.6%	198,880	0.7%	239,935	0.8%	312,075	0.9%
West Asian			109,285	0.4%	156,700	0.5%	206,840	0.6%
Korean	64,835	0.2%	100,660	0.3%	141,890	0.5%	161,130	0.5%
Japanese	68,135	0.2%	73,315	0.2%	81,300	0.3%	87,270	0.3%
Visible minority, n.i.e.	69,745	0.2%	98,915	0.3%	71,420	0.2%	106,475	0.3%
Multiple visible minorities	61,575	0.2%	73,875	0.2%	133,120	0.4%	171,935	0.5%
Not a visible minority	25,330,645	88.8%	25,655,185	86.6%	26,172,935	83.8%	26,587,575	80.9%
Total population in private households	28,528,125	100.0%	29,639,030	100.0%	31,241,030	100.0%	32,852,320	100.0%

Notes: 1. Statistics Canada, NHS Profile, Canada, 2011; 2. Statistics Canada, Population by Aboriginal Groups and Sex, Showing Age Groups, for Canada, 1996 Census (20% Sample Data); 3. Statistics Canada, Total Population by Visible Minority Population, for Canada, 1996 Census (20% Sample Data); 4. Statistics Canada, Community Highlights for Canada; 5. Statistics Canada, 2006 Community Profiles: Canada (Country)

Source: https://en.wikipedia.org/wiki/Demographics_of_Canada, accessed 2 April 2016.

The three Asian sub-groups, South Asian, Chinese and Korean, were generally younger than the total population of Canada in Census 2006. South Asian had a higher proportion of children aged less than 14 years (24.2% vs. 17.9% of the total population), with Korean having a relatively large proportion of its population aged 15-24 years (20.4% vs. 13.5% of the total population). 10.7% of Chinese were aged more than 65 years, close to 13.0% of the total Canadian population but it was only 6-7% for South Asian and Korean in 2006.

The UK

There were 4.2 million Asian/Asian British residing in England and Wales, based on Census 2011, accounting for approximately 7.5% of the total population. In addition, there were 341,000, classified as 'White and Asian' in the mixed/multiple ethnic group (0.6% of the total). Within Asian/Asian British, Indian accounted for 33.5%, followed by Pakistani (27%), then Bangladeshi (11%) and Chinese (9%).

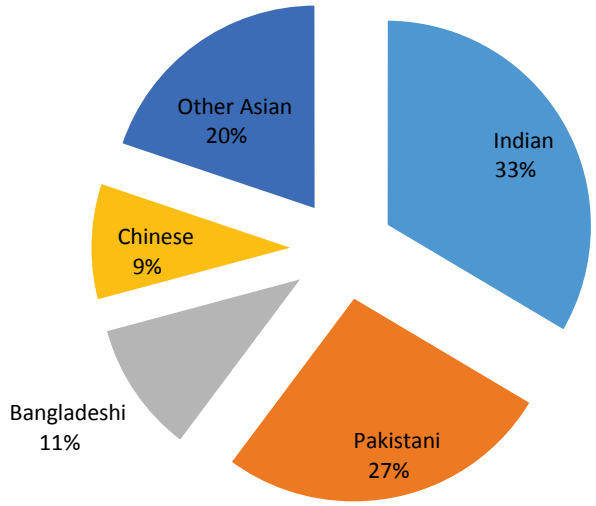


Figure 2 Asian make-up of usual resident population of England and Wales, Census 2011, the UK

Asian British, in general, had a higher proportion of children (23.2% vs. 17.6% for total population) in Census 2011, which is particularly true for Bangladeshi and Pakistani but not for Chinese. Chinese had the highest proportion of working age (15-64 years) population at 83.2% relative to 65.9% of the total population and 65.6% of the White total. The Asian British were generally younger than the total population of England and Wales; Indian had the highest proportion of 65+ years of all the Asian sub-groups (8.1%), which was less than half of the proportion for the total population (16.4%).

Asian countries

China and India have the largest populations in the world and in this comparison as well. India had a higher proportion of children aged less than 15 years (29%), 9% higher than that of New Zealand. India and China had lower populations over 60 years as well. The median age of New Zealanders is comparable to that of China and Australia, older than that of India, but younger than Canada, the UK, Korea and Singapore.

There were more males than females in China and India (by 6.3% for China and 7.6% for India), whereas in other countries including New Zealand there are more females. New Zealand had the lowest sex ratio of the total population; there were only 96 males per 100 females in New Zealand. New Zealand had a higher total dependency ratio than most other countries except for the UK in 2015. China, Korea and Singapore had comparable ratios, sitting at around 37%. The old age dependency ratio for New Zealand was 23% in 2015, similar to that of Australia, Canada and the UK, but much higher than India and China.

Table 9 Population size and age structure by country (2013)

Country	Population (in thousands) total	Population proportion under 15 (%)	Population proportion over 60 (%)	Population median age (years)	Population living in urban areas (%)
China	1,393,337	18	14	37	53
India	1,252,140	29	8	26	32
Republic of Korea	49,263	15	17	39	82
Singapore	5,412	16	16	38	100
Australia	23,343	19	20	37	89
Canada	35,182	16	21	40	82
United Kingdom	63,136	18	23	40	82
New Zealand	4,506	20	19	37	86

Source: http://apps.who.int/gho/data/view.main.POP2040ALL?lang=en, accessed 10 February 2016.

Life expectancy at birth

Internationally	• New Zealand had similar life expectancies to other high income countries	
	• Asians of both DHBs, in particular Waitemata, had the highest life expectancy, compared to the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had higher life expectancy than New Zealand	
	• The Chinese population of Waitemata had the highest life expectancy within Auckland and Waitemata	

Life expectancy at birth reflects the overall mortality level of a population, estimating the average number of years that a new-born is expected to live if current mortality rates hold true.

At country level, New Zealand had comparable life expectancies to other high income countries according to the Global Health Observatory of the WHO. Singaporeans enjoyed the highest life expectancies for females and males (just one year higher than those of New Zealanders), whereas India's life expectancies at birth were the lowest (less than 70 years).

Asians in Waitemata and Auckland DHBs had higher life expectancies than their European/Other counterparts, for both females and males; the life expectancies for Asians residing in Waitemata DHB were the highest. By Asian sub-group, Chinese in Waitemata DHB had the highest life expectancy at birth followed by Indian and Other Asians (including Korean and South-East Asians).

The graph below attempts to compare and rank Asian life expectancy at birth between Waitemata and Auckland DHBs and people of other countries of interest. It should be noted though, that the potential discrepancy between data sources (deaths and population), different years of the data, and different calculation methods (e.g. whether or not using hierarchical Bayesian models for dealing with random variation of death rates (Statistics New Zealand, 2015)). Asian of both DHBs had higher life expectancy at birth than that of the total population of the countries on the list (Asian population of New Zealand: 86 years at birth).

There is generally a lack of vital statistics for Asian in Australia, Canada and the UK, preventing life expectancy being calculated in the usual way. In 2001, Indian and Chinese females had higher life expectancy at birth (82.6 years and 81.6 years respectively), compared to the White Total or the total female population in the UK, and Indian (76.0 years) and Chinese (75.4 years) men had comparable figures to White men. Bangladeshi and Pakistani had slightly lower life expectancy at birth for both women and men. These numbers, although indicative, are however out of date, so cannot be directly compared to the numbers in Figure 3.

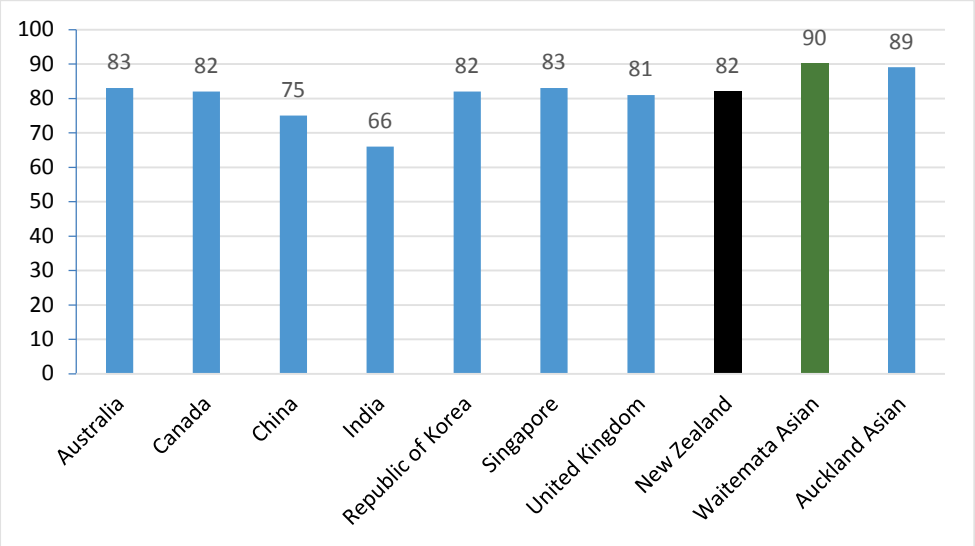


Figure 3 Life expectancy at birth (years), female and male combined, DHBs and countries, 2010-12 and 2013

Interpretation and reflection

Compared to the total population of the comparator countries, Asian of both DHBs performed better and the Chinese in Waitemata DHB is doing the best compared to other ethnic groups in both DHBs. The life expectancy used in this analysis is a period measure assuming the population born now will follow the age specific mortality rate of the present population at various age groups. This assumption holds true to a large degree for a stable population; however, it is likely to be an over-estimate for a migrant population such as Asian, as immigrants are usually screened or selected to be eligible for migration to New Zealand, the so called 'healthy migrant effect'. Nevertheless, as a cross-sectional summary measure of fatal burden on the population, the higher life expectancy of the Asian population needs to be maintained.

There are many factors associated with mortality/life expectancy covering social determinants, up-stream risk and protective factors of disease and injuries, and use of primary/community and secondary services including preventive programmes such as immunisation and screening services. We will need to address the whole spectrum of imperatives presented in the DHBs' Outcomes Frameworks to maintain our top performance in life expectancy across both DHBs. Moreover, it is important to understand the values that drive Asian help-seeking and health-seeking behaviour. In 2014, the top four values Asians placed on their experiences and expectations of Auckland DHB health services were:

1. Excellence and professionalism
2. A professional connection with clinicians
3. Confidence about the level of care
4. Efficiency, productivity, and good processes.

Major cause group and leading causes of disease burden

Internationally	• New Zealand had lower rates of health loss due to communicable diseases as well as maternal, perinatal or nutritional conditions	
	• New Zealand had higher rates of health loss due to mental health and substance use	
	• Asians of both DHBs, in particular Waitemata, had the lowest overall rates of fatal loss compared to the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had lower overall fatal health loss than the total population of New Zealand	

Similar to most high income countries, non-communicable diseases accounted for more than 80% of the fatal health loss in New Zealand. Communicable, maternal, perinatal and nutritional conditions still played an important role in the fatal loss in India (42% of total years of life lost), while injuries accounted for 20% of total YLLs in the Republic of Korea.

New Zealand had the lowest rate of DALYs for communicable, maternal, perinatal and nutritional conditions, a comparable rate for non-communicable diseases, but with a relatively higher injury rate of DALYs (still lower than the three main origin Asian countries of the Asian migrants living in New Zealand, namely China, India and Korea).

Table 10 Age standardised rate of DALYs by major cause group, 2012, GHE/WHO

Country	All Causes	Communicable, maternal, perinatal and nutritional conditions	Non-communicable diseases	Injuries
Australia	17,696	1,161	14,458	2,076
Canada	18,838	1,311	15,725	1,802
China	24,811	3,282	18,748	2,781
India	47,950	15,840	26,503	5,607
New Zealand	**18,742**	**1,157**	**15,164**	**2,420**
Republic of Korea	17,921	1,452	13,824	2,646
Singapore	14,354	1,641	11,555	1,159
UK	20,376	1,394	17,157	1,825

New Zealand had a similar ranking in age standardised mortality rates in 2010 of the GBD study led by IHME, compared to the WHO's estimates. For age standardised DALYs, New Zealand ranked fourth in the WHO estimates, but ranked fifth in the GBD 2010 study, both data sources supporting that New Zealand did better than the UK, China and India. India's DALYs rate was more than double that of New Zealand's in both sources. The rank for YLLs is the same as for mortality rate according to GBD 2010, with India having the highest rate of YLLs (36k per 100,000) followed by China (16k per 100,000) and Korea (but it is still less than 10k per 100,000 as for other high income countries).

Table 11 Age standardised YLLs, all causes, by sex, GBD 2010

Country	Female			Male		
	Rate	95% UI		Rate	95% UI	
Australia	6486.3	6386.0	6594.7	10603.6	10482.9	10729.7
Canada	7268.7	7161.1	7370.5	11352	11223.8	11471.1
China	11795.4	11167.5	12503.7	19775.1	18523.6	20997.5
India	31937.2	28896.0	34975.2	40055.9	35687.8	44841.0
New Zealand	**7832.9**	**7637.0**	**8027.0**	**11833.7**	**11589.0**	**12076.1**
Singapore	6338.8	6187.1	6508.0	10386.5	10188.4	10589.8
Republic of Korea	6917.4	6821.9	7023.8	13625.2	13465.0	13771.9
United Kingdom	7986.5	7905.0	8073.5	12196.5	12098.3	12293.7

As for YLDs, the rank by country is very different from those for mortality rates or YLLs. New Zealand had a similar rate to the UK. Australia and India had the highest rate for YLDs, and China and Singapore were the best performers on the list. It is however unlikely that this means the non-fatal health burden was comparable between Australia and India or between China and Singapore; it is likely that the burden of health loss varies by cause, age group and sex between these countries.

At DHB level, the Asians in Waitemata DHB had roughly 40% of the YLL rate of all the residents of New Zealand (rate ratio: 41% for women and 40% for men). If these rate ratios can be applied to the GBD 2010 rates, we would have 3,188 years of life lost per 100,000 for women and 4,735 per 100,000 for men. Similar to mortality, these rates are clearly the lowest of all the countries on the list, even when uncertainty level or confidence level is taken into account. There were variations within Asian sub-groups.

In Auckland DHB, the rate ratios of YLLs were 52% for women and 50% for men relative to the rate for all New Zealand residents. Again, if we apply these ratios to the New Zealand rate in GBD 2010, we will have 4,096 YLLs per 100,000 for females and 5,921 per 100,000 for males. Just like the Asians in Waitemata DHB, these rates are also the lowest at country level. Again, there were variations by Asian sub-group. Chinese men and women did the best in both DHBs.

As for the Asians living in Australia, the age standardised mortality ratios were both 0.64 for female and male Asia born Australians relative to those born in Australia (AIHW, 2014). If we apply these ratios to the mortality rates in 2010 by the United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) and compare the adjusted rates with the ones of Asian in Waitemata and Auckland DHBs (2010-12), the Asian in Waitemata seemed to have a lower mortality rate than the Asia born Australians both female and male; the Asians in Auckland DHB were roughly comparable to the Australians born in Asia (Figure 4). Caution needs to be exercised when interpreting the graph as the data were drawn from different years and residual confounding and biases may still exist.

In a nationally representative Canadian cohort study (Wilkins, 2008) among the adult population of Canada who completed the 1991 census long-form questionnaire, East Asian had a 34%-37% lower mortality rate than the non-visible minority population in Canada over the 10 years and it was 20%-42% lower for South Asian. The standardised mortality rate ratios (SRR) for Asian in Canada were generally comparable to the mortality rate ratios for Asians of both Waitemata and Auckland DHBs

(all ages), though they were slightly higher than the ones of the two DHBs (reference: SRR=0.53 for women and 0.47 for men in Waitemata DHB; 0.61 for women and 0.56 for men in Auckland DHB).

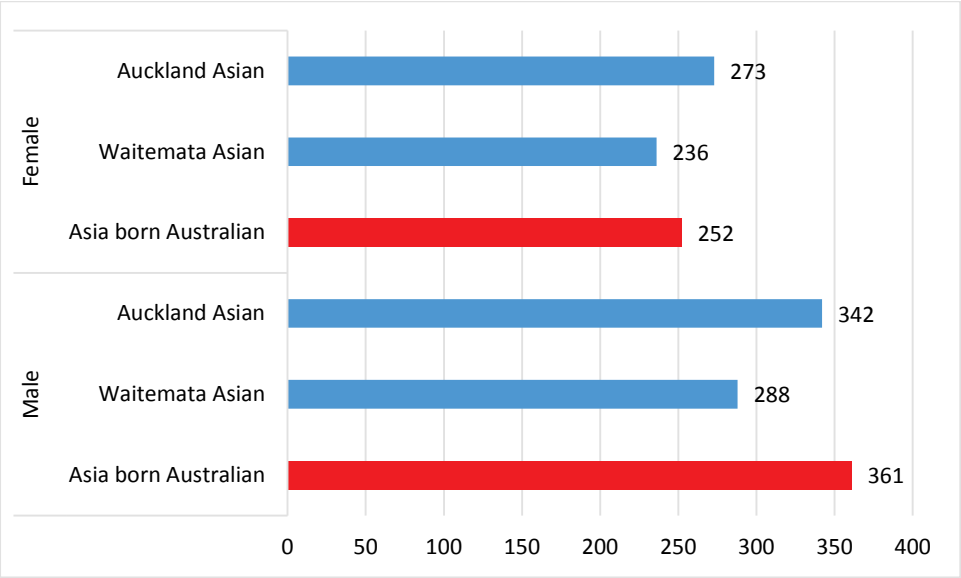


Figure 4 Adjusted mortality rate of Asians in New Zealand and Australians born in Asian countries

The table below shows DALYs ranked by the leading causes (top 21), of the countries on the list. Cardiovascular diseases and cancers were the top two causes of disease burden measured by DALYs in most countries, but mental health and substance use was ranked the first in Australia and second in New Zealand while musculoskeletal disorders ranked in second place for the UK and Canada.

Table 12 Rank of causes by age standardised DALYs, all countries, both sexes, GBD 2010

Both sexes, Age-standardized, 2010, DALYs per 100,000

	China	S Korea	Singapore	Australia	New Zealand	UK	Canada	India
Cardiovascular diseases	1	3	1	4	4	3	4	1
Neoplasms	2	1	2	2	1	1	1	10
Musculoskeletal disorders	3	2	5	3	3	2	2	11
Other non-communicable	4	5	6	5	5	5	5	5
Mental & substance use	5	4	3	1	2	4	3	9
Chronic respiratory	6	10	8	8	8	8	8	4
Diabetes/urog/blood/endo	7	6	4	7	6	7	7	8
Unintentional inj	8	9	11	9	9	9	9	6
Transport injuries	9	12	13	11	10	16	12	14
Neonatal disorders	10	14	14	12	12	11	11	3
Neurological disorders	11	7	9	6	7	6	6	13
Diarrhea/LRI/other	12	15	7	15	15	10	13	2
Nutritional deficiencies	13	11	10	13	13	13	14	12
Self-harm & violence	14	8	12	10	11	14	10	15
Digestive diseases	15	16	15	14	14	12	15	16
Cirrhosis	16	13	17	16	16	15	16	18
NTDs & malaria	17	18	19	20	20	20	20	17
HIV/AIDS & tuberculosis	18	17	16	18	18	18	18	7
Other group I	19	19	18	17	17	17	17	19
War & disaster	20	21	21	21	21	21	21	21
Maternal disorders	21	20	20	19	19	19	19	20

Interpretation and reflection

At country level, New Zealand had lower DALYs rates due to communicable/maternal/perinatal or nutritional conditions compared to all other countries on the list. A recent report by the MoH suggested that New Zealand has come very far along this 'epidemiological transition' i.e. the change from a usually communicable disease dominated health loss pattern to one dominated by long-term conditions (Ministry of Health, 2016). Communicable diseases are more likely to affect children, whereas long-term conditions more so affect adults. However, this is not the case for India (and China to some degree) as communicable diseases still had significant effects on health loss in DALYs. China and India still had a higher health burden due to non-communicable diseases.

For New Zealand, the health loss due to mental health and substance use requires targeted effort, together with musculoskeletal disorders. Whilst, the degree of health loss for cancers and cardiovascular diseases are already well known to us.

At the districts level, the Asians of both DHBs halved the total YLL rate of the New Zealand average for men and women, which is consistent with the findings for mortality rate. Again, the low YLL rate can be partially explained by the 'healthy migrant effect'. The lack of robust data on duration of stay for Asians in New Zealand and lack of ethnicity data in other migration countries such as Australia, Canada and the UK, has made direct 'Asian to Asian' and confounding-controlled comparisons challenging. YLLs and mortality as measures of fatal health loss are certainly important however equally will need to look at the prevalence of risk factors and health conditions, health service use, and patient experience of care for segments of the Asian population - as it takes at least 10-15 years for the healthy migrant effects to wane and many years for the end outcome 'death' to happen. It will be too late to act once we see a substantial increase in YLLs or mortality rates decades later. The YLD rate would be useful to measure the non-fatal burden of disease on the Asian population, but the analysis is not feasible due to lack of robust epidemiological data such as prevalence of health states. It is also still subject to the influence of the 'healthy migrant effect'.

Long-term outcomes

Reducing mortality rates from conditions considered amenable by curing ill health is a key long-term outcome of both Waitemata and Auckland DHBs. In this section, both non-communicable and communicable diseases are included, together with injuries, maternal and infant/child health.

Cardiovascular diseases

Internationally	• New Zealand had similar rates of health loss due to cardiovascular diseases compared to many of the comparator countries	
	• Asians of both DHBs, in particular Waitemata, had the lowest rate of fatal health loss from CVD compared to the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had half the rate of fatal health loss from CVD compared to that of New Zealand	
	• The Indian population of Waitemata and Auckland had higher rates of fatal health loss from CVD compared with other Asian ethnicities	

At country level, Australia and Canada ranked better in mortality rates than New Zealand which had a similar rate to the UK and Singapore. India and China are outliers with higher cardiovascular mortality rates. New Zealand ranked in fourth place in DALYs rate, better than the UK and Singapore and much better than India and China. For YLL rate, New Zealand was in the same place as for DALYs. The YLD rate distribution by country shows a very different picture from that of mortality or DALYs. New Zealand had the lowest rate of cardiovascular YLDs followed by China, Australia and India. Rheumatic heart disease accounted for a good proportion of the non-fatal health loss due to cardiovascular disease in India (44 YLDs per 100,000; 95% UI: 30, 62), which was very different from other countries.

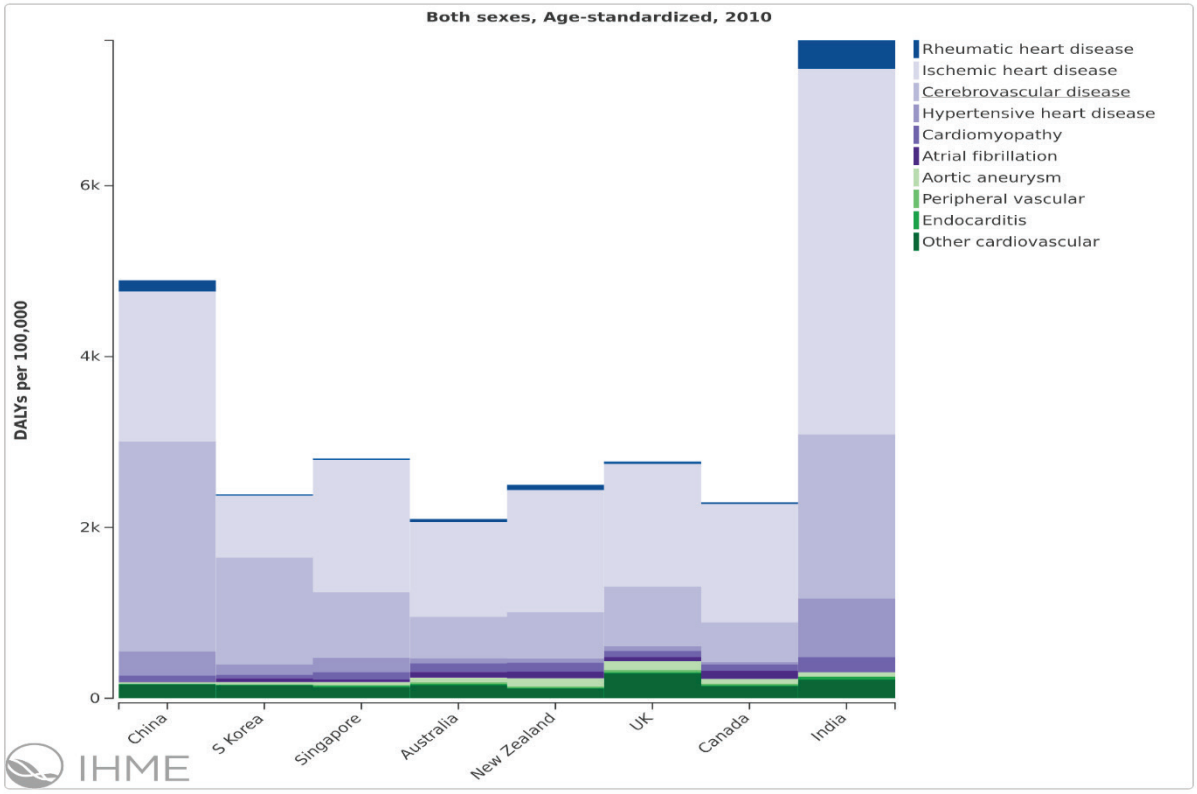


Figure 5 Age standardised DALYs for cardiovascular diseases, both sexes, GBD 2010

At DHB level, Waitemata Asians had 40%-55% of the YLL rate of all the residents of New Zealand (rate ratio: 55% for women and 41% for men). When the rate ratios are applied to the GBD 2010 rates, there are 937 YLLs per 100,000 women and 1,216 per 100,000 men. These rates are clearly the lowest of all the countries on the list, particularly for men. Within Asian sub-groups, Chinese residents had the lowest rate of mortality compared with the other two Asian sub-groups regardless of sex.

In Auckland DHB, the rate ratios were 55% for women and 57% for men relative to the rate for all New Zealand residents. When these ratios are applied to the New Zealand rate in GBD 2010, we will have 934 years of life lost per 100,000 women and 1,714 per 100,000 men. Just like the Asians in Waitemata DHB, these rates are still the lowest at country level. Women of Other Asian ethnicities had the highest rate of lost life years and for men, Indian people had the highest rate; those of Chinese ethnicity did the best for both females and males.

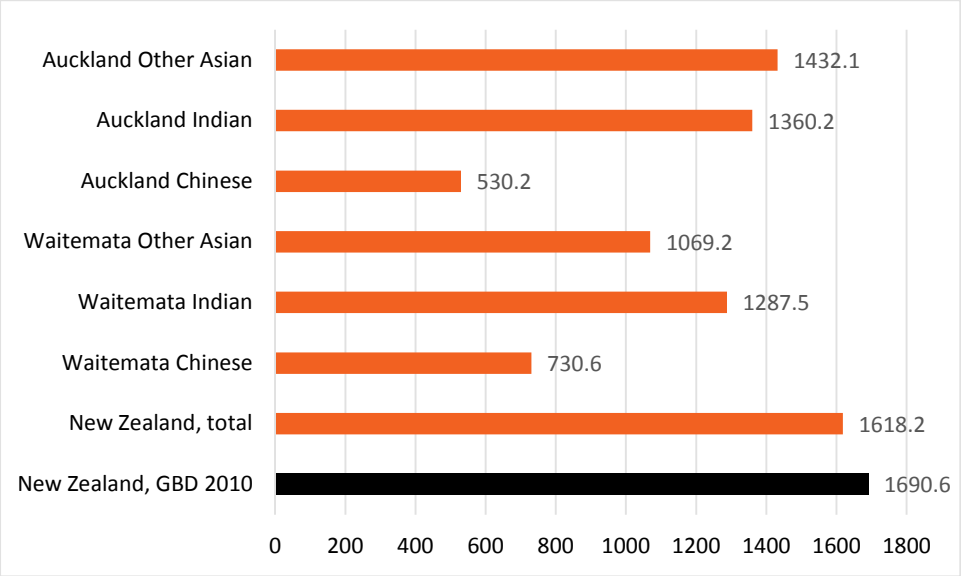


Figure 6 Age standardised YLLs, cardiovascular disease, Asian-subgroups, female

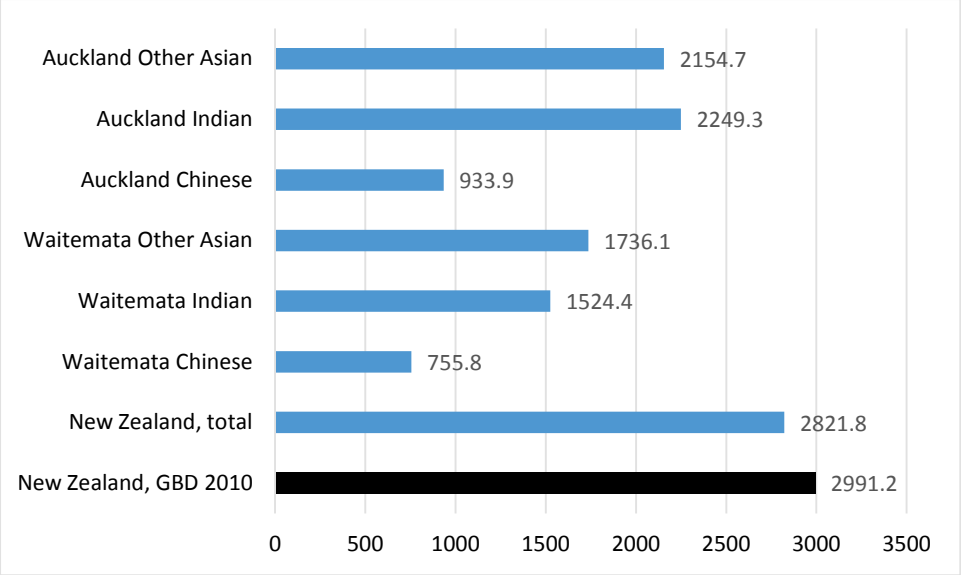


Figure 7 Age standardised YLLs, cardiovascular disease, Asian-subgroups, male

Interpretation and reflection

At country level, New Zealand had the lowest rate of cardiovascular YLDs and performed quite well in the cardiovascular DALYs rate. Cardiovascular diseases were the fourth leading cause of DALYs rate in New Zealand. There is still room for the cardiovascular mortality rate to be reduced, including: 1) reducing prevalence of obesity, hypertension and diabetes/pre-diabetes, and improving physical activity levels, and 2) increasing CVD risk assessment rates and the proportion of patients with CVD or diabetes on proper medication/treatment to reduce premature mortality from CVD.

Although the Asians of both DHBs did very well in the fatal health loss due to CVD, compared to the New Zealand average or the total population of other countries on the list, there were ethnic variations in the cardiovascular YLL rate – Indian and Other Asians had higher rates than Chinese. The DHBs must work to reduce premature mortality from cardiovascular disease and maintain the

lowest premature mortality rates from cancer. To achieve this, it is imperative to understand the barriers that prevent high-risk groups such as South Asians and Chinese from accessing and utilising general practice (Appendix 6).

A Community Health Survey aimed at community members (n=2313) was conducted in October 2012 across the Auckland DHB Local Boards. It cited 'cost' and 'affordability' as barriers in accessing general practice, as well as 'availability' of appointments and 'transport'. Moreover, a study on 'Utilisation of Primary Health Care services: The perceptions and experiences of South Asian immigrations in Auckland, New Zealand found that: 1) South Asians would prefer a family doctor (GP) act as a facilitator rather than a gatekeeper, and 2) health professionals should acknowledge that South Asians are equipped with the right skills to maintain health and wellbeing – they just require opportunities to work in partnership with their family doctor (GP) using a patient centred, culturally appropriate approach (Tamanam, 2016).

To increase 'More heart and diabetes checks', the structural issues of 'cost' and 'transport' should be addressed as part of cross-sectorial and system level upstream measures as well as engaging high-risk groups in the 'co-design' of localities and setting-based interventions in partnership with groups such as Healthy Families Waitakere. Other strategies include culturally appropriate campaigns to increase PHO enrolment, and the benefits of seeing one regular family doctor (GP), delivery of a suite of culturally appropriate self-management interventions and lifestyle messaging on healthy eating and physical activity, and up-skilling of cultural competency in the primary health workforce as part of Waitemata DHB's eCALD® services (WDHB, eCALD, 2016).

Cancer

Internationally	• New Zealand had simliar rates of health loss due to cancer compared with the comparator countries	
	• Asians of both DHBs had the lowest rates of fatal health loss due to cancer compared to the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had half the rate of fatal health loss due to cancer compared with New Zealand	

China had the highest rate of DALYs, while India did the best and Singapore did the second best. The DALYs rates for cancer were comparable between New Zealand, Australia, Canada, the UK and the Republic of Korea, though Australia did marginally better (ranked third). The distribution of YLL rates by country was the same as that for DALYs. The YLDs pattern was very different from the aforementioned three metrics of burden of diseases: all of the Asian countries led by India and China had lower rates than the other countries on the list; New Zealand had the highest YLD rate, although it was statistically comparable to other countries except for India and China. There may be many factors behind this, better health care and survival rates from cancers in the non-Asian countries might be contributory, which needs to be confirmed. The proportion of YLDs of the total DALYs indicated that the Asian countries had lower YLD contributions (China and India less than 3%, Korea 3.5% and Singapore 4.5%).

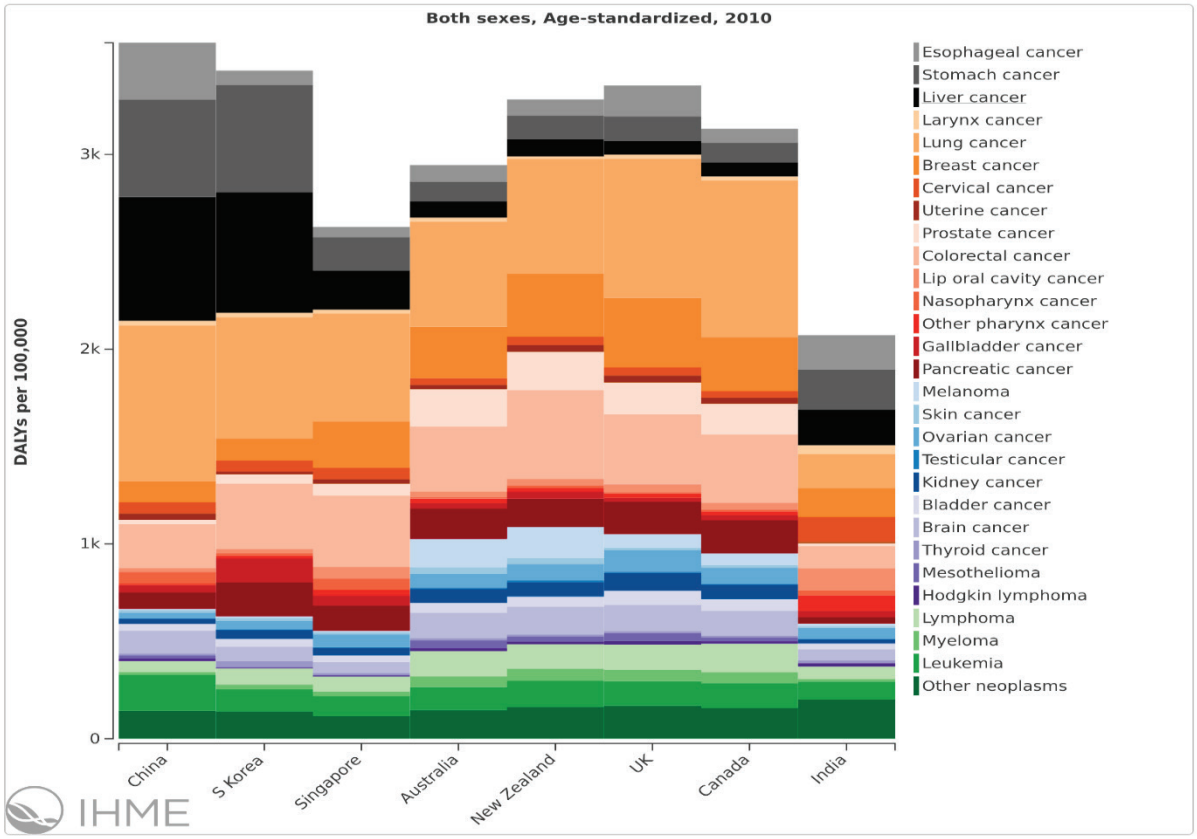


Figure 8 Age standardised DALYs for cancer, both sexes, GBD 2010

At DHB level, Waitemata Asians had 40%-60% of the YLL rate of all the residents of New Zealand (rate ratio: 40% for women and 57% for men). When the rate ratios are applied to the GBD 2010 YLL rates, this gives us 1,134 YLLs per 100,000 women and 1,937 per 100,000 men, the lowest of all the countries on the list. Indian and Other Asian women did better than Chinese women; for men, Chinese performed better than Indian followed by Other Asian.

In Auckland DHB, the rate ratios were roughly 50% for both women and men relative to the rate for all New Zealand residents. This is 1,392 years of life lost per 100,000 women and 1,728 per 100,000 men, when these ratios are applied to the New Zealand rate in GBD 2010. These rates are the lowest at country level. Within Asian sub-groups, Other Asian women did the best followed by Indian women; Indian men halved the rate for Chinese which still performed better than Other Asian men.

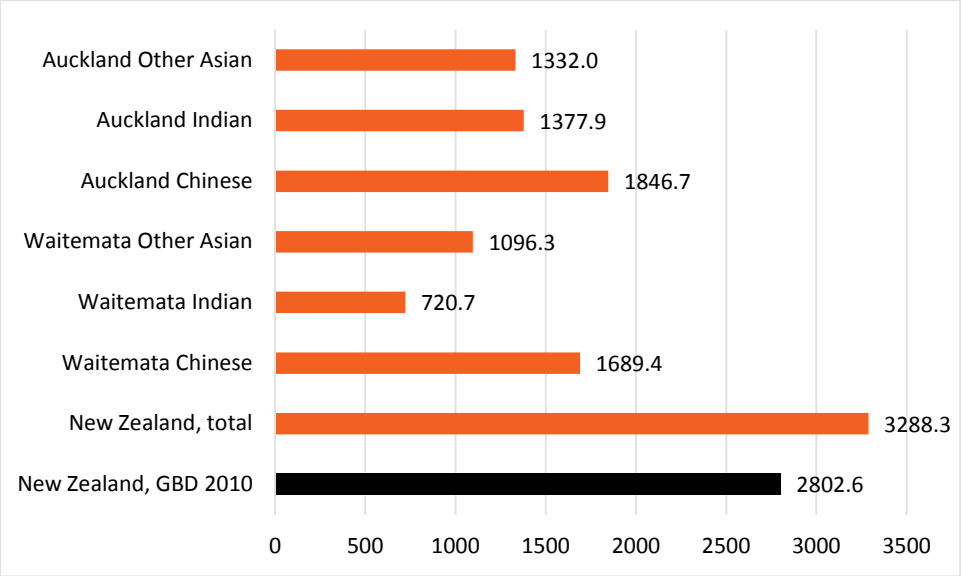


Figure 9 Age standardised YLLs, cancer, Asian-subgroups, female

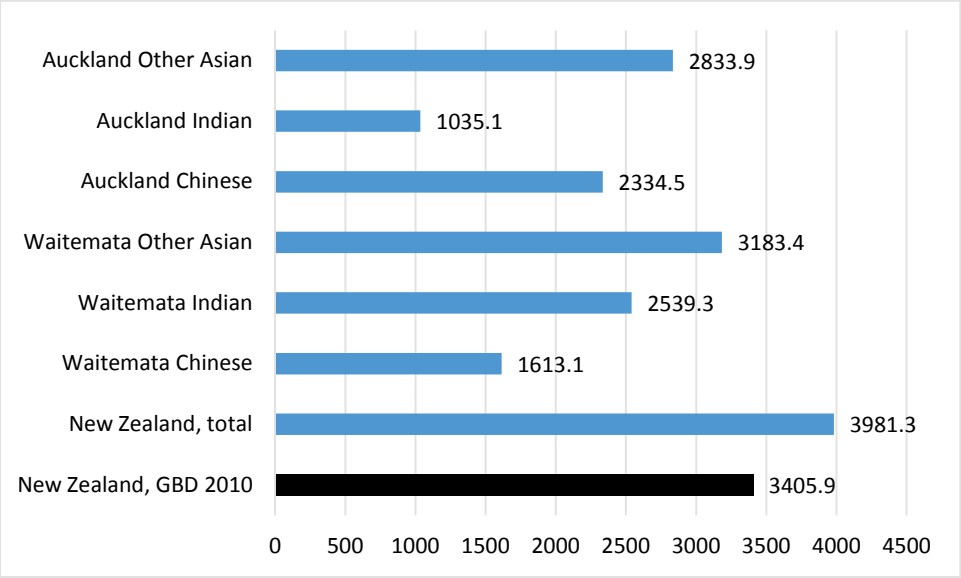


Figure 10 Age standardised YLLs, cancer, Asian-subgroups, male

Among people aged 20-69 years in England and Wales (1999-2003), people born in Asian countries such as India, Pakistan, Bangladesh and Sri Lanka all had lower than average mortality rates from cancer. A direct comparison of these mortality rates with the Asians of both DHBs is difficult due to the difference in time period, amongst other issues.

Interpretation and reflection

India had the lowest cancer DALYs, YLL and YLD rates of all the countries compared. It is not known whether the lower cancer rates for India could be at least partially explained by the higher 'competing risk' of other conditions such as communicable and cardiovascular diseases. In other words, the 'epidemiological transition' for India has not progressed to the extent of developed countries on the list including New Zealand. The lower contribution of cancer YLDs to the total cancer DALYs for Asian countries indicates that the 'disability transition' for cancers has not really taken place. The 'disability transition' is the change of a population's health loss from a fatal dominated pattern to one dominated by non-fatal outcomes (Ministry of Health, 2016).

Asians of both DHBs did much better in YLL rates than the New Zealand average or compared to the total populations of other countries on the list. The two DHBs will need to continue to work on decreasing mortality rates from conditions considered amenable, as cancers were the top leading cause of DALYs for New Zealand. The key focus areas for interventions include awareness raising and linking in with school-based programmes to promote HPV vaccination coverage, lifestyle programmes (smoke free/cessation, diet, and physical activity), cancer screening programmes (cervical, breast and bowel), ongoing schemes to offer free screening for eligible populations, and progress against the faster cancer treatment health target - 85% of patients have their first cancer treatment or other management within 62 days of being referred with a high suspicion of cancer and a need to be seen within two weeks.

We hope the incidence rate of cancers can be reduced, and early detection/early treatment proportions and survival rates can be improved with the aforementioned comprehensive measures in place. We also need to ensure that already vulnerable cancer patients have positive patient experiences of care when accessing and navigating the health system, and DHBs meet the 'Faster cancer treatment' health target. A key limitation currently for Asian monitoring is the lack of ethnic specific data reporting for the cancer health target.

Diabetes mellitus

Internationally	• New Zealand had lower rates of health loss due to diabetes compared with the majority of the comparator countries	
	• Asians of both DHBs had among the lowest rates of fatal health loss due to diabetes compared to the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had lower rates of fatal health loss due to diabetes than New Zealand	
	• The Indian population of Waitemata and Auckland had higher rates of fatal health loss from diabetes compared with other Asian ethnicities	

India and the Republic of Korea had the highest mortality rate from diabetes mellitus. New Zealand had a rate comparable to China, Singapore and Australia, while the UK did the best. The distribution of YLLs followed a similar pattern to the mortality rate. For DALYs, India had the highest rate followed by Singapore and the Republic of Korea (the latter two countries were not statistically higher than New Zealand) and the UK still did the best though not significantly better than New Zealand. In terms of YLDs, Singapore and China had the highest rate and Australia had the lowest rate but the differences were not significantly different from that of New Zealand.

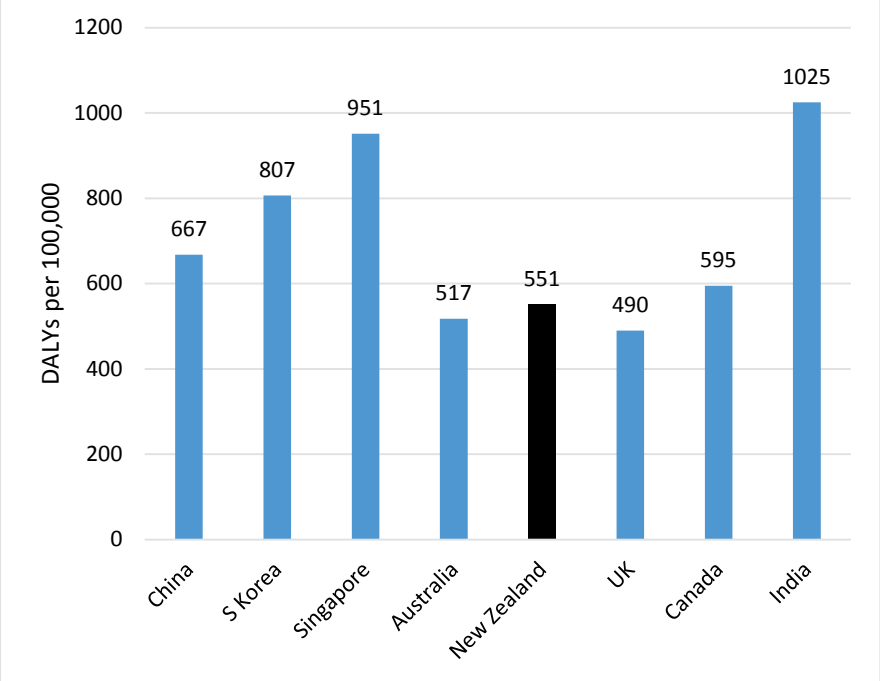


Figure 11 Age standardised DALYs for diabetes, both sexes, GBD 2010

At DHB level, the rescaled YLL rates were 108 per 100,000 for women and 159 per 100,000 for men in Waitemata DHB, which makes Waitemata Asian the second best after the UK for women and men. However, Indian women and men and Other Asian men followed India and Korea closely at the country level, while Chinese women and men scored the best against the UK.

Asians in Auckland DHB had the rescaled rates of 122 per 100,000 for women and 165 per 100,000 for men. The variations within Asian sub-groups in Auckland were very close to the pattern in Waitemata.

Table 13 Age standardised YLLs, diabetes, by sex, Asian sub-groups, Waitemata and Auckland DHBs, 2010-12

DHB	Asian sub-group	Female			Male		
		Rate	95% CI		Rate	95% CI	
Waitemata	Chinese	67.9	65.1	70.7	50.0	46.6	53.3
	Indian	481.6	466.5	496.6	494.7	479.6	509.7
	Other Asian	89.3	84.2	94.3	433.1	419.9	446.4
Auckland	Chinese	126.3	123.7	128.8	63.4	61.4	65.3
	Indian	297.6	290.0	305.1	570.7	559.4	582.1
	Other Asian	149.1	139.8	158.3	*	*	*

* data not to be used due to small number of events

Female Australians born in Asia had a slightly increased death rate from diabetes, in comparison to those born in Australia (SRR=1.12) (AIHW, 2014).

Interpretation and reflection

India had the highest DALYs, YLL and mortality rates but not the YLD rate, for diabetes of all the countries on the list. The UK had the lowest YLLs, mortality and DALYs rates but a slightly higher YLD rate than other 'Western' countries. This suggested a higher contribution of the non-fatal health loss to the total health loss due to diabetes. In fact, there needs to be further research to understand the survival factors in the UK and the health services treating diabetics.

Indians of both DHBs had relatively higher YLL rates at the country level. On one hand, the DHBs need to continue to promote healthy lifestyle messaging such as healthy diet and regular physical activity; on the other hand, early detection and good management can reduce premature mortality and improve quality of life. We need to work to address the barriers to Heart and Diabetes Checks (Appendix 6), review the suite of self-management programmes available in the community as part of the deliverables of the Diabetes Service Level Alliance, and ensure Asian and in particular Indians and Chinese are 'living well with diabetes' and receiving high quality and timely care.

Alzheimer's disease and other dementias

Internationally	• New Zealand had simliar rates of health loss due to Alzheimer's and other dementias compared with the majority of the comparator countries	
	• Asians of both DHBs had lower rates of fatal health loss from Alzheimer's than the majority of the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had lower rates of fatal health loss from Alzheimer's disease than New Zealand	

The Asian countries led by Singapore and the Republic of Korea had much lower mortality rates from Alzheimer's disease and other dementias, whereas the 'Western countries' had very similar rates including New Zealand, Australia, the UK and Canada. The distributions of DALYs and YLLs by country were very similar to that of the mortality rate. Regarding YLDs, Singapore, China and India had a similarly lower rate. New Zealand's rate was comparable to Australia, Canada, the UK and the Republic of Korea. The burden of disability on the health and social sector warrants further work, with New Zealand being one of the countries with the highest YLDs.

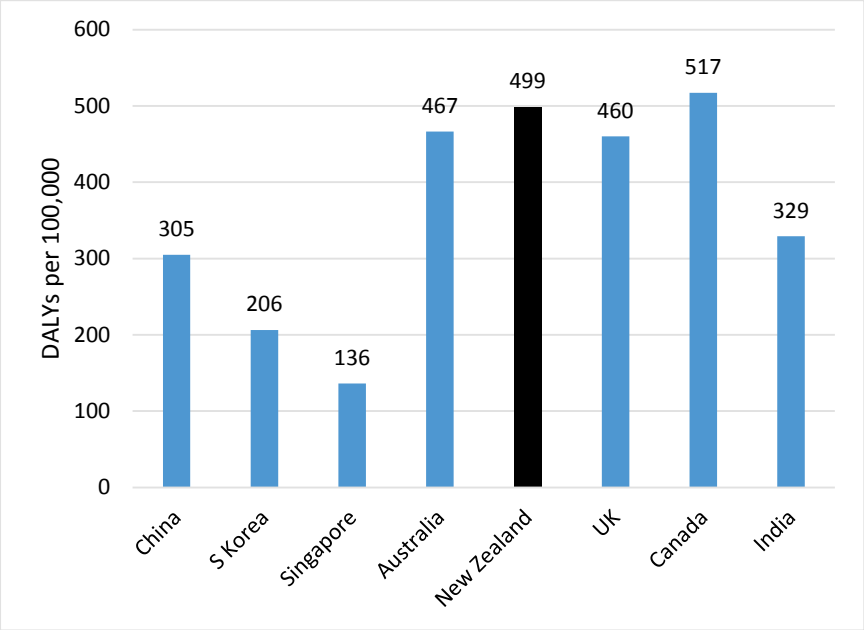


Figure 12 Age standardised DALYs for Alzheimer's disease, both sexes, GBD 2010

The rescaled Asian YLL rates for Alzheimer's disease were 167 per 100,000 women and 198 per 100,000 men in Waitemata DHB, which placed Asian women and men close to China and India but behind Singapore and the Republic of Korea, just like the mortality rate pattern. Other Asian men had a quite high rate of years of life lost, which is not likely to be fully explained by random variation. In Auckland DHB, the rescaled years of life lost rates were 145 and 158 per 100,000 for women and men respectively, placing Auckland Asian residents similar to Waitemata at the country level.

In Australia, it was also found that Asian born in Asian countries had a 40% lower mortality rate of dementia and Alzheimer's diseases, compared to people born in Australia (AIHW, 2014), which is similar to the rate ratios for Asians of both DHBs.

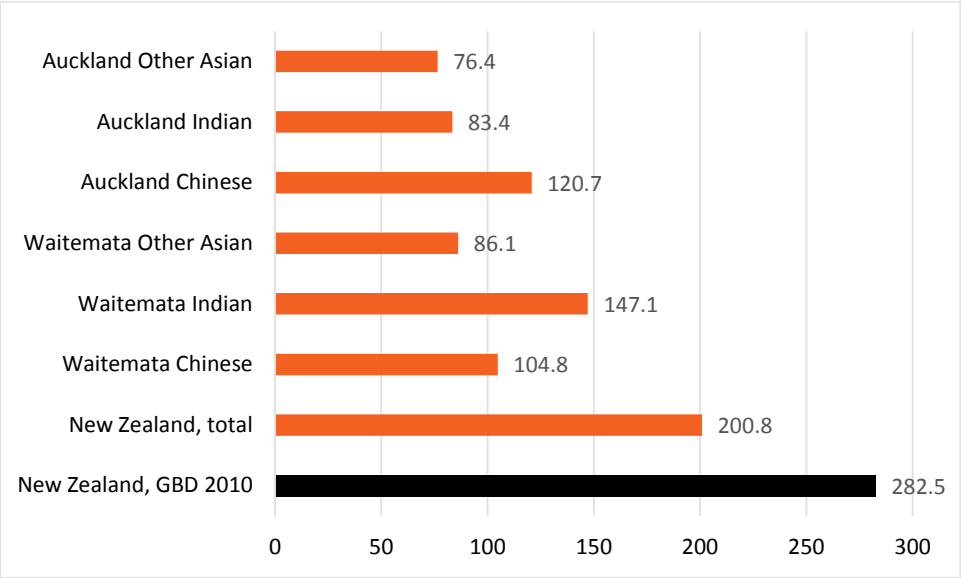


Figure 13 Age standardised YLLs, Alzheimer's diseases, Asian-subgroups, female

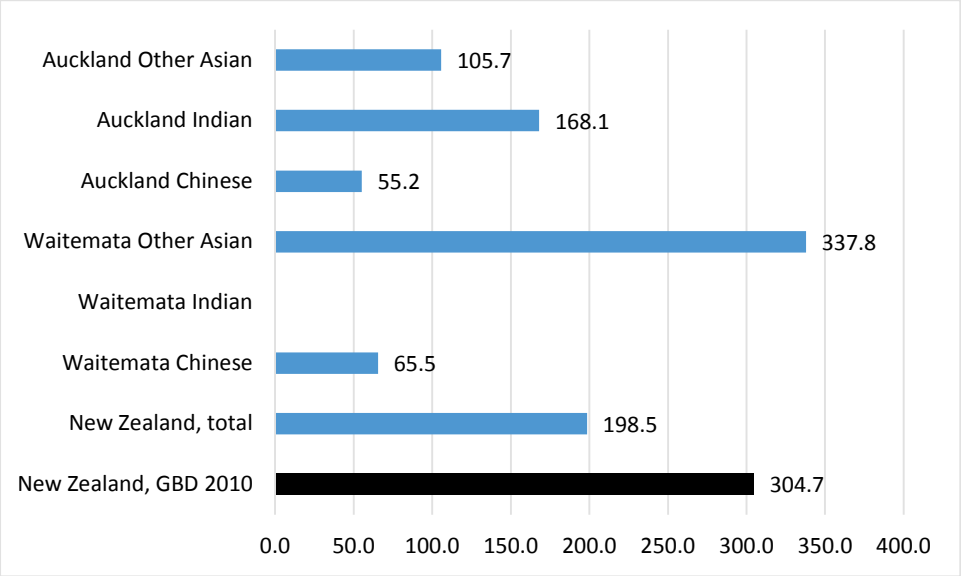


Figure 14 Age standardised YLLs, Alzheimer's diseases, Asian-subgroups, male

Interpretation and reflection

New Zealand had comparable dementia mortality rates, YLLs, YLDs and DALYs compared to other 'Western countries' on the list, while the Asian countries had lower rates for these measures. It is not known whether the lesser health loss due to dementia among Asian countries is related to under-identification/under-reporting, residual confounding due to age, genetic or cultural factors, or health and social services available to people living with dementia.

Asian peoples of both DHBs had a lower YLL rate in general, close to the Asian countries on the list. There needs to be further work on the relatively higher YLL rate for Other Asian in Waitemata DHB as it looks quite different from the general Asian pattern. The Other Asian group here was not homogenous as it contained 'South-east Asian' and 'Other Asian' at level 2 ethnicity.

The prevalence of dementia is closely related to age. With the ageing of the population including Asians, the concept of 'Healthy Ageing' and 'Ageing in Place' is particularly important. A high proportion of older Asian peoples, particularly Chinese and Koreans, do not have competent language capabilities, may not be enrolled with a family doctor (GP), are not familiar with the New Zealand health and disability system, availability of aged care support services, and may adopt cultural beliefs and values that involve concepts of 'filial piety' - to be cared for by loved ones at home. The DHBs' aim is to ensure older people experience independence and quality of life reflected in the delivery of quality services (including assessment) that are culturally responsive and appropriate to key segments of the Asian population who are living with dementia. This will involve working with the HoP and Primary Care teams (Auckland and Waitemata DHBs) to progress the roll-out of the Cognitive Impairment Pathway and supporting the HoP team (Auckland and Waitemata DHBs) in the review of Dementia Day Programmes for older adults. It may also include ensuring the availability of multilingual resources accessible in preferred languages.

To increase the cultural competency of the HoP workforce in Aged Residential Care a resource was developed by the University of Auckland "CALD Guidelines for Dementia Patients in Aged Residential Care" to complement their "CALD Older People Resource for Health Providers" available at Waitemata DHB's eCALD® services at www.eCALD.com (WDHB, eCALD, 2016).

Hepatitis and Tuberculosis

Internationally	• New Zealand had among the the lowest rates of health loss due to hepatitis and tuberculosis than the comparator countries	
	• Asians of both DHBs had lower rates of fatal health loss from hepatitis and tuberculosis than the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had lower rates of fatal health loss from tuberculosis than New Zealand	

These are two important communicable diseases internationally. Asian women in both DHBs had comparable hepatitis YLL rates to the other high income countries except for Australia (which was relatively high in comparison to other high income countries). Asian men in both DHBs would still be among the best at country level, if years of life lost were shared between Waitemata and Auckland Asian men to minimise the effects of random variation. Other Asian residents tended to have a higher rate of YLLs.

The Asians in Waitemata and Auckland DHBs had close to a zero tuberculosis mortality rate or YLL rate regardless of sex, which would rank them the first place at country level.

Interpretation and reflection

India and China had higher rates of fatal health loss due to hepatitis and India also had a much higher rate of fatal and non-fatal health loss due to tuberculosis, compared to other comparator countries. Asians of both DHBs had very low YLL rates due to hepatitis or tuberculosis partially attributable to the health check included in the immigration process. Vaccines are recommended where appropriate, particularly when travelling to overseas destination with a high prevalence of hepatitis. There are various types of hepatitis and their risk factors vary. Progressive work is currently being undertaken in New Zealand to reduce prevalence and burden of disease associated with hepatitis C including treatment using direct acting-antivirals (DAA) which have a cure rate of 90+ per cent and have few side effects. The Hepatitis Foundation of New Zealand is a key partner in the support of follow-up programmes and management for people with chronic hepatitis B and C to improve health outcomes for Asian populations.

Self-harm and interpersonal violence

Internationally	• New Zealand had higher rates of health loss due to intentional injury compared with many of the comparator countries, but was much lower than South Korea and India which had the highest rates	☹
	• Asians of both DHBs had lower rates of fatal health loss from intentional injury than the majority of the comparator countries	☺
Nationally	• Asians of Waitemata and Auckland DHBs had lower rates of fatal health loss from intentional injury than New Zealand average	☺

India and the Republic of Korea had the highest mortality rate from intentional injuries. New Zealand did equally well as other countries except for the UK, which had the lowest rate. However, New Zealand had a higher burden of total fatal and non-fatal health loss than China, Singapore and the UK. India and the Republic of Korea had the highest DALYs rate. The YLL rate followed a similar distribution by country to the DALYs. Canada surpassed India in the burden of YLDs with all other countries relatively close to each other. The higher rates of interpersonal violence contributed significantly to the heavy burden of the two countries, namely Canada (interpersonal violence: 16 per 100,000, 95% UI: 11, 21) and India (interpersonal violence: 16 per 100,000, 95% UI: 12, 21).

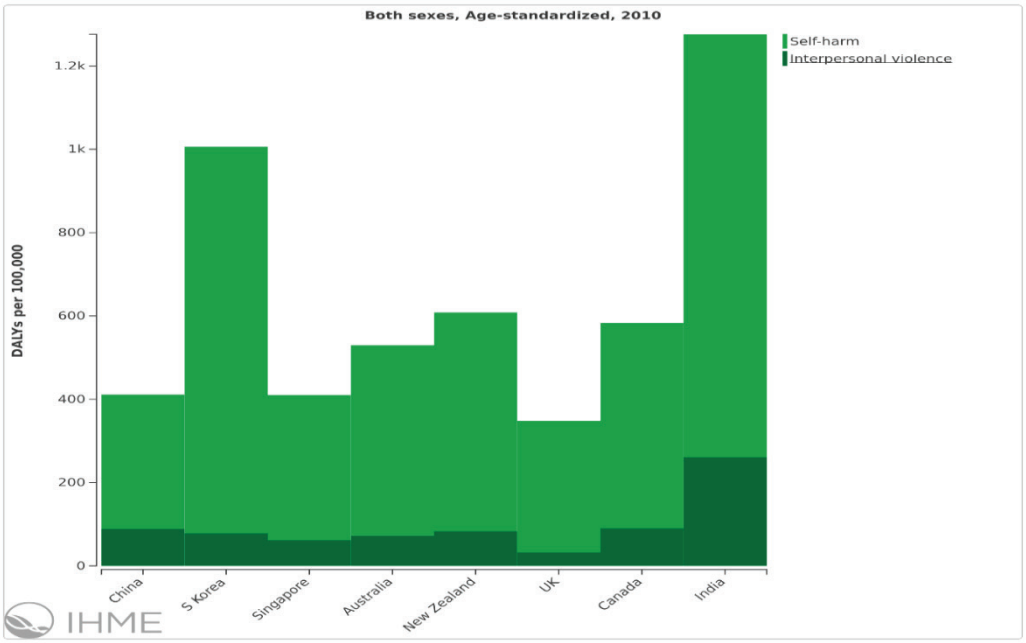


Figure 15 Age standardised DALYs for self-harm and interpersonal violence, both sexes, GBD 2010

Among youth, New Zealand had high mortality and DALYs rates for intentional injuries just behind India, particularly for males. This was true for both 15-19 and 20-24 year olds. The UK, China and Singapore performed better in these two age groups.

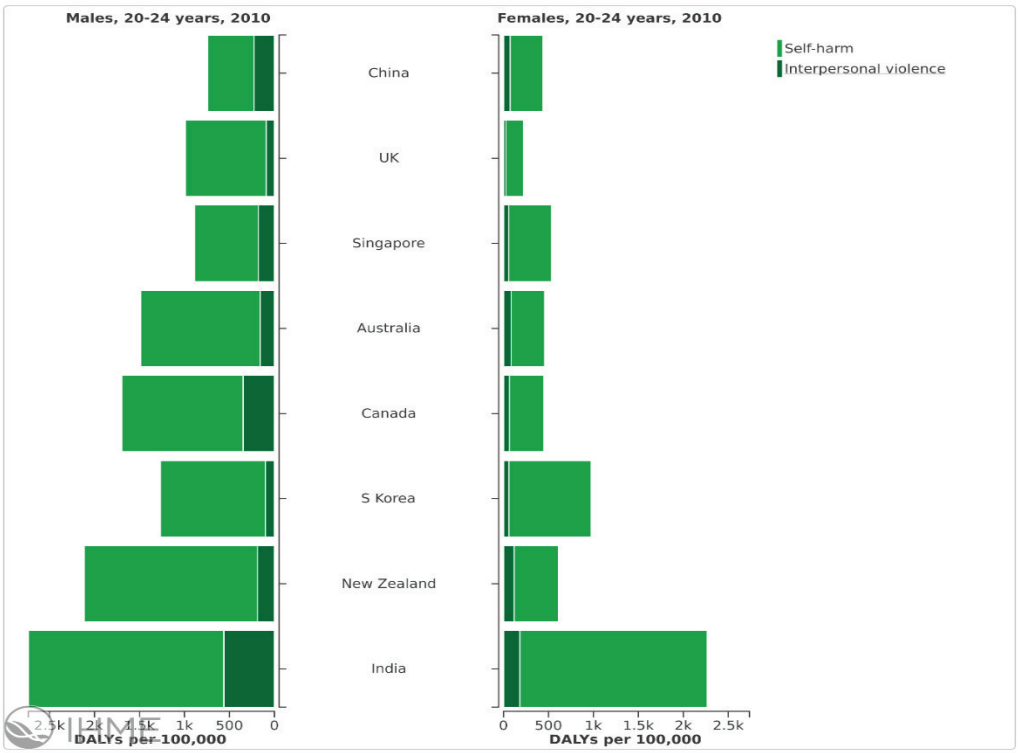


Figure 16 DALYs rate of self-harm and interpersonal violence, by sex, 20-24 yrs, GBD 2010

Asian residents in both DHBs performed best in mortality rates at the country level, that is, close to the UK and Australia for women and close to the UK and China for men, given their standardised rate ratio was 24%-65% of the New Zealand averages. As for the YLL rate, Asian residents in both DHBs were also likely to be among the top performers at the country level, given their standardised rate ratio was 24%-48% of the New Zealand averages. In Waitemata DHB the YLL rates were 120 per 100,000 women and 401 per 100,000 men. In Auckland DHB the YLL rates were 208 per 100,000 women and 264 per 100,000 men. No attempts were made to look at the variations by Asian sub-group due to the small numbers.

Interpretation and reflection

Of importance to New Zealand, are the higher mortality and DALYs rates for males aged 15-19 and 20-24 years due to intentional injuries. The two DHBs are committed to rolling out the 'Suicide Prevention and Postvention Action Plan 2015-17, following the "Prime Minister's Youth Mental Health Project".

Asian residents did very well in mortality and YLL rates. However, we should not under-estimate the non-fatal burden of health loss due to mental health conditions including depression for a largely migrant population. The prevalence of mental health conditions is potentially under-estimated in surveys due to issues such as stigma, lack of knowledge and awareness of services and how to access them, and cultural and language barriers (Appendix 6). Efforts that work towards "Rising to the Challenge" and reducing morbidity and mortality for people with mental illness include the Asian Mental Health Work Stream Plan as part of the Waitemata Stakeholders Network Strategic Plan 2015-2020, and delivery of Asian Mental Health Services in both DHBs alongside other NGO and community-based services.

Notwithstanding, some suicidal behaviour can be related to mental health conditions. However, often there are cultural factors at play that influence the Asian health belief system e.g. language, acculturation, family structure, intergenerational issues and religion which may be causative or risk factors for self-harm or intentional injury.

The localities Tamaki Mental Health & Wellbeing project (Auckland DHB) is an initiative that enabled opportunities to 'listen' to the voice of Burmese youth and adult populations about barriers to access and utilisation of mental health services. Issues identified were: language and access to interpreters; unsure of where to access information about the New Zealand health and disability system; choosing not to tell their family doctor (GP) about their 'problems' - rather keeping it to themselves; health literacy; cultural competency of health professionals; perceptions of being looked down upon by other staff; and poor experiences with services.

It is imperative that the System Level Measures in the metro Auckland DHBs work to increase youth access to and utilisation of youth appropriate health services, i.e. Young People Make Good Choices. Services should aim to deliver practical interventions that are multilingual, culturally sensitive and community focused to support segments of the Asian population who engage late and delay accessing services due to cultural issues such as stigma. Up-skilling a culturally competent mental health workforce is critical through initiatives such as Waitemata DHB's eCALD® services (WDHB, eCALD, 2016).

Maternal health

Internationally	• The maternal mortality ratio of New Zealand was not as low as that of many of the Western comparator countries and was nearly twice as high as that of the country with the lowest (Australia)	
Nationally	• Indian and Other Asian women in New Zealand had a higher maternal mortality ratio than New Zealand European	

Using the GBD 2013 definitions and estimation methods, the table below provides MMR with their 95% uncertainty intervals. India is clearly an outlier with much higher MMR than all other countries on the list. Singapore and Australia did the best, followed by the UK and Canada. New Zealand had a comparable rate to Korea and did better than China. However, the reduction of MMR over the 10 years between 2003 and 2013 saw New Zealand make only a 0.1% annualised reduction, while China and Singapore made a 13.2% and 6.8% annualised reduction in MMR respectively (Table 14).

According to the PMMRC report, 'there has been no statistically significant change in maternal mortality ratio in New Zealand since data collection by the PMMRC began in 2006' (Figure 17). The three-year average MMR for 2011–2013 was 16.8/100,000 maternities[5] (95% CI: 11.8, 23.8/100,000). The MMR for direct deaths alone for the years 2009–2013 was 4.8/100,000 maternities (95% CI: 2.9, 7.9/100,000), and for indirect deaths 11.8/100,000 maternities (95% CI: 8.6, 16.2/100,000) (PMMRC, 2015). New Zealand Indian and Other Asians had slightly higher MMRs compared to New Zealand

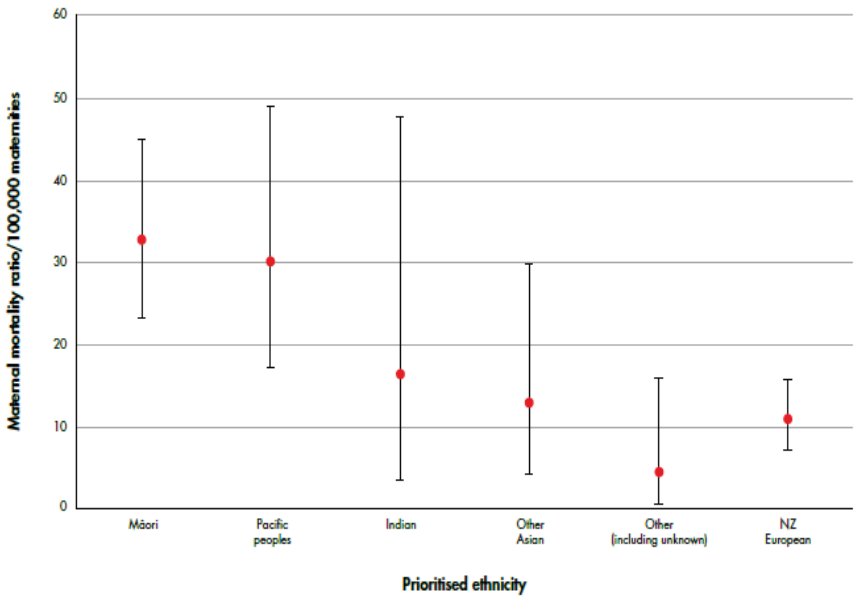
[5] Maternities are defined here as 'all births at 20 weeks or beyond or weighing 400g or more if gestation was unknown'.

European, but the differences were not significant. We assume the Asians in Waitemata and Auckland DHBs followed the national pattern as illustrated below and had rates comparable to other high income countries, as there were no calculations undertaken for MMR by ethnicity at DHB level due to very small numbers.

Table 14 Maternal mortality ratio (per 100,000 live births, 95% uncertainty level) by country, GBD 2013

Country	2003	2013	Annualised rate of change in MMR
Australia	5.1 (4.4, 6.0)	4.8 (3.7, 5.9)	-0.7%
Canada	9.2 (7.6, 10.7)	8.2 (6.3, 10.3)	-1.2%
China	64.1 (58.2, 70.1)	17.2 (14.0, 20.3)	-13.2%
India	382.0 (315.3, 472.8)	281.8 (207.0, 371.2)	-3.1%
New Zealand	**9.4 (7.9, 11.3)**	**9.3 (7.2, 12.1)**	**-0.1%**
Singapore	8.8 (7.2, 10.8)	4.5 (3.4, 5.8)	-6.8%
South Korea	15.4 (12.8, 19.0)	12.0 (8.7, 16.7)	-2.6%
UK	7.7 (7.0 to 8.3)	6.1 (5.2 to 6.9)	-2.4%

Source: Global, regional, and national levels and causes of maternal mortality during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013, Kassebaum, Nicholas J et al. The Lancet, Volume 384, Issue 9947, 980-1004



Source: PMMRC. 2015. Ninth Annual Report of the Perinatal and Maternal Mortality Review Committee: Reporting mortality 2013. Wellington: Health Quality & Safety Commission.

Figure 17 Maternal mortality ratio (per 100,000 maternities) by ethnicity, New Zealand

The 'Maternal deaths in Australia 2008–2012' (Humphrey et al., 2015) report showed that MMR was 6.0 maternal deaths per 100,000 women giving birth for women born in Australia and 6.3 for women born in other countries. There was no data for women born in Asia. The numbers in this report were higher than the figures in GBD 2013 (4.8 per 100,000 live births), acknowledging the difference in estimation methods (women giving birth vs. live births as the denominator) and years for comparisons (2008-12 vs. 2013). In the UK, neither Indian nor Chinese stood out in terms of

maternal deaths or severe maternal morbidity reports or studies, which may suggest their risk of maternal death is comparable to the UK average. However, best estimation is that Asian as a whole may still present a moderately higher level of maternal mortality and severe maternal morbidity in the UK.

Interpretation and reflection

The findings highlight that greater improvement is needed in maternal mortality ratio for New Zealand, being placed last among the 'Western countries' on the list and having the smallest annualised reduction in MMR in the past ten years since 2003. Efforts will need to be made to reduce ethnic differences in health outcomes such as the number of Māori, Pacific and Indian maternal deaths - covering the whole spectrum of maternity care and support from early pregnancy, delivery through to post-natal care.

Asian online respondents (n=95) of the Waitemata DHB Primary Birthing Facility Consultation 2016 were fairly equally in favour of all three Waitemata DHB operated primary birthing units which were (a) In community, DHB operated, (b) On hospital grounds, in a separate building, and (c) In hospital, near the maternity unit. However Asian groups who attended the forums (n=52) favoured (a) On hospital grounds, in a separate building, and (b) In community, DHB operated. Asian staff preferred either a community-based, DHB operated or hospital-based facility near the maternity unit.

Top four features identified as essential for Primary Birthing Units (PBU) were:

1. Breastfeeding support/advice
2. Family friendly
3. Partners to stay overnight
4. Easy to get to by car

Asian groups were most likely to rate having community health facilities nearby as essential for PBUs.

Waitemata DHB's eCALD® services have developed the "Maternal Health for CALD Women: Resource for Health Providers working with Asian, Middle Eastern & African women" (WDHB, eCALD, 2016). This resource is the first of its kind for maternal health service-providers. It will help services and practitioners develop the cultural competencies to work with Asian women and their families during their pregnancy and birth. It contains research materials and provides guidance, essential culture-specific knowledge, cultural assessment tools and case scenarios. The resource complements the CALD Cultural Competency Training Programme, and is available on the eCALD® services website at www.eCALD.com.

Infant and child health

Internationally	• New Zealand had an infant mortality rate that was simliar to the majorty of the comparator countries, but over twice as high as the country with the lowest (China) • Auckland and Waitemata DHBs had a combined infant mortality rate among the lowest when compared with the comparator countries	 
Nationally	• Asians of Waitemata and Auckland DHBs combined had a lower infant mortality rate than New Zealand	

Three indicators are presented in this section: low birth weight, infant and child mortality.

According to the World Bank, India had a much higher rate of low birth weight than all other countries on the list. China had the lowest rate of low birth weight and New Zealand was comparable to all other countries in the middle range.

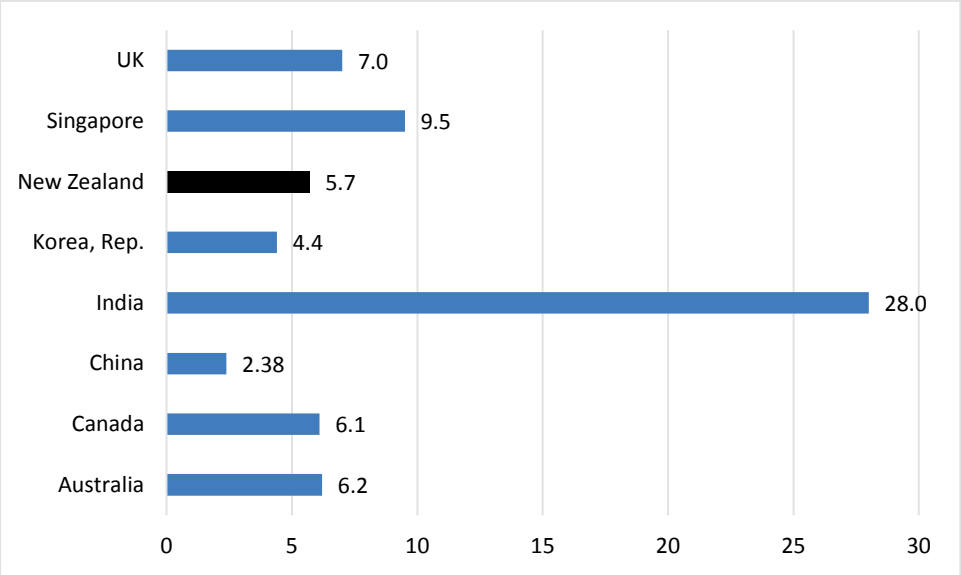


Figure 18 Low birth weight rate (%) by country, World Bank

The low birth weight rate was 6.2% in 2012 according to the Ministry of Health (Ministry of Health, 2015), and it has been stable at around 6.0% for the years since 2008. These rates were very close to the World Bank (The World Bank, 2016) figures. Nationwide, Asian had higher rates of low birth weight than European/Other or the total population. The low birth weight rates were respectively 6.5% and 8.3% for Waitemata and Auckland DHBs over the years 2010-2012 combined, which matched Waitemata Asian with the UK (the third highest at country level) and Auckland Asian to one close to Singapore (the second highest). In both DHBs, Indian had the highest rates of all three Asian sub-groups (8.3% in Waitemata DHB and 12.2% in Auckland DHB), whereas Chinese did the best at 5.2%-5.8%. Other Asian sat at slightly more than 7% in both DHBs.

According to the most recent report produced by the UN IGME (UN IGME, 2015), Southern Asia is another region besides Sub-Saharan Africa where increased effort is urgently required to reduce child mortality.

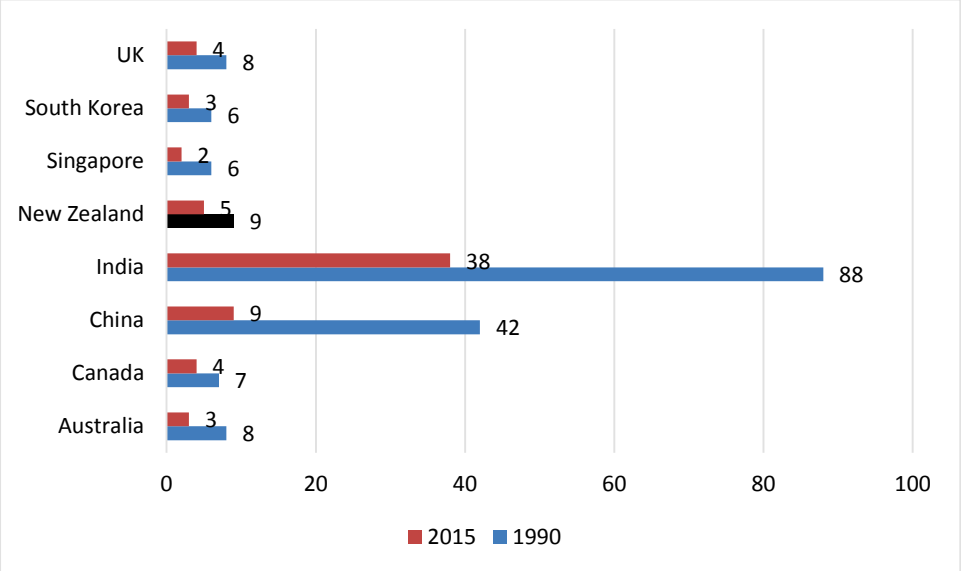
International collaboration has occurred to agree on a new framework, the Sustainable Development Goals (SDGs), with the end of the MDG. The SDG target - an under-five mortality rate of 25 or fewer deaths per 1,000 - has been achieved by all the countries except India. The under-five mortality rate target of the high-income countries, 6.8 deaths per 1,000 live births by 2030, has also been achieved by all the high income countries on the list. China is not far away from the 2030 SDG target although it is a middle income country. Actually, between 1990 and 2015, China had made the fastest reduction in under-five mortality rates (annualised rate of reduction, ARR: 6.5%), followed by Singapore (ARR, 4.2%) and India (ARR 3.9%). In 2015, New Zealand had an under-five mortality rate of 6 per 1000 live births, placing us last of the high income countries on the list, although the differences were not always significant.

Table 15 Under-five mortality rate (U5MR, per 1000 live births) by country, UN

Country	2000 (90% UI)	2015 (90% UI)	Annualised rate of reduction (ARR, %) 1990-2015	Rank by ARR
Australia	6 (6, 6)	4 (4, 4)	3.5	4
Canada	6 (6, 6)	5 (4, 6)	2.1	8
China	37 (35, 39)	11 (9, 13)	6.5	1
India	91 (88, 95)	48 (42, 53)	3.9	3
New Zealand	7 (7, 8)	6 (5, 7)	2.7	7
Singapore	4 (4, 4)	3 (2, 3)	4.2	2
South Korea*	6 (6, 6)	3 (3, 4)	2.9	6
UK	7 (6, 7)	4 (4, 5)	3.2	5

Data source: Levels and trend in Child Mortality - Report 2015: page 18-25

In 2015, New Zealand had an infant mortality rate of 5 per 1000 live births, which was largely comparable to all other countries on the list except India, with more than 7 times the rate of New Zealand. Singapore had the lowest infant mortality rate at 2 per 1000 live births and was the second fastest country at reducing the rate between 1990 and 2015, with China being the top performer.



Data source: Levels and trend in Child Mortality - Report 2015: page 18-25

Figure 19 Infant mortality rate (per 1000 live births) by country, the United Nations

In the 2013 birth cohort of the UK, based on linked data, Indian and All Others (including Chinese and other groups) had an infant mortality rate comparable to the average in England and Wales (though slightly higher than White British). Pakistani infants still had the highest mortality rate of all ethnic groups, children of Bangladeshi origin showed a rate higher than White British; however, it is not known whether this is due to random variation over time or whether it is a real trend potentially explained by social or clinical factors.

For relatively small populations, random variation in the number of deaths tends to have larger effects than for big populations. For this reason, deaths for three years (2010-12) were aggregated to calculate the two rates. The aggregated infant mortality rates were respectively 0.2 and 4.0 per 1000 live births for Waitemata and Auckland DHBs' Asian infants. This has put Waitemata Asian infant survival at the top place at country level. For under five mortality rates, Waitemata stood at 0.2 per 1000 live births again and it was 4.2 per 1000 live births for Auckland DHB. Again, Waitemata Asian infant survival was the best at country level and Auckland Asians were comparable to all other high income countries. The combined Asian infant mortality rate for Waitemata and Auckland DHBs for the years 2010-12 was 2.2 per 1000 live births, which looks to be much better than the Asian rates in England and Wales in 2013. No estimates were made for Asian sub-groups due to the very small number of deaths, particularly for Waitemata DHB.

Table 16 Infant mortality rate and under-five mortality rate, Waitemata and Auckland DHBs, 2010-12

Death rate	DHB	Ethnicity	Deaths	Live births	Rate (per 1000)
Infant mortality rate	**Auckland**	Asian	21	5,282	4.0
		European/Other	26	7,867	3.3
		Māori	13	2,756	4.7
		Pacific	29	3,875	7.5
	Waitemata	Asian	1	4,804	0.2
		European/Other	37	11,480	3.2
		Māori	22	4,785	4.6
		Pacific	12	2,870	4.2
U5MR	**Auckland**	Asian	22	5,282	4.2
		European/Other	29	7,867	3.7
		Māori	18	2,756	6.5
		Pacific	35	3,875	9.0
	Waitemata	Asian	1	4,804	0.2
		European/Other	49	11,480	4.3
		Māori	28	4,785	5.9
		Pacific	15	2,870	5.2

Interpretation and reflection

New Zealand performed very well in terms of the low birth weight rate and was the best of the 'Western countries' compared. However, Indians had a higher risk of having low birth weight new-borns of the three Asian sub-groups in both DHBs, which resulted in an increased rate for Asians as a whole at DHB and national levels. The relatively higher rate of low birth weight in Singapore may also be associated with a high Indian population make-up. Low birth weight is a risk factor for a

variety of short-term and chronic conditions at a later stage in life including obesity, diabetes and CVD. This does not seem to be a prioritised area at this stage, but research and health promotion targeting high-risk groups such as Indians should be encouraged, in the context of reducing childhood obesity and raising healthy kids.

New Zealand has already achieved the under-five mortality SDG target of 6.8 deaths per 1,000 live births, but was placed the last of the high income countries on the list, suggesting we have room to improve. New Zealand rates similarly for infant mortality to that of under-five mortality. Ongoing efforts are required to reduce risk factors for sudden infant deaths such as smoking and bed-sharing, and increasing greater access to universal healthcare services for newborns less than three months, particularly in Māori and Pacific children. Waitemata Asians had the best under-five and infant mortality rates at country level, which need to be maintained. This can be achieved by ongoing efforts to increase the proportion of Asian newborn infants enrolled with a PHO, and multi-enrolment with Well Child Tamariki Ora providers, Oral Health and newborn hearing screening services to meet the 98% target (Auckland and Waitemata DHBs).

Risk factors and prevention

Waitemata and Auckland DHBs encourage their residents to take responsibility for their own health and that of their family/whānau by making healthy lifestyle choices and engaging in prevention and early detection to increase health outcomes, reduce potentially avoidable hospitalisations and amenable mortality. Strategies to achieve this include immunisation programmes, access to primary care services and cancer screening programmes. Breast screening programmes can reduce mortality rates from breast cancer though it does not reduce the incidence rate. For ease of reading, both cervical and breast screening programmes are included in this section.

Healthy lifestyles

Internationally	• New Zealand had among the highest rates of fatal health loss due to tobcaoo smoking when compared to the comparator countries	
	• New Zealand had smoking rates similar to the majority of the comparator countries	
	• Asians of both DHBs had lower smoking rates than the comparator countries	
	• New Zealand had a higher mortality rate attributable to obesity compared with the comparator countries	
	• The obesity rates for the Asians of both DHBs were higher than Asian comparator countries	
	• Asians of both DHBs were likely to be the least physically active when compared to the comparator countries	
Nationally	• Asians of Waitemata and Auckland DHBs had lower smoking rates than New Zealand	
	• Asians of Waitemata and Auckland DHBs had lower obesity rates than New Zealand	
	• Asians of Waitemata and Auckland DHBs, particularly Waitemata had lower prevalence rates of physical activity than New Zealand	

In this part, a snapshot of key findings from the Asian Health in Aotearoa in 2011-2013: Trends since 2002-2003 and 2006-2007 report (Scragg, 2016) are provided, along with age standardised mortality rates and DALYs attributable to the joint effects of all the risk factors benchmarked internationally.

Findings of risk factors from the Asian Health in Aotearoa

The report by Scragg (Scragg, 2016) provides an overview of the time trends in the health status of Asian participants interviewed in recent New Zealand Health Surveys. The report provides comparisons between the 2011/13 survey and two previous surveys: the 2002/03 and 2006/07. The health status of the main Asian groups – South Asian, Chinese and Other Asian have been compared

with three other main ethnic groups – Māori, Pacific, and European & Other to identify any trends amongst the Asian communities over these time periods. The key areas for comparison include:

Lifestyle (nutrition, physical activity and TV, tobacco smoking, alcohol, gambling, acculturation to lifestyle)

- All Asian ethnicities, along with Māori and Pacific, had lower proportions of people eating the recommended daily number of serves of fruit and vegetables (≥5) than Europeans
- Adults from all three Asian ethnic groups, along with Māori and Pacific, were less likely to be physically active than European & Other
- The proportion of alcohol drinkers in the Asian community (combined) increased from 2002-03 to 2006-07, but remained unchanged from then to 2011-13.

Chronic disease

- Eczema was more common in children of all three Asian ethnicities (17% combined), and also in Māori (21%) and Pacific (20%) children, compared to European & Other (13%).
- South Asian people had increased age-and sex-adjusted prevalence of being on treatment for hypertension and for high cholesterol, compared to European & Other
- The age- and sex-adjusted prevalence of being on treatment for diabetes was increased five- to six-fold in South Asian and Pacific, and three-fold in Māori and two-fold in Other Asian, compared with European & Other
- Self-reported depression was less common in Chinese (1%), South Asian (3%), Other Asian (4%) and Pacific (2%), compared to Māori (6%) and European & Other (7%).

The executive summary from Asian Health in Aotearoa in 2011-2013: Trends since 2002-2003 and 2006-2007 is available in the Asian health benchmarking technical report.

Risk factors benchmarked internationally

Australia and Canada had the best age standardised mortality rate and DALYs attributable to the joint effects of all the risk factors considered, followed by New Zealand, while India and China had the highest burden of deaths and DALYs. Singapore did slightly better in standardised rates of years of life lost. For years lived with disability, China and the Republic of Korea had the lowest burden, while India and the UK had the highest health loss due to disability attributable to the risk factors.

Tobacco smoking

China and the UK had the highest mortality rate attributable to tobacco smoking while Australia and Singapore did the best and New Zealand ranked the third best. India surpassed the UK and China for DALYs whereas New Zealand still stood in the middle. The distribution of years of life lost attributable to tobacco smoking was very similar to the pattern of DALYs. However, the distribution of YLD showed a very different picture to the other three metrics, all the Asian countries had relatively lower burdens than the 'Western' countries including New Zealand. This may actually suggest better survival and treatment or better health services and community support, but is worth further investigation. There were differences in the burden of disease due to tobacco smoking by sex.

According to the WHO report (WHO, 2015), New Zealand's age standardised rate of daily smoking was 15.5% (95% credible interval: 13% - 18%) in 2013. New Zealand sat in the middle for both sexes. However, New Zealand was the second highest following the UK for women; for men, the Republic of Korea and China had very high rates just as they did for current tobacco smoking. New Zealand had comparable rates to all other countries except Korea and China.

Table 17 Age standardised prevalence rate of daily smoking, by country and sex, 15+ years, 2013

Country	**Female**			**Male**		
	Rate	95% credible interval		Rate	95% credible interval	
Australia	12.4	9.9	14.7	15.1	12.3	18.0
Canada	9.9	8.2	11.6	13.9	11.5	16.4
China	1.6	1.3	2.1	42.0	33.6	51.6
India	1.9	1.5	2.4	19.1	14.7	25.3
New Zealand	14.7	11.8	17.5	16.4	13.4	19.2
Republic of Korea	3.5	2.0	5.5	48.5	32.8	66.1
Singapore	3.6	2.6	4.8	23.1	17.1	28.5
UK	19.5	14.9	25.1	21.1	15.9	27.0

A study was undertaken in Canada using the three cross-sectional cycles (for 2000, 2003 and 2005) of the Canadian Community Health Survey of people aged 12 years and older. The surveys employed self-reported questionnaires (Richard Liu, 2010). After adjustment for sociodemographic characteristics, people from most visible minorities including Chinese (adjusted odds ratio [OR] 0.35, 95% CI: 0.28-0.43), Korean/Japanese (adjusted OR 0.67, 95% CI: 0.49-0.72) and South Asian (adjusted OR 0.36, 95% CI: 0.29-0.44), were less likely to smoke, in comparison to Caucasian.

The age standardised rate of regular smoking of all adult New Zealanders from Census 2013 was very comparable to the daily smoking rates of the WHO report, which facilitates direct comparisons between the two DHBs and the countries of interest. For both Waitemata and Auckland DHBs, Asians had lower rates than the New Zealand average for women and men combined. There were variations by sex and Asian sub-group. Asian women had a very low rate of regular smoking (1.5% - 4.0%), while Asian men (Chinese and Other Asian) had a rate comparable or even higher than their European/Other counterparts in both DHBs. Nevertheless, internationally, Asian residents of both DHBs seemed still to have or be close to having the lowest rate of tobacco smoking.

Table 18 Age standardised prevalence rate of regular smokers, Asian sub-groups, 15+ yrs, by sex, 2013

DHB	Ethnicity	Female			Male		
		Rate	95% confidence interval		Rate	95% confidence interval	
Auckland	Māori	26.7%	26.4%	26.9%	24.8%	24.5%	25.1%
	Pacific	17.5%	17.3%	17.7%	26.1%	25.9%	26.4%
	European /Other	8.2%	8.1%	8.2%	11.3%	11.2%	11.4%
	Chinese	2.4%	2.3%	2.4%	13.8%	13.7%	14.0%
	Indian	1.5%	1.4%	1.5%	8.9%	8.7%	9.0%
	Other Asian	4.0%	3.9%	4.1%	12.9%	12.7%	13.1%
Waitemata	Māori	28.0%	27.7%	28.2%	24.8%	24.6%	25.1%
	Pacific	16.6%	16.4%	16.9%	23.3%	23.0%	23.6%
	European /Other	10.2%	10.2%	10.3%	12.8%	12.8%	12.9%
	Chinese	2.0%	1.9%	2.0%	15.2%	15.0%	15.4%
	Indian	1.6%	1.5%	1.7%	9.5%	9.3%	9.7%
	Other Asian	2.9%	2.8%	3.0%	13.3%	13.1%	13.5%

High Body Mass Index

The WHO defines overweight as a BMI of ≥25 and obesity as a BMI of ≥30. Worldwide, the overweight rate was 39% of adults aged 18 years and over and 13% for obesity. In addition, overweight and obesity is associated with greater morbidity and mortality than underweight in most of the world's population. There is good evidence linking obesity and overweight to many non-communicable conditions, including cardiovascular diseases (mainly heart disease and stroke), diabetes, musculoskeletal disorders and some cancers (endometrial, breast, and colon).

Responding to the epidemic of obesity, the WHO Global Strategy on Diet, Physical Activity and Health was adopted by the World Health Assembly in 2004. In addition, the Commission on Ending Childhood Obesity (ECHO) presented its final report 'Ending Childhood Obesity' in January 2016 to the WHO Director-General to address the alarming levels of world-wide childhood obesity and overweight (WHO, 2016).

New Zealand had the highest mortality rate attributable to high BMI (60.8 per 100,000, 95% UI: 52-71) of all the countries on the list for women and men combined, followed by Australia and the UK, while the Republic of Korea and China had the lowest rate of high BMI. For DALYs, the UK surpassed New Zealand, while Korea and China were still the lowest. India became the country with the highest YLL rate, followed by New Zealand, with Korea still having the lowest rate. The UK had the highest burden of years lived with disability attributable to high BMI, followed by Singapore; New Zealand had a rate comparable to Australia and Canada. The remaining Asian countries, namely India, Korea and China had lower rates of YLDs attributable to high BMI. Generally, men had a higher burden of health loss attributable to high BMI than women for all the four metrics.

There is some level of evidence suggesting an alternate set of cut-off criteria for obesity and overweight for Asians based on measured body fat. In Singapore, because at any given BMI, Asians,

including Singaporeans, generally have a higher percentage of body fat than Caucasians, the BMI cut-off levels for Singaporeans have been revised such that a BMI 23 kg/m^2 or higher marks a moderate increase in risk while a BMI 27.5 kg/m^2 or more represents high-risk for diabetes and cardiovascular diseases. More research is required to address accurate measures of body fat for Asians, as they are more likely to be 'TOFI' ('thin outside and fat inside') (Stewart, 2015). If alternative criteria become internationally acceptable, the burden of disease will be heavier than it is now for Asian countries.

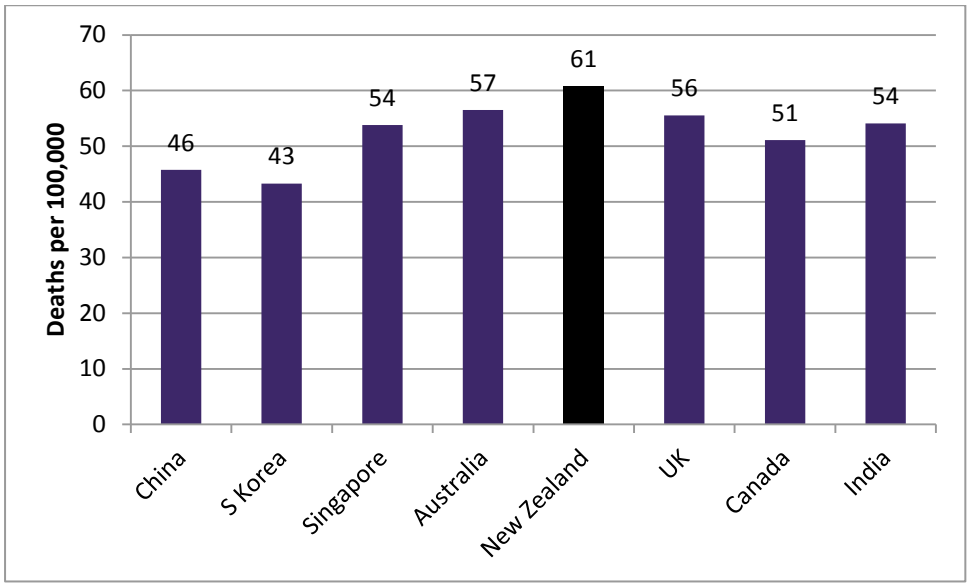


Figure 20 Age standardised mortality rate attributable to high BMI, by country, both sexes, GBD 2010

The Global Health Observatory data repository of the WHO provides estimates of obesity by country and WHO region (WHO, 2016). There were increases in the age standardised prevalence rate of obesity (18+ years) between 2010 and 2014 for all the countries on the list (though the differences did not always seem to be statistically significant). The Asian countries had much lower obesity rates (defined as equal to or greater than 30 kg/m^2) than the four non-Asian countries, led by New Zealand (both sexes, 29.2%, 95% CI: 25%-33%). Women had higher prevalence rates of obesity than men for all the countries on the list. By sex, New Zealand still ranked the top for women, but was overtaken by Australia for men in 2014.

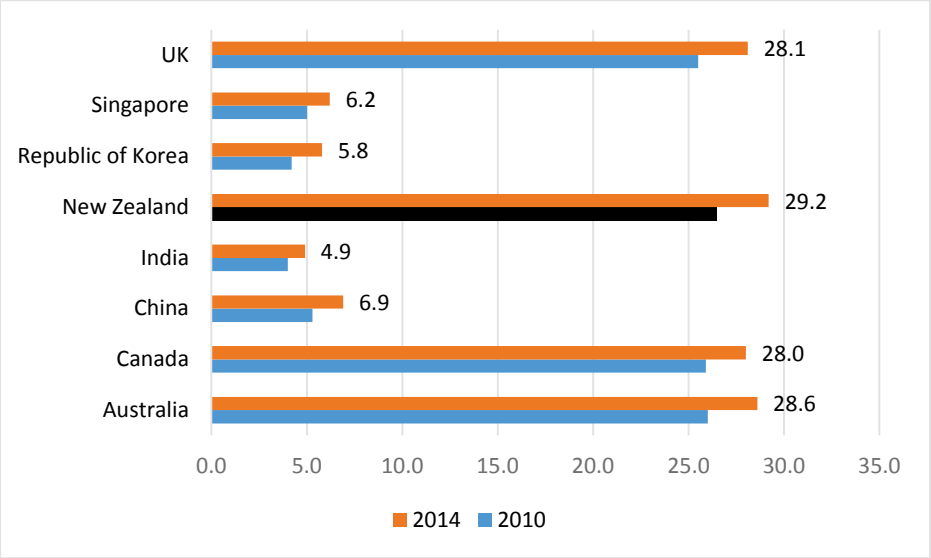


Figure 21 Age standardised prevalence of obesity, 18+ years, by country, both sexes, WHO

Table 19 Age standardised prevalence of obesity, 18+ years, by country and sex, WHO

Country	2014 (95% CI)		2010 (95% CI)	
	Female	Male	Female	Male
Australia	28.8 (23.3-34.5)	28.4 (22.8-34.3)	26.3 (22.4-30.3)	25.6 (21.8-29.7)
Canada	29.1 (23.1-35.4)	26.8 (20.8-33.4)	27.2 (22.8-31.7)	24.6 (20.3-29.1)
China	8.0 (4.7-12.3)	5.9 (3.2-9.3)	6.4 (4.2-8.9)	4.3 (2.7-6.3)
India	6.7 (4.4-9.6)	3.2 (1.8-5.1)	5.6 (4.1-7.4)	2.5 (1.6-3.7)
New Zealand	30.8 (25.2-36.6)	27.7 (22.1-33.7)	28.1 (24-32.6)	24.8 (20.8-29.2)
Republic of Korea	6.7 (3.9-10.5)	4.8 (2.6-7.7)	4.9 (3.3-7)	3.5 (2.2-5.1)
Singapore	6.8 (4.3-10.1)	5.7 (3.4-8.7)	5.6 (3.8-7.9)	4.4 (2.9-6.4)
UK	29.2 (24.4-34.2)	26.9 (22.1-32.2)	26.8 (23.6-30.2)	24.1 (21-27.5)

The aggregated data of NZHS 2011/12 and 2012/13 from the Ministry of Health (Ministry of Health, 2016) indicated that Asian people in both DHBs had lower rates than the New Zealand average), which was comparable to the WHO estimate in 2014. In the international context, the Asian rates of obesity in both DHBs were higher than that of the Asian countries although there seemed to be some overlaps in the confidence intervals. Using ethnic specific definitions of obesity, it was found that the prevalence of obesity was higher in all three Asian sub-groups (aside from Chinese women) than European/Other, using NZHS 2011-13 data (Scragg, 2016).

Table 20 Age standardised prevalence of obesity, 18+ years, both sexes, NZHS 2011-13

DHB	Asian		European/Other		All	
	Rate	(95% CI)	Rate	(95% CI)	Rate	(95% CI)
Waitemata	14.1	(9.4-19.9)	22.0	(19.1-25.2)	23.4	(20.5-26.6)
Auckland	11.6	(7.8-16.3)	18.5	(15.4-22.0)	21.5	(18.9-24.2)
Counties-Manukau	20.7	(16.3-25.7)	31.8	(28.3-35.6)	40.5	(36.7-44.4)
All 3 Auckland DHBs	15.3	(12.7-18.2)	23.0	(20.9-25.2)	27.8	(25.6-30.0)
New Zealand	14.5	(12.6-16.7)	26.0	(25.0-27.1)	29.1	(28.3-29.9)

Physical inactivity and low level of physical activity

WHO defines physical activity as 'any bodily movement produced by skeletal muscles that requires energy expenditure – including activities undertaken while working, playing, carrying out household chores, travelling, and engaging in recreational pursuits' (WHO, 2016). Insufficient physical activity is a key risk factor for many non-communicable diseases including cardiovascular diseases, cancer and diabetes. There were dedicated efforts made by WHO and its member states on primary prevention of NCDs through physical activity - the 'Global Recommendations on Physical Activity for Health', was published by WHO in 2010. In addition, physical activity was part of the "Global Strategy on Diet, Physical Activity and Health", which was adopted by the World Health Assembly in 2004. The WHO recommends (WHO, 2016):

Table 21 WHO recommendations of physical activity

Children and adolescents aged 5-17 years	Should do at least 60 minutes of moderate to vigorous-intensity physical activity daily
	Physical activity of amounts greater than 60 minutes daily will provide additional health benefits
	Should include activities that strengthen muscle and bone, at least 3 times per week
Adults aged 18–64 years	Should do at least 150 minutes of moderate-intensity physical activity throughout the week, or do at least 75 minutes of vigorous-intensity physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity
	For additional health benefits, adults should increase their moderate-intensity physical activity to 300 minutes per week, or equivalent
	Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week
Adults aged 65 years and above	Should do at least 150 minutes of moderate-intensity physical activity throughout the week, or at least 75 minutes of vigorous-intensity physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity
	For additional health benefits, they should increase moderate intensity physical activity to 300 minutes per week, or equivalent
	Those with poor mobility should perform physical activity to enhance balance and prevent falls, 3 or more days per week
	Muscle-strengthening activities should be done involving major muscle groups, 2 or more days a week

At country level, India had higher mortality and YLL rates attributable to low physical activity (mortality rate 50.3 per 100,000; 95% UI: 41, 60) and New Zealand had rates comparable to other countries, with Canada being the top performer. For DALYs attributable to low physical activity, Singapore stood out, closely following India, while Canada still had the lowest rate. For years lived with disability attributable to low physical activity, Singapore had the highest burden; India and China had the lowest rates followed by New Zealand. This may reflect more serious or fatal health loss in India and China, conversely, better survival and health care services in Singapore. Men had a higher burden of health loss attributable to low physical activity than women.

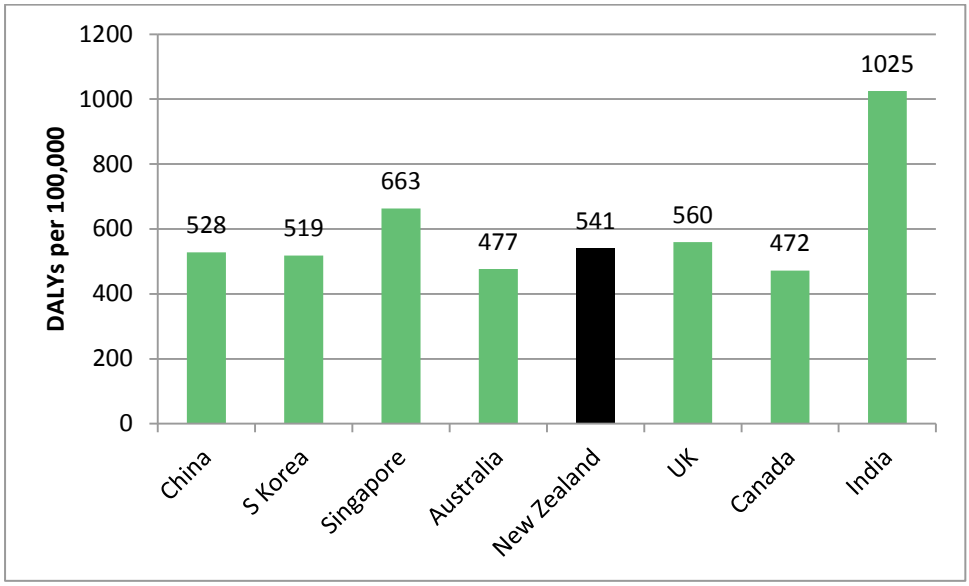


Figure 22 Age standardised DALYs attributable to low physical activity, by country, both sexes, GBD 2010

New Zealand had the highest rate of being 'insufficiently active' among adults aged 18+ years followed by the UK in 2010, while India had the lowest rate. This remained true when the data was considered by sex. In addition, women had higher rates of low physical activity than men.

In the health survey, New Zealand measures the proportion of people meeting the New Zealand physical activity guidelines in the past 7 days among adults 15+ years, i.e. did at least 30 minutes of exercise on 5 or more days in the past week. The New Zealand average for women and men combined in NZHS 2011-13 was 46.0% not meeting the guideline (95% CI: 44%-48%). Acknowledging the differences in years of comparison, age group and definitions of physical activity between NZHS and the WHO estimates, the New Zealand average is slightly higher than the WHO estimate for New Zealand.

Asian in both DHBs had higher rates not meeting the New Zealand guideline for physical activity than the New Zealand average (Waitemata Asian: 69.5%, 95% CI: 59%-79%; Auckland Asian: 54.8%, 95% CI: 49%-61%). In the international context, Waitemata and Auckland DHBs would replace the New Zealand average to be the regions with the highest rate of insufficient activity for Asians, particularly in Waitemata DHB. Nationwide, lower (crude) rates of being physically active were reported among Chinese (40%), South Asian (46%) and Other Asian (46%), compared to European/Other (56%) in NZHS 2011-13 (Scragg, 2016).

The Canadian study also found that Chinese (adjusted OR 1.58, 95% CI: 1.41-1.78) and South Asian (adjusted OR 1.66, 95% CI: 1.48-1.85) were more likely to be physically inactive, compared to White (Caucasian) in Canada (Liu et al., 2010). Korean or Japanese in this study had a rate comparable to the White (Caucasian). In the UK, the Health Survey for England (2004) examined the physical activity of ethnic groups, analysing the odds of meeting the physical activity guidelines of at least five days per week of moderate intensity exercise lasting 30 minutes per day (Higgins & Dale, 2010) . For men, only Bangladeshi and Pakistani groups were found to have lower odds than the White population. In women, South Asian and Chinese groups had lower odds, in comparison to the White population. In a separate study, it was found that within South Asian groups, people from the Bangladeshi community had much lower levels of physical activity than other South Asian groups, while those of Indian ethnicity had the highest levels, although still lower than the White population (Hayes et al., 2002).

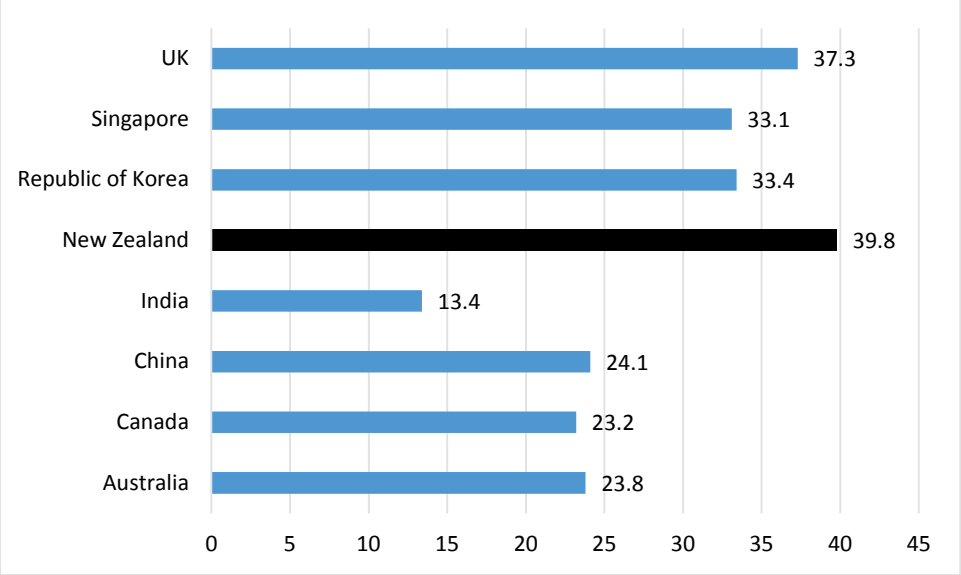


Figure 23 Age standardised prevalence of low physical activity, 18+ years, by country, both sexes, WHO

Table 22 Age standardised prevalence meeting physically active criteria* of New Zealand, 15+ years, NZHS 2011-13

DHB	Asian		European/Other		All	
	Rate	*(95% CI)*	Rate	*(95% CI)*	Rate	*(95% CI)*
Waitemata	30.5	(21.2-41.2)	48.3	(44.7-51.9)	45.2	(41.4-49.1)
Auckland	45.2	(39.1-51.4)	53.7	(49.6-57.8)	50.2	(46.6-53.8)
Counties-Manukau	38.1	(32.6-43.7)	38.5	(32.0-45.4)	37.2	(32.6-42.0)
All 3 Auckland DHBs	38.6	(34.4-42.8)	47.7	(45.1-50.4)	44.4	(42.0-46.9)
New Zealand	42.0	(38.6-45.4)	56.6	(54.2-59.0)	54.0	(51.8-56.1)

* Met physical activity guidelines in past 7 days, i.e. did at least 30 minutes of exercise on 5 or more days in the past week

Interpretation and reflection

Tobacco use accounted for 8.7% of all DALYs in 2013 in New Zealand, the third ranked risk factor after dietary factors and high body mass (Ministry of Health, 2016). The second highest daily smoking rate of New Zealand women is mainly attributed to the higher smoking prevalence of Māori and Pacific peoples. However, Asian men also had a higher rate of daily smoking in both DHBs, suggesting this group of people (in particular Chinese and Other Asian men) should also be targeted alongside Māori and Pacific peoples in the delivery of culturally appropriate smoking cessation interventions i.e. brief advice, referrals to smoking cessation providers, prescribing pharmacy therapy and accessing behavioural support in appropriate languages in the broader context of 'Smokefree Aotearoa 2025'.

New Zealand had the highest age standardised rate of obesity (defined as BMI≥30) and the highest mortality rate attributable to high BMI of all the countries on the list. High BMI as the second ranked risk factor took 9.2% of total DALYs in 2013 in New Zealand (while dietary factors accounted for 9.4% of total DALYs) (Ministry of Health, 2016). Māori and Pacific peoples had higher prevalence rates of obesity and thus heavy health loss due to obesity (CVD, type 2 diabetes and its complications). However, the fact that all three Asian sub-groups had higher prevalence of obesity when the ethnic specific criteria were applied (according to NZHS), provides the evidence base to include identified Asian groups in the 'co-design' of culturally appropriate lifestyle interventions that aim to prevent and manage obesity and reduce amenable mortality.

New Zealand as a country had the highest prevalence rate of being 'insufficiently active' (aged 18+ years) and Asians in both DHBs had higher rates not meeting the New Zealand guidelines for physical activity compared to the New Zealand average, suggesting the highest level of insufficient activity of Asians of the two DHBs internationally. There needs to be research undertaken to understand why New Zealand Asians are less likely to be physically active (e.g. enablers and barriers), as well as leveraging on cross-sectorial collaborations and strategies that adopt both upstream system measures that address the social determinants of health as well as opportunities for 'co-design' of culturally appropriate interventions (e.g. Healthy Auckland Together, Healthy Families Waitakere).

Health service use

Internationally	• New Zealand had immunisation rates simliar to the majority of the comparator countries	
	• Asian children of both DHBs had among the highest rates of immunisation when compared with the comparator countries	
	• The cervical screening rates for Asian women of both DHBs were lower than many of the comparator countries where screening data were available	
	• Asian breast screening rate was lower in Waitemata when compared to the comparator countries where screening data were available	
Nationally	• Asian children of Waitemata and Auckland DHBs had higher immunisation rates than the New Zealand average	
	• Asian women of both DHBs had lower cervical screening rates that the New Zealand average	
	• Asian women of Waitemata DHB had a lower breast screening rate than the New Zealand average	
	• Asian adults in New Zealand were less likely to have a usual health practitioner or service to visit when unwell than other ethnicities	
	• PHO enrolment rates among the Asian population in both DHBs are well below that of other ethnicities	

In this part, an overview of the Asian Health in Aotearoa in 2011-2013: Trends since 2002-2003 and 2006-2007 report (Scragg, 2016) of health service utilisation is included, along with childhood immunization coverage rates and cervical and breast screening programmes, benchmarked internationally.

Findings of health service utilisation from the Asian Health in Aotearoa Report

- Asian adults were less likely to have a usual health practitioner or service to visit when unwell (South Asian 88%, Chinese 87%, Other Asian 82%), compared to non-Asians (Māori 93%, Pacific 95%, European & Other 95%)
- The proportion of Asian children attending a public hospital increased between 2006-07 (14%) and 2011-13 (24%), while the proportion attending a private hospital decreased (from 2% to 0.1%)
- South Asian and Chinese children (both 74%) were less likely to have visited a dentist or oral health care worker in the last 12 months than European & Other (83%), who were similar to Other Asian
- Among adults, South Asian (31%), Chinese (36%) and Other Asian people (41%) were less likely to have visited a dentist or oral health care worker in the last 12 months than European & Other (49%).

Immunisation rates for children

WHO and the United Nations International Children's Emergency Fund (UNICEF) review data available on national immunisation coverage based on data officially reported to WHO and UNICEF by Member States as well as data reported in the published and grey literature, and then estimate the immunisation coverage by country, using established methods and processes (Burton et al., 2009). New Zealand did reasonably well in immunisation coverage rates, but China and the Republic of Korea did the best. There was still some gap for India close in 2014. Not all countries had the same immunisation schedule.

Table 23 Immunisation coverage rate, WHO 2014

Vaccine	Australia	Canada	China	India	New Zealand	Republic of Korea	Singapore	UK
BCG			99	91		99	99	
DTP1	92	98	99	90	93	99	98	98
DTP3	92	96	99	83	93	99	97	95
HepB_BD			94	37		92	67	
HepB3	91	75	99	70	93	99	97	
Hib3	91	96		20	93	97		95
MCV1	93	95	99	83	93	99	95	93
MCV2	93	94	99	51	86	96	95	89
PAB				87				
PCV3	91	97			93			93
Pol3	92	96	99	82	93	99	97	95
Rota_last	84							

Data source: WHO.
http://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/index4.html, accessed 28 March 2016, as of 10 July 2015

Notes by WHO:

1	BCG	Baccille Calmette Guérin vaccine
2	DTP1	First dose of diphtheria toxoid, tetanus toxoid and pertussis vaccine
3	DTP3	Third dose of diphtheria toxoid, tetanus toxoid and pertussis vaccine
4	HepB_BD	Hepatitis B birth dose estimates are for doses given within 24 hours after birth
5	HepB3	Third dose of hepatitis B vaccine
6	Hib3	Third dose of Haemophilus influenzae type B vaccine
7	MCV1	Measles-containing vaccine
8	MCV2	Coverage estimates are for the nationally recommended age for the second dose of measles containing vaccine.
9	PAB	Protection at birth
10	PCV3	Third dose of pneumococcal conjugate vaccine
11	Pol3	Third dose of polio vaccine
12	Rota_last	Rotavirus last dose (2nd or 3rd depending on schedule)

As at 30 June 2016, Asian children in both Auckland and Waitemata DHBs maintained higher immunisation coverage rates than the New Zealand immunisation coverage rate (92.7%), similar to

the level of China in 2014. In New Zealand, the vaccines currently included in the 8 month old Immunisation Health Target are (Ministry of Health, 2016): diphtheria, tetanus, pertussis, Hib (Haemophilus influenzae type B), polio, HepB, pneumococcal and rotavirus. The Asian coverage rate at 8 months is 97% (Auckland DHB) and 98% (Waitemata DHB) as at 30 June 2016.

At age 15 months, children are offered booster doses of pneumococcal and Hib vaccines, and a first dose of MMR vaccine. The Asian coverage rate at 2 years is 95% (Auckland DHB) and 97% (Waitemata DHB) as at 30 June 2016.

At age 4 years, booster doses of diphtheria, tetanus, pertussis and polio vaccines, and a second dose of MMR vaccine are given. Overall, Asian children generally maintain immunisation coverage levels of greater than the recommended 95%, at both 8 months and 2 years, with the exception of the 4 year old immunisation event, where coverage is 88% and 90% for Auckland and Waitemata DHBs respectively fully vaccinated by 5 years. This is still higher than the DHB total 4 year old coverage rate generally, which is 86% and 83% for Auckland and Waitemata DHBs respectively.

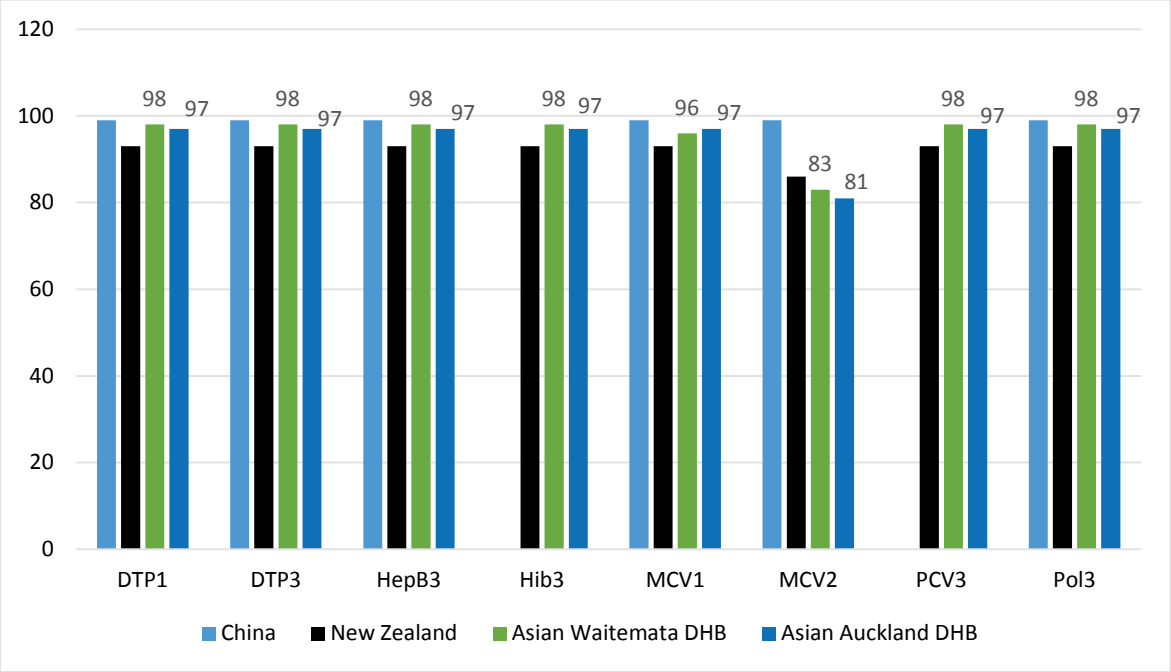


Figure 24 Immunisation coverage rate (%), Asian of Waitemata and Auckland DHBs, 2014

Cervical screening

The International Cancer Screening Network (ICSN) of the National Cancer Institute within the National Institutes of Health (NIH) provided estimates of cervical screening rates based on an international survey (ICSN, 2016). In addition, organisation, policies and reach of the cervical screening programmes were also collected. Quality Watch of the UK also collected data of selected countries (QualityWatch, 2016). The New Zealand national cervical screening programme started in 1991 and did very well compared to other countries on the list, with coverage rates being 75%, just behind the UK.

At the end of December 2015, the New Zealand average cervical screening coverage rate was 76.7% (three-year coverage) for women aged 25-60 years (official age group for reporting) (NCSP, 2016). As

at 31 December 2010, Asian in Auckland DHB and Waitemata DHB had screening rates of 52.4% and 52.9% respectively (NCSP, 2016). Compared to the figures of other countries of the same time period, the Asian rates in both DHBs were lower than that of the averages of New Zealand and the UK. As at December 2015, the rates had increased to 66% for Asian women in both DHBs.

In Canada, the visible minority population in general were 53% less likely to have had a Pap smear, compared to White (Quan et al., 2006). There was no breakdown of visible minority population in this study. Asian women in both Waitemata and Auckland DHBs seemed to have done better than the visible minority women in Canada, acknowledging that the data for comparison came from different years (Canada, 2001 vs. New Zealand, 2014-2015).

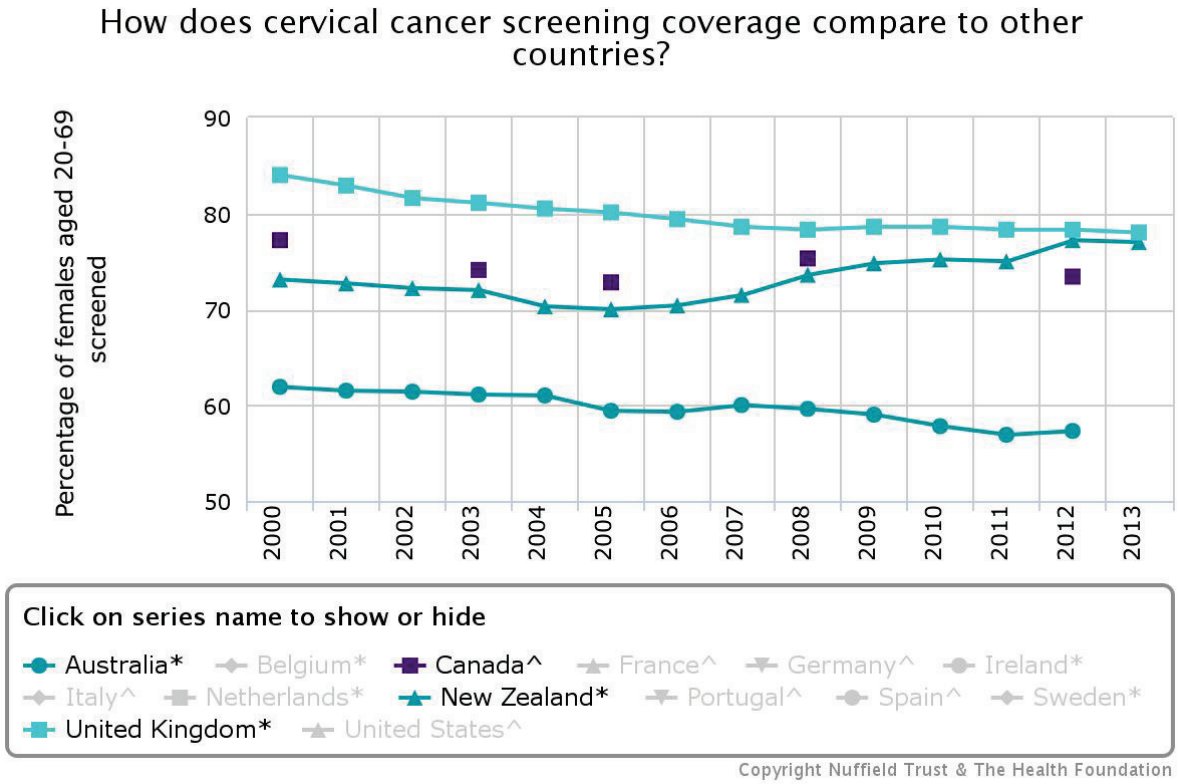
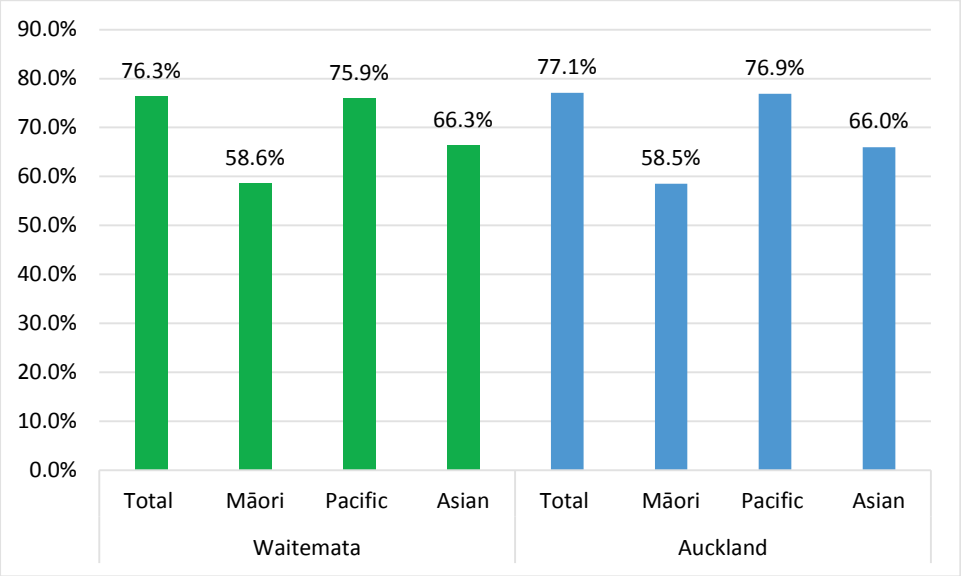


Figure 25 Cervical screening coverage rate (%) by country, 2000-2013



Data source: NSU/MoH.
https://www.nsu.govt.nz/system/files/page/dec_2015_ncsp_coverage_new_vs_old_method_final_0.docx+&cd=1&hl=en&ct=clnk&gl=nz, accessed 28 March 2016

Figure 26 Cervical screening coverage rate (%), Waitemata and Auckland DHBs, December 2015

Breast screening

New Zealand had a reasonably good breast screening coverage rate at 67.5% in 2010, according to the International Cancer Screening Network (ICSN, 2016). The data reported by Quality Watch of the UK gave time series coverage rates of selected countries (QualityWatch, 2016).

The screening rate in the two years ending 30 June 2016 was 71.4% for women aged 50-69 years in New Zealand (Ministry of Health, 2016). The rates were approximately 72% and 66% for Asian women in Auckland and Waitemata DHBs respectively, during the same time period. There was still some gap for Waitemata Asian women to catch up with the New Zealand and the UK averages, although they did better than Canada and the Republic of Korea in 2010.

In Australia, during 2011–2012, the difference in the age standardised breast screening participation rates between English-speaking women (55.3%) and those who reported that they speak a language other than English at home (49.9%) was 5.4% (AIHW, 2014). Language spoken is clearly not the same as ethnicity or country of birth, but it may suggest new immigrant women born in Asian countries have a slightly lower breast screening rate. Nevertheless, these rates are clearly lower than the rates for Asian women in both Auckland and Waitemata DHBs (72% for Auckland Asian and 66% for Waitemata Asian as at June 2016). In Australia, there seemed to be a slow downward trend since 2008-09.

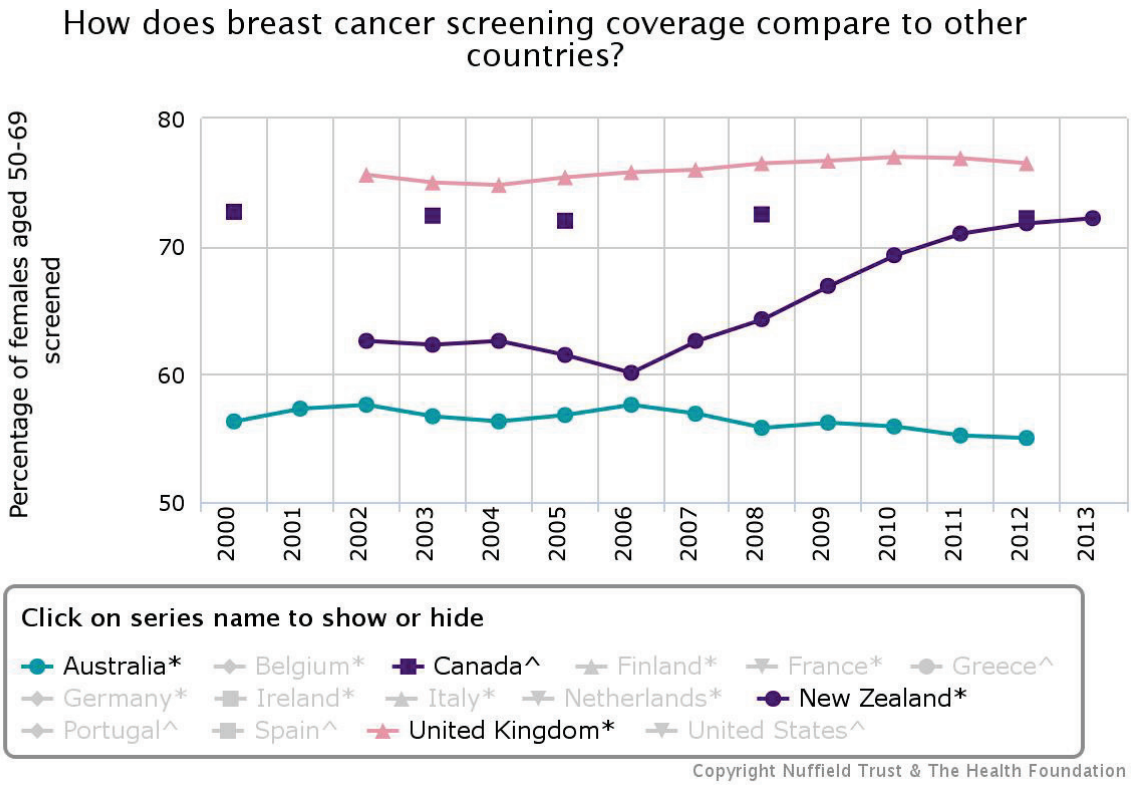


Figure 27 Breast screening coverage rate (%) by country, 2000-2013

Table 24 Breast Cancer Screening coverage, Asian, Waitemata and Auckland DHBs

Reporting Period	DHB	Asian Women screened (50-69 yrs)	Population Projections (50-69 yrs)	Coverage (50-69 yrs)	Asian Women screened (45-69 yrs)	Population Projections (45-69 yrs)	Coverage (45-69 yrs)
1 July 2012 - 30 June 2014	Auckland	8,329	11,260	74.0%	12,111	15,950	75.9%
1 July 2012 - 30 June 2014	Waitemata	6,281	9,910	63.4%	8,932	13,950	64.0%
1 July 2013 - 30 June 2015	Auckland	8,787	11,970	73.4%	12,592	16,780	75.0%
1 July 2013 - 30 June 2015	Waitemata	6,961	10,610	65.6%	9,684	14,750	65.7%
1 July 2014 - 30 June 2016	Auckland	9,226	12,840	71.9%	12,881	17,750	72.6%
1 July 2014 - 30 June 2016	Waitemata	7,577	11,430	66.3%	10,432	15,780	66.1%

Data extracted from the BSA Database on 1 August 2016 (using 2015 update of the Population projections)

Interpretation and reflection

Immunisation and cancer screening services are important public health measures to reduce the incidence and mortality rates of some communicable diseases and some cancers. Of note, the Asian immunisation rates of both DHBs were close to the top performer at country level – China. In comparison, the Asian cervical and breast screening rates were still far from the New Zealand and the UK averages, except for the breast screening rate in the Auckland DHB (although the coverage rate has decreased from December 2013 to December 2014). In addition, there were lower rates of PHO enrolment and use of primary care and oral health services by Asians. Reasons may be due to lack of awareness of and the role of primary health services based on limited exposure or availability of services in one's country of origin, and cultural beliefs and nuances adopted by certain ethnic groups which transfer to help-seeking and health seeking behaviours in New Zealand. This seems to explain why the immunisation rate is higher (immunisation coverage rates are usually high in Asian countries) and the cervical and breast screening rates are lower (these two screening programmes are gaining momentum in some Asian countries such as Singapore). In many Asian counties, there is no functional primary care system or primary dental services as we have here in New Zealand, although some countries are starting to grow their primary care and triage system.

It is important to work to address amenable mortality and to lower premature mortality from cancer. We must continue to address the barriers that segments of the Asian population experience in terms of awareness of and participation in screening programmes (Appendix 6). The low cervical screening coverage for eligible Asian women in both DHBs warrants a greater need for culturally appropriate and targeted awareness raising. This includes promotion of the Human Papillomavirus (HPV) vaccination for Asian parents of both girls and boys to reach the new national target of 75%, and ongoing comprehensive school-based immunisation programmes. Continuing to provide free smears for Asian women aged 30-69 years 'who have not been screened or under screened in the last 5 years' is an enabler that addresses 'cost' as a structural barrier to access, and is aimed at increasing the Asian cervical screening coverage rate.

Furthermore, a suite of strategies has been adopted across both DHBs and via settlement and ethnic partner platforms to increase awareness of the NZ health and disability system, provide information on how to access health services, the role and benefits of the family doctor, and provide prevention and lifestyle messages including multilingual Your Local Doctor campaigns, podcast videos, materials, presentations/workshops, social media, and cultural and language support services. Up-skilling the health workforce – particularly in primary health to undertake CALD Cultural Competency courses – is recognised and endorsed by New Zealand health professional bodies as a key enabler led by Waitemata DHB's eCALD® services (WDHB, eCALD, 2016).

Lastly, there needs to be greater reciprocity of learnings and experiences of best practice in service delivery between the DHBs, regionally and nationally to ensure efficiency and culturally responsive service delivery where DHBs are performing less well i.e. Asian breast screening in Auckland DHB compared with Waitemata DHB.

Patient experience and community engagement/participation

Waitemata and Auckland DHBs are committed to enhancing the experience of patients when they interact with health services. This section outlines what is already known about main Asian subgroup experiences and expectations in relation to access and utilisation of health services nationally and locally. A general overview will be shared of the culturally specific information including values, health beliefs and cultural expectations that influence main Asian subgroup attitudes and behaviours towards access and uptake of services and patient experience, as well as community engagement/participation initiatives, and growing a culturally competent workforce.

The qualitative findings enhance the assessment of DHB performance against the indicators within the respective Outcomes Frameworks'. Enhanced patient experience is a strategic priority and long-term outcome for the DHBs with the intent being to engage patients and communities in the design and delivery of the care they receive. Improving experience of health care services is an important indicator in assessing the quality of the care we provide and is strongly linked to overall health outcomes. For example language, cultural beliefs and not knowing how to access services are identified as key barriers to use of health services for Asian migrants in New Zealand (Wong et al., 2010).

- Asian Health in Aotearoa in 2011-2013: Trends since 2002-2003 and 2006-2007 (Scragg, 2016) indicated that:
    - Asian peoples who have resided less than 5 years in New Zealand are less likely to have access to a primary health care practice, and to health care practitioners, such as family doctors and medical specialists, as compared to those who have lived longer in New Zealand
    - Asian adults were less likely to have a usual health practitioner or service to visit when unwell (South Asian 88%, Chinese 87%, Other Asian 82%), compared to non-Asians (Māori 93%, Pacific 95%, European & Other 95%)
    - The proportion of Asian children attending a public hospital increased from 2006-07 (14%) to 2011-13 (24%), while the proportion attending a private hospital decreased (from 2% to 0.1%)

- Acculturation was cited as a key determinant affecting the likelihood of accessing primary care services such as general practice
- The HNA of Asian People Living in the Auckland Region (2012) report indicated that health service providers interviewed felt lack of familiarity with the New Zealand health system was a barrier to uptake of health service information by new Asian migrants
- The student survey report on 'Student awareness of health services and sources of health information in the Auckland district' highlighted that perceived understanding of the New Zealand health system, for European and Other ethnic groups had a higher mean score 188.1 and 178.32 respectively, as compared to Asian (128.8) (n=318).

Notwithstanding this, although 'Asian' is broadly classified and often treated as a homogenous group, there are cultural heterogeneous differences and similarities that are shared within and/or across

Asian ethnic groups to be considered in the planning and delivery of culturally appropriate and responsive health services and targeted interventions to increase health gain.

Highlights

Top Four Values about Health Services

In July 2014, the Auckland DHB ran an 'At Our Best' Values project where feedback was sourced via face-to-face workshops and surveys from over 80 Auckland Asian community voices from key ethnic groups such as Chinese, Korean, South Asian (Indian), Filipino and other Asian groups about 'What Matters' to them with respect to healthcare and patient experience. The top four values Asians placed on their experiences and expectations of health services were:

1. Excellence and professionalism
2. A professional connection with clinicians
3. Confidence about the level of care
4. Efficiency, productivity, and good processes.

Patient Experience

In 2015, Auckland DHB's Online Patient Experience Survey (In-Patient and Out-Patient) highlighted that Asian patients are less likely to rate their overall care and treatment as 'very good to excellent' (81%), compared to non-Asians (NZ European 84%, Māori 84% and Pacific 84%).

In 2015, only 58.7% of Chinese patients (n=303) who completed the Waitemata DHB's 'Friends & Family Test' were 'extremely likely' to 'recommend our ward to friends and family if they need similar care or treatment', compared to non-Asians (NZ European 70%, Māori 69.2%, Samoan 65.2% and Tongan 58.8%).

Access to Healthcare Services

Ethnic diversity and acculturation are important factors influencing health and access to health services. An Auckland DHB Community Health Survey (2012) found that Chinese respondents were more likely to rate their access to health care as low, compared to New Zealand Europeans (n=269). Factors attributing a low self-rating relate to cost of services and quality issues such as availability/waiting times at general practice.

Asian peoples who have resided for less than 5 years in New Zealand are less likely to have access to a primary health care practice and to health care practitioners, including family doctors and medical specialists, compared to those who have lived longer in New Zealand (Scragg, 2016).

A student survey (n=318) took a convenient sample of students from UoA, AUT (North Shore, City and Manukau campuses), Massey University (Albany campus) and NZMA (Sylvia Park campus) to inform the Auckland and Waitemata DHBs on 'Student Awareness of Health Services and Health Information in the Auckland District'. The results found that International students tended to have a lower level of

understanding of New Zealand health and disability systems, were less likely to have a usual family doctor or GP clinic to go to, and accessed EDs of public hospitals significantly less, after adjusting for the effects of ethnicity (New Zealand Māori, European, Asian and all Other). Ethnicity did not seem to affect ED visits, although Asian students had a lower ED access rate than other ethnic groups in the studied convenient sample.

Asian online respondents (n=95) of the Waitemata DHB Primary Birthing Facility Consultation 2016 were fairly equally in favour of all three Waitemata DHB operated primary birthing units which were (a) In community, DHB operated, (b) On hospital grounds, in a separate building, and (c) In hospital, near the maternity unit. However Asian groups who attended the forums (n=52) favoured (a) On hospital grounds, in a separate building, and (b) In community, DHB operated. Asian staff preferred either a community-based, DHB operated or hospital-based facility near the maternity unit.

Top Four Features as Essential for Primary Birthing Units

1. Breastfeeding support/advice
2. Family friendly
3. Partners to stay overnight
4. Easy to get to by car.

Asian groups were most likely to rate having community health facilities nearby as essential for PBUs.

Organisational values

Adopting a values-based approach as an organisation is key to ensuring the needs of all population groups - including Asian - are embedded into future organisational development and culture change.

Auckland DHB

Auckland DHB has been successful in undertaking a values driven 'At Our Best' project conducted in July 2014 where feedback was sourced via face-to-face workshops and surveys from over 80 Auckland Asian community voices from key ethnic groups such as Chinese, Korean, South Asian (Indian), Filipino and other Asian groups about 'What Matters' to them with respect to healthcare and patient experiences. Inputs from the 'At Our Best' project were then embedded into the newly updated set of organisational values approved by the Board in April 2015.

This was a positive step for the organisation and demonstrated an inclusive approach that will aim to translate to demonstrable behaviours and actions for the organisation as a whole, and at the service level where Asian cultural and health needs can be met.

Table 25 Top ten areas that Asian respondents value when they engage in Auckland DHB services (n=80)

1	Excellence and professionalism
2	A professional connection with clinicians
3	Confidence about the level of care
4	Efficiency, productivity, good processes
5	Get things right/ask the right questions
6	Have all the information – themselves and doctors knowing their information/history
7	Education and advice to self-manage
8	My opinion counts
9	Language barriers removed: doctors, nurse, city workers and district nurses workers
10	Home visits (avoid language barriers)

Waitemata DHB

Waitemata DHB undertook a process of redefining its purpose, promise and priorities and organisational values in 2012. In late 2013, this process invited consumers of our healthcare services and staff, across all ethnic groups, to participate in co-designing the standards and behaviours that underpin the Organisation's values. This work has now extended to a larger programme called 'The Waitemata Experience'. –

Patient experience

Auckland DHB patient experience survey

The Auckland DHB Online Patient Experience Survey (In-Patient and Out-Patient) is sent weekly to patients who have completed a clinic visit or been discharged from hospital in the week prior. Questions asked relate to dimensions of care that matter most to the individual patient, and also ask respondents to rate their overall care. In February 2015, the regular monthly report focused on culture, and highlighted some key areas about meeting cultural needs for Auckland DHB patients. Reviewing ratings over the past 12 months by ethnicity, shows that Asian patients are 'less likely' to rate their overall care and treatment positively, as compared to New Zealand European, Māori and Pacific inpatients who are 'most likely' to rate their experience at Auckland DHB positively. The surveys continue to record ethnicity so a further analysis can be completed based on the specific feedback received by the patients across the dimensions of care.

Table 26 Ratings over the last 12 months at Auckland DHB, by ethnicity

Ethnicity	Poor to fair (%)	Good (%)	Very good to excellent (%)
New Zealand European	6	10	85
Māori	6	10	84
Pasifika	3	13	84
Asian	6	12	81
Other	7	12	80
Total Auckland DHB	6	10	84

n=3,898 (New Zealand European n=2,641, Māori n=337, Pasifika n=301, Asian n=496, other n=604); the differences are significant ($p<0.05$)

Patient voice aligned to the Values

One Asian patient voice who rated meeting cultural needs 'highly' (10 on 0-10 point scale) strongly captured all four of the Organisational values.

Welcome *Haere Mai* Respect *Manaaki* Together *Tūhono* Aim High *Angamua*

"I think it helps having diverse staff in terms of ethnicity. So that new migrants to Aotearoa like myself would feel comfortable to speak with them. I think it's important to have ethnic diversity for this reason – and this met my cultural needs to have people I could relate to."

Waitemata DHB friends and family test

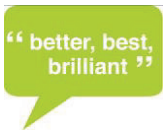
Patient experience is one of the three key components of quality: patient safety, clinical effectiveness and patient experience. The Waitemata DHB's 'Friends & Family Test' was developed to provide patients and their families with the opportunity to give feedback on the quality of care and treatment they receive, giving the DHB a better understanding of their needs and enabling improvements to the care and treatment provided. The test was developed in the UK and is now an integral part of Putting Patients First, National Health System (NHS) England's Business Plan for

2013-2016. In May 2013, the UK's Prime Minister announced that the 'Friends & Family Test' would be introduced across the NHS. The test aims to provide a single, simple headline measure of a patient's experience with answers on a five-point scale of extremely likely to extremely unlikely, or excellent to poor. The test gathers ethnicity data for two Asian ethnic subgroups - Chinese and Indian. Korean is not an ethnicity option in the test, however as part of the system redevelopment it will be included given it is the third largest Asian ethnic group in the Waitemata DHB catchment at 13.7% (as at June 2016).

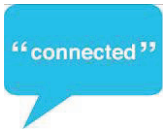
For the 12 month period (01/01/2015 – 31/12/2015), 303 Chinese patients and four Indian respondents completed the test. Due to the low response rate, Indian data was not analysed. Key Chinese patient findings for the Waitemata DHB as a whole organisation were:

- Only 58.7% of Chinese patients (n=303) were 'extremely likely' to 'recommend our ward to friends and family if they need similar care or treatment'), compared to non-Asians (NZ European 70%, Māori 69.2%, Samoan 65.2% and Tongan 58.8%)
- 75.4% rated 'excellent' for feeling 'welcomed and friendly' (n=260)
- 72.8% rated 'excellent' that the DHB was showing 'care and respect' (n=300)
- 65.1% rated 'excellent' that the DHB 'met their expectations' (n=300)
- 69.4% rated 'excellent' that they felt they were 'listened to, and information explained' (n=300).

Patient voice aligned to the Values



"Staff are all friendly, supportive and professional. I feel that I had been taken good care of" [Chinese female, 19-30 years, North Shore Hospital Maternity Unit]



"Asian support is very important, especially for the palliative care patient and family" [Chinese male, 41-55 years, North Shore Hospital Ward 10]

"Staff and nurses are extremely caring thoughtful and all care is given to the needs you require, thank you all for caring" [Chinese female, 56-70 years, North Shore Hospital Ward 6]

"Staff are simply wonderful from specialists to cleaners. Extremely grateful for family support to be allowed to stay with our elderly mother" [Chinese female, 56-70 years, North Shore Hospital Ward 6].

Community engagement/participation

How are patients and the community engaged in designing, supporting, and evaluating health services? Three key projects aimed at listening to and responding to the voice of Asian communities in a collaborative process included:

A Community Health Survey (Auckland DHB)

A Community Health Survey was conducted (October, 2012) aimed at community members (n=2313) across the Auckland DHB Local Boards including:

- Waiheke
- Great Barrier
- Otahuhu
- Puketapapa
- Whau
- Waitemata
- Orakei
- Albert-Eden
- Maungakiekie-Tāmaki.

Information was gathered about:

- Perceptions of health status and the health of their community
- Experiences of health services in their area, and
- What could be done to lift and protect the health of the community.

Table 27 Snapshot of key findings across Local Boards, where Asian respondents were higher in the sample demographics

Local Boards	Key findings
Albert-Eden, Puketapapa	• Cost was a key issue, and a quarter of respondents would go to emergency services in the hospital as they can't afford a family doctor • After issues of cost and affordability, awareness of/access to mental health services was frequently mentioned as an issue (n=385) • Other barriers to accessing health care were opening hours, transport, availability of appointments • Obesity, poverty and the cost of health services were highlighted as the most important issues for residents • Ethnic diversity was an important factor influencing health and access to health services. Chinese respondents rated their access to health care as low compared to New Zealand Europeans (n=269). Factors attributing a low self-rating related to cost of services and quality issues such as availability/waiting times at general practice
Waitemata	• Comprises a higher number of youth and university students. Youth health concerns included affordability, alcohol, sexual health, diet and mental health (n=373)

Tāmaki Mental Health & Wellbeing Project[6] – Burmese engagement (Auckland DHB)

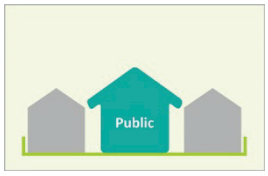
A co-design vision was established: 'an experience of mental health and wellbeing focused on the whole person in their family, whānau and community, over the whole of their life supported by integrated services that are relevant to Tāmaki'. Demographic data from the 2013 Census indicated that nearly a quarter (23.7%) of the Maungakiekie-Tāmaki usually resident population identified with an Asian ethnicity, just above that for Auckland as a whole (23.1%). An identified vulnerable Asian subgroup within the Glen Innes area were the Burmese communities. In August 2015, 25 participants (both youth and adults) were invited to share their views about what mental health and wellbeing meant to them as a concept and/or their experiences as part of the Tāmaki Mental Health & Wellbeing Project information session. The session was delivered in both English and Burmese, with written information made available in Burmese.

Table 28 Key barriers to access and utilisation of health services

1	The term 'mental health' is a western concept. Mental health is a not on a spectrum, you are either 'normal' or seen as 'crazy'.
2	Language and accessing interpreters
3	Unsure of where to access information about the New Zealand health and disability system
4	Not telling their GP about their 'problems', rather keep to themselves
5	Health literacy
6	Cultural competency of health professionals
7	Perceptions of being looked down on by other staff
8	Poor experiences with services. Wary of the medical system, feel that when they walk away from encounters with the system they feel worse

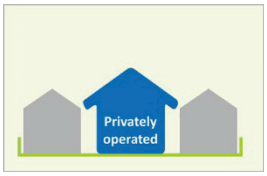
Primary Birthing Facility Engagement Consultation (Waitemata DHB)

A consultation to gain feedback on options for PBUs in Waitemata took place between 18 January – 29 February 2016. Respondents were asked to rank their preferences against four options approved by the Waitemata DHB board.

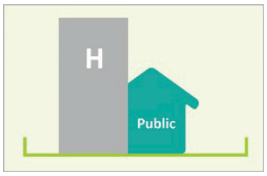


Located in the community, operated by the DHB

Located on hospital grounds in a separate building, with its own entrance, operated by the DHB



Located in the community, operated by a private or community contractor (but still free)



Located in a hospital, next to or very close to the maternity unit, operated by the DHB

The consultation was aimed at all of the DHB community, from health professionals to mothers and families, as many people are known to influence a mother's choice of birth location. Feedback was

[6] Information on the Tāmaki Mental Health & Wellbeing localities project can be found at http://www.tamakiwellbeing.org.nz

gathered to gain a better understanding of where an additional PBU should be located, what facilities should be there and how the unit should be managed. The consultation was intended to help the DHB to understand what would encourage the community to use the unit.

The consultation included an opportunity to provide feedback online, to attend one of a series of events, or to request a speaker for a group or network. Seven DHB run events took place over a range of dates and locations including weekends and evenings. These included targeted events for Asian, Pacific and Māori communities as well as general community events. Small group discussions were held with a wide number of groups and organisations.

Participation by Asian groups was 9.9%. The findings of the consultation were:

- Asian online respondents (n=95) were fairly equally in favour of all three DHB operated PBUs which were (a) In community, DHB operated, (b) On hospital grounds, in a separate building, and (c) In hospital, near the maternity unit
- Asian groups who attended the forums (n=52) favoured (a) On hospital grounds, in a separate building, and (b) In community, DHB operated
- Asian staff preferred either a community-based, DHB operated or hospital-based facility near the maternity unit.

Top four features as essential for PBUs

1. Breastfeeding support/advice
2. Family friendly
3. Partners to stay overnight
4. Easy to get to by car.

Asian groups were most likely to rate having community health facilities nearby as also essential for PBUs.

Student health (Auckland and Waitemata DHBs)

A student survey about 'Awareness of health services and health information in the Auckland district' took a convenient sample of students from UoA, AUT (North Shore, City and Manukau campuses), Massey University (Albany campus) and NZMA (Sylvia Park campus) (n=318). The survey period was between October 2015- March 2016.

Data was collected in three core domains:

- Your care from health professionals
- Your sources of information
- About you.

Key findings of the student survey:

- Relationship between level 1 ethnicity and student status, whereby the majority of international students were Asian (91%); and secondly, within Asian, the majority of students were domestic (79%). The make-up of the study sample by ethnicity and student status had implications for the study findings and their interpretation and generalisability

- International students tended to have a lower level of understanding of the New Zealand health and disability systems, were less likely to have a usual GP clinic to go to, and accessed EDs of public hospitals significantly less, after adjusting for the effects of ethnicity (New Zealand Māori, European, Asian and all Other). Ethnicity did not seem to affect ED visits although Asian students had a lower ED access rate than other ethnic groups in the studied convenient sample.

a. Usual GP clinic (n=318)
   - Of the 85.8% who responded 'yes' they have one GP clinic or community health clinic they usually go to, Asian was the least likely group (78%) to visit a general practice compared to European (91%), New Zealand Māori (96%) and Other (90%)
   - International students were less likely to have a usual GP to visit than domestic students (47% vs. 90%).

b. Awareness of private after-hours urgent care clinics (n=318)
   - Of the 58% of students who were aware of after-hours urgent care clinics in their community, domestic students (61%) had greater awareness than 34% of international students (Chi-square test, P=0.0040). Asian had a significantly lower rate of awareness than other ethnic groups (49% for Asian, and 63-66% for other ethnic groups).

c. Access to any EDs of public hospitals (n=318)
   - 24% of the participants had been to an ED in the past 12 months. 6.3% of international students accessed ED services and 25.5% for domestic students. 20% of Asian students access EDs while it was between 23%-40% for other ethnic groups. After adjusting for the effects of ethnicity (New Zealand Māori, European, Asian and all Other), the logistic regression model indicated that domestic students were 3.6 times (360%) more likely to visit EDs than international students (0R=4.6, 95% Confidence Interval: 1.04, 20.4).

d. Awareness about the New Zealand health & disability system (n=318)
   - For perceived understanding of the New Zealand health system, a mean score was calculated using the Wilcoxon rank sum scores based on the rating scale responses from 1-10 for the perceived knowledge of the New Zealand health system. Domestic students had a higher mean score 168.7 compared to international students 76.5. European and Other groups had a higher mean score 188.1 and 178.32 respectively, as compared to Asian (128.8).

e. Reasons for respondents not enrolling/registering with a GP were related to lack of awareness about the role of primary care (n=33)
   - Didn't see the need to register/enroll with a GP (60.6%)
   - Didn't know where to register/enroll (45.5%)
   - Didn't know how to enroll with a GP (39.4%)
   - Not sure about the role of a GP (33.3%).

f. Reasons for going to an ED service in the last 12 months were (n=77)
   - I didn't know where else to go (37.0%)

- It was clearly an emergency (36.0%)
- My GP was not open after-hours (36.0%)
- I was told to go by family/friend (24.0%)
- Location (20.0%)
- I can't afford to go anywhere else (16.0%).

g. If you were sick and believe your condition was non-urgent and non-serious, where would you go to/contact first? (n=318)
   - 26.4% of students would not seek out any healthcare.

h. Sources of health information (n=317)
   - The main sources of health information to students are family (72%), friends (58%) and online websites e.g. google (58%). The majority of students (95%) did not use online websites specific to their ethnicity or culture. The 17 students (5.0%) who did so accessed health information from Skykiwi, Chinese radio, WeChat, Samoan radio, Christian life, university newsletters, and NZ Life. There is a need to increase engagement and awareness about health information and the health and disability system to broader population groups and settings that influence students and migrants.

Asian health beliefs

Each ethnic group brings its own perspectives and values to the health care system, and many health care beliefs and health practices can differ from the traditional 'western' biomedical model used in New Zealand (WDHB, eCALD, 2016). Cultural beliefs and nuances held by individuals and communities, and variations in levels of health literacy can impact on 1) one's ability to find, process, understand and share health information and services to make informed health decisions for self and others, 2) appropriate access to, and use of health services at the right time and right place, and 3) patient experience. Appendix 6 provides a summary of the Asian health beliefs for Chinese, Korean and South Asian (Indian) about key health services and programmes, and engaging with health practitioners in the Waitemata and Auckland DHBs.

Culturally competent workforce

The increasing diversity of New Zealand's population makes it imperative that the development of CALD cultural competencies in the health sector include the recognition of culture as a determinant of health status; and the recognition of the need for a culturally competent workforce to address issues of health inequities and health disparities between some Asian, Middle Eastern, African and other population health groups in New Zealand (WDHB, eCALD, 2016).

A comprehensive and quality range of CALD online and face-to-face courses and resources for the New Zealand health workforce have been developed by Waitemata DHB's eCALD® Services (WDHB, eCALD, 2016) with the aim of improving:

- the quality of engagement of health practitioners and CALD clients/patients
- cross-cultural communication and interactions between employers and employees, as well as employees-to-employees working in a culturally diverse workplace.

eCALD® is an international leader in the production and provision of CALD cultural competency courses and resources. The design uses the latest technology for content management, the learning management system (LMS), e-learning, online resources, forum and e-news publications.

The following are the suite of CALD Cultural Competency "Courses for Working with Patients' which address the cross-cultural interactions between health practitioners and CALD patients/ clients and their families. CALD courses are available on-line and face-to-face, and are Continuing Medical Education (CME)/Continuing Nursing Education (CNE)/and Maintenance of Professional Standards (MOPS) accredited (WDHB, eCALD, 2016).

The courses are:

CALD 1 - Culture and Cultural Competence
CALD 2 - Working with Migrant Patients
CALD 3 - Working with Refugee Patients
CALD 4 - Working with Interpreters
CALD 5 - Working with Asian Mental Health Clients
CALD 7 - Working with Religious Diversity
CALD 8 - Working with CALD Families – Disability Awareness
CALD 9 - Working in a Mental Health Context with CALD Clients.

Staff working in the NZ health and disability sector are eligible for free Auckland-based face-to-face and online CALD Cultural Competency "Courses for Working with Patients" if they work for:

- District Health Boards across New Zealand
- Primary health organisations across New Zealand
- Community health and disability non-governmental organisations funded by District Health Boards or the Ministry of Health
- Ministry of Health
- Northern Regional Alliance Ltd.

The CALD Cultural Competency "Courses for Culturally Diverse Workplaces" provides a suite of courses that addresses the cross-cultural interactions between employers and employees, as well as employees-to-employees in the workplace. These courses are offered as Auckland-based face-to-face courses and will be funded by the MoH from 1 July 2016. All the courses are published on the eCALD® services website at www.eCALD.com.

Opportunity

Overall social progress index score and its dimensions

Internationally	• New Zealand had the highest overall social progress index score among the comparator countries • Migrants in New Zealand experience the most equitable entitlement when compared to the comparator countries	☺
Nationally	• Higher proportions of Asian peoples aged 25+ years of Auckland and Waitemata DHBs had a bachelor degree/level 7 qualification or above than the New Zealand average	☺

New Zealand had the highest overall social progress index score of the countries of interest in 2015. New Zealand was ranked fifth in the world, followed by Canada (sixth), Australia (10th) and the UK (11th). India was ranked last, China second to the last.

There was not sufficient data for Singapore in the dimensions of basic human needs and foundations of wellbeing. New Zealand took third place (the 17th in the world) in basic human needs on the list, after Canada (seventh in the world) and Australia (13th in the world). New Zealand did even better in the dimension of foundations of wellbeing (top on the list and the sixth in the world), followed by Australia (12th in the world) and Canada (14th in the world), with India and China still the last two. New Zealand took the second place in the word in the dimension of opportunity after Canada, followed by Australia (the third in the world). The four Asian countries had relatively lower scores, with China being the last on the list.

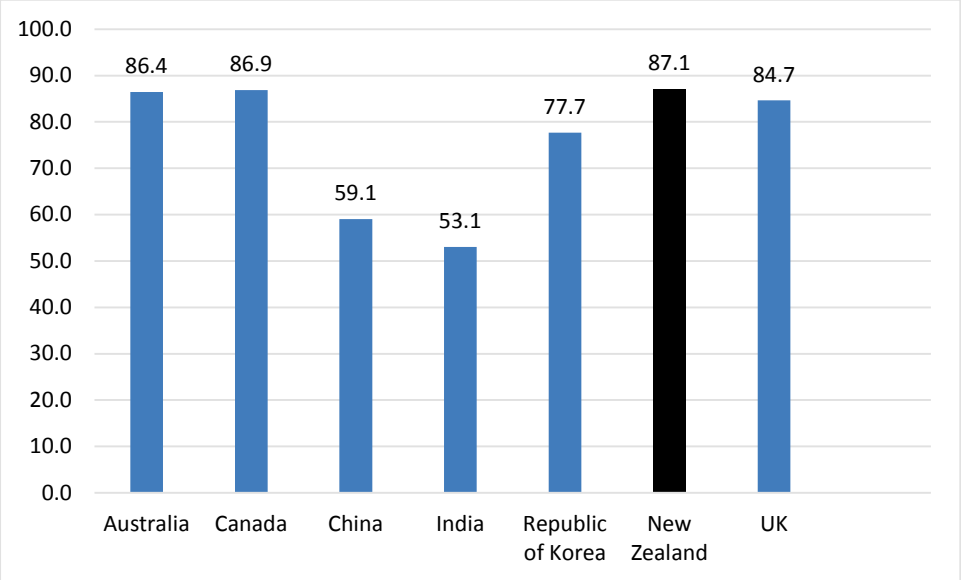


Figure 28 Overall social progress score by country, 2015

Scores of the components of opportunity

China had a very low score for personal rights (only 4.6 out of 100) and India had a lower score for tolerance and inclusion. New Zealand had higher scores in the three components of opportunity, personal rights (first in the world), personal freedom and choice and tolerance and inclusion. New Zealand was behind Canada, the UK, Australia and the Republic of Korea in the score of access to advanced education, but better than Singapore, China and India.

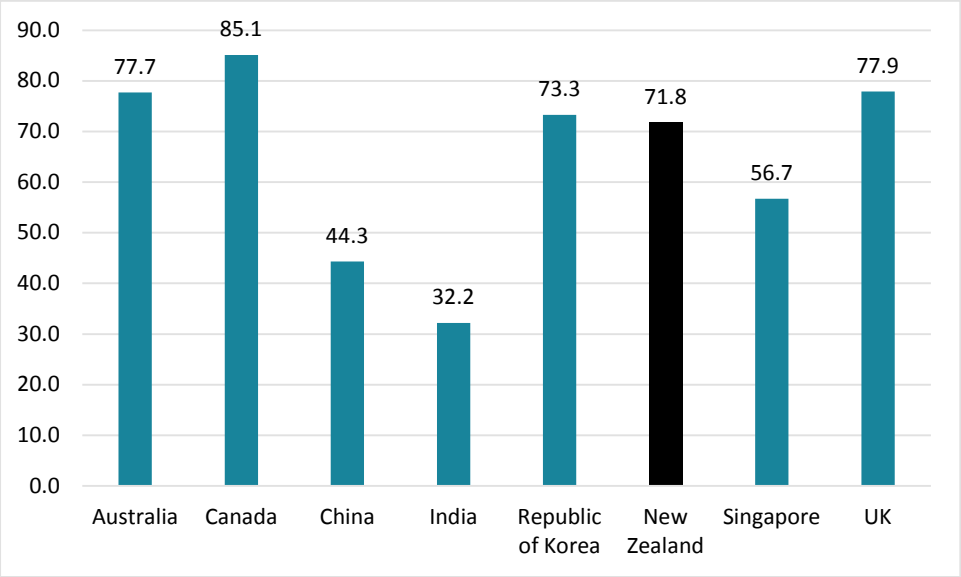


Figure 29 Score of access to advanced education by country, 2015

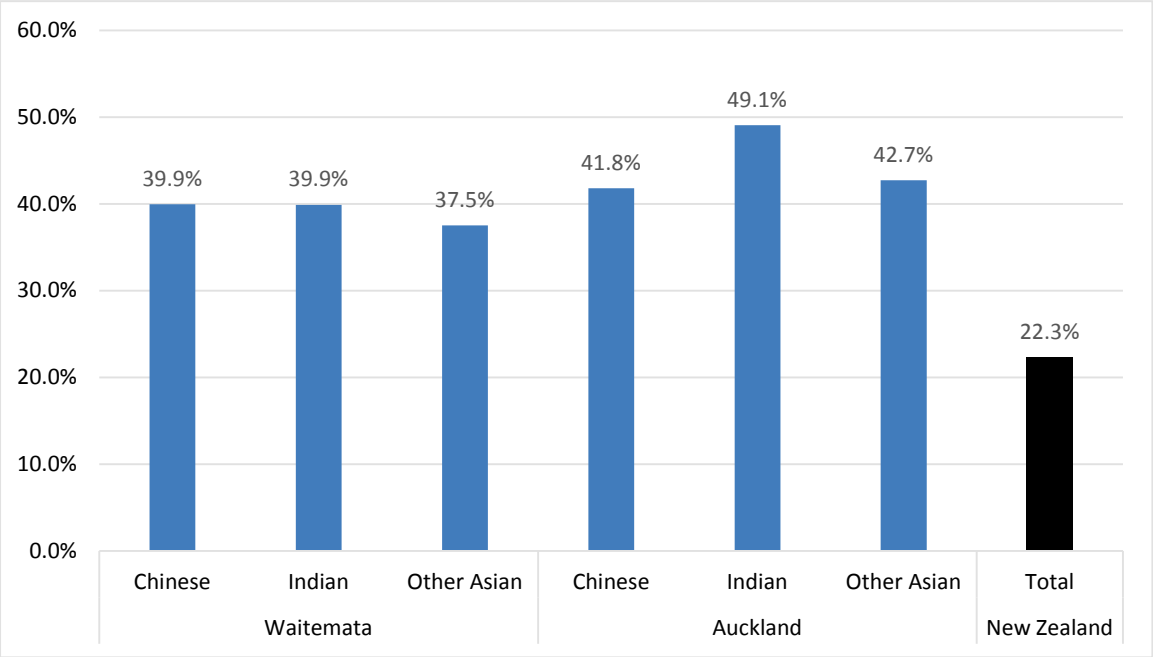
Outcome indicators of access to advanced education

Table 29 provides detailed information related to the outcome indicators that contribute to the component of access to advanced education. China had the lowest ranking of years of tertiary schooling (0.1 year, among people aged 25+ years) on the list and India scored the lowest for women's average years in school (8.9 years, among women aged 25-34 years). There were only two globally ranked universities in Singapore in 2015, while the UK had 74.

Table 29 Raw scores of outcome indicators of access to advance education, 2015

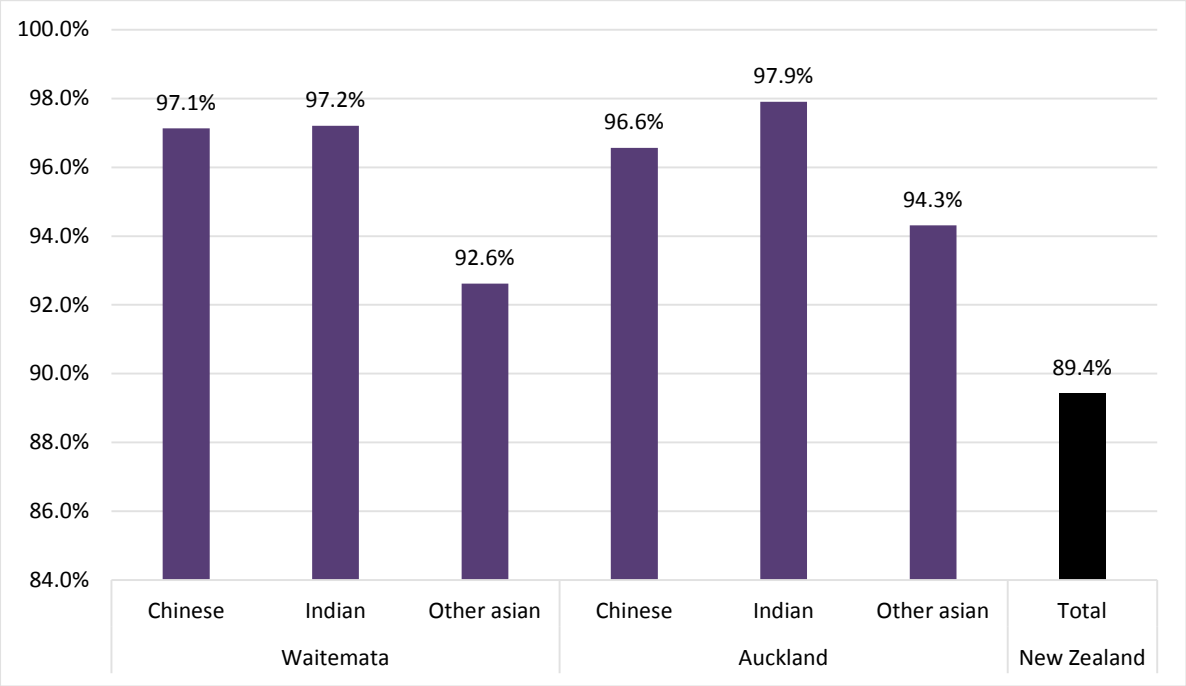
Country	Years of tertiary schooling	Women's average years in school	Inequality in the attainment of education	Number of globally ranked universities
Australia	1.3	12.5	0.018	33
Canada	1.5	15.0	0.040	26
China	0.1	8.9		46
India	0.3	5.6	0.421	14
Republic of Korea	1.5	14.6	0.281	24
New Zealand	1.1	13.6		8
Singapore	1.4	10.1		2
UK	0.9	13.6	0.026	74

Higher proportions of Asian peoples aged 25+ years in both DHBs had a bachelor degree/level 7 qualification or above when compared to the New Zealand average (22.3%), particularly true of Indian in Auckland DHB (49.1%; Waitemata DHB 39.9%). In addition, a higher proportion of Asian women aged 25-34 years in Waitemata and Auckland DHBs had a qualification (primary, secondary and tertiary) than the New Zealand average 89.4%. This is more so for Indian and Chinese in both DHBs. While these two indicators are not comparable to the ones used in the Social Progress Index, namely years of tertiary schooling and women's average years in school including primary, secondary and tertiary, they indicate a better place than the New Zealand average in the world ranking for the component of access to advanced education, as well as the overall opportunity.



Source: Census 2013, licensed to Waitemata DHB

Figure 30 Proportion of residents with a bachelor/level 7 qualifications or above, aged 25+ years, New Zealand, Census 2013



Source: Census 2013, licensed to Waitemata DHB

Figure 31 Proportion of women with a qualification, aged 25-34 years, New Zealand, Census 2013

Interpretation and reflection

New Zealand had the highest overall social progress index score in the world in 2015 and Asian peoples of both DHBs had higher proportions of having a bachelor degree/level 7 qualification or above (which could be attributed to New Zealand's Immigration policies), compared to the New Zealand average. The New Zealand's Migrant Settlement and Integration Strategy recognises that New Zealand gains the best economic and social benefits from migrants when they settle here successfully (MBIE, Settlement Strategy, 2016). The Strategy identifies five measureable settlement and integration outcomes to focus on:

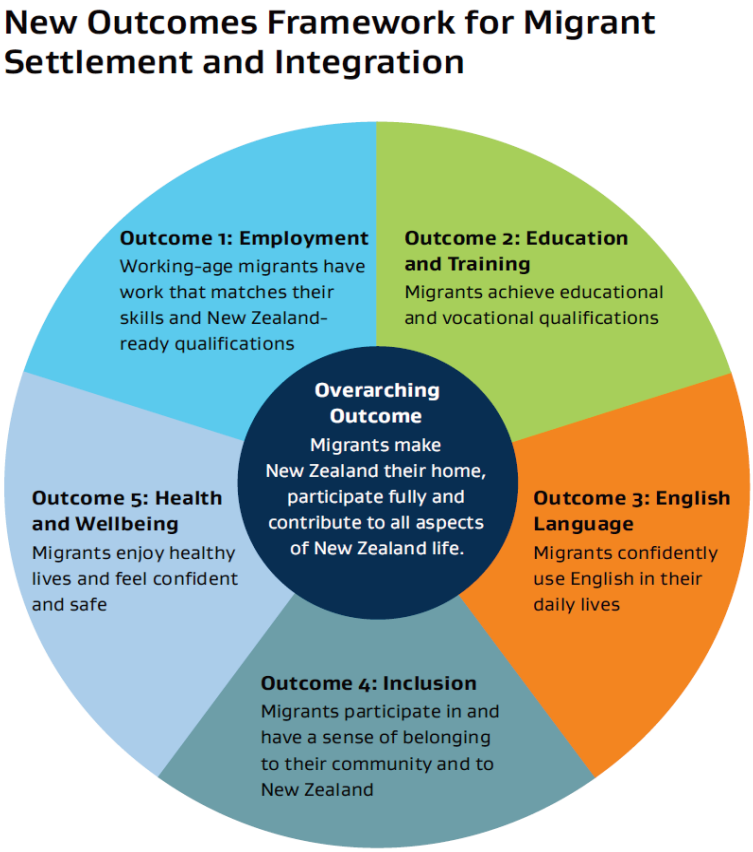


Figure 32 New Zealand's Migrant Settlement and Integration Strategy

Poor settlement experiences related to English language proficiency, unemployment or under-employment, and lack of sense of safety (real or perceived) and inclusion in New Zealand are significant determinants that contribute to poor health outcomes for Asian new migrants and their families/whānau.

Other national strategies that aim to improve the health of Asian populations from former refugee or international student backgrounds include:

- New Zealand Refugee Resettlement Strategy - Health & Wellbeing Outcome
- New Zealand International Student Wellbeing Strategy Outcomes Framework - Outcome 3: Health & Wellbeing.

Key findings

Outcomes, risk factors and health service use

Health Outcomes		
Life expectancy	• Both DHBs experience a higher life expectancy at birth (90 years, Waitemata; 89 years, Auckland; 92.9 years for Chinese in Waitemata) when compared to the comparator countries and to the Asian population of New Zealand.	
Cardiovascular diseases	• Both DHBs had the lowest rate of years of life lost (per 100, 000 population) from cardiovascular disease (Waitemata women 897, men 1,147; Auckland women 894, men 1,617).	
Cancer	• Both DHBs had among the lowest rates of years of life lost from cancer (Waitemata women 1,330, men 2,265; Auckland women 1,633, men 2,020).	
Mental health	• Both DHBs had lower overall years of life lost from Alzheimer's disease and other dementias than the total population of New Zealand (Waitemata women 118 per 100,000, men 129 per 100,000; Auckland 103 per 100,000, for both women and men).	
Diabetes	• Both DHBs had the lowest rates of years of life lost from diabetes (Waitemata women 154, men 204; Auckland women 174, men 212).	
Infant health	• Both DHBs had a combined infant mortality rate which was amongst the lowest (2.2 per 1,000 live births).	
Risk Factors & Prevention		
Tobacco smoking	• Both DHBs had slightly lower smoking prevalence among the Asian population (9.9%, Waitemata; 8.8%, Auckland) than the New Zealand average (19%) (NZHS) • The prevalence in Chinese men is among the highest in the Asian sub-groups (15.2%, Waitemata; 13.8%, Auckland) and higher than that of European/Other population • There is a large inequality in smoking prevalence between sexes, with Asian males having a smoking prevalence five to seven times higher than females.	
Obesity	• The rates of obesity in both DHBs (14.1%, Waitemata; 11.6%, Auckland) are lower than New Zealand as a whole • The DHBs' obesity rates are higher than many of the	

	comparative Asian countries • New Zealand had the highest all-cause mortality rate (60.8 per 100,000 population) attributable to high BMI.	
Physical activity	• Both DHBs had a lower prevalence for adults meeting the New Zealand guidelines for physical activity (30.5%, Waitemata; 45.2%, Auckland) than the New Zealand average (54.0%) • Both DHBs had the lowest prevalence of sufficient physical activity when compared to the comparator countries.	
Health service use	**Immunisation** • Both 8-month and 2 year old immunisation rates are above the 95% coverage target. Rates are similar to the best performing comparator country (China). **Cancer screening** • The cervical screening coverage rates for Asian women of both DHBs (66.3%, Waitemata; 66.0%, Auckland) were lower that the New Zealand average (76.7%) • Asian breast screening rate was lower in Waitemata (66.3%) than the New Zealand average (71.4%) and lower when compared to the comparator countries. **Health service utilisation** • Asian adults in New Zealand were less likely to have a usual health practitioner or service to visit when unwell (<90%) than other ethnicities • PHO enrolment rates among the Asian population remain well below that of other ethnicities of both DHBs (82%, Waitemata; 74%, Auckland).	
Social Progress		
Social progress index & opportunity	• Higher proportions of Asian peoples aged 25+ years in both DHBs had a bachelor degree/level 7 qualification or above than the New Zealand average (22.3%) • New Zealand had the highest overall social progress index score (87.1) among the comparator countries (2015) • Migrants in New Zealand experience the most equitable entitlement (Migrant Integration Policy Index report 2014) when compared to the comparator countries.	

Patient experience and community engagement/participation

Enhanced patient experience is a strategic priority and long-term outcome for the DHBs with the intent to engage patients and communities in the care they receive. Improving experience of health care services is an important indicator in assessing the quality of the care we provide and is strongly linked to overall health outcomes.

 **Patient experience of care**	
Values	The top four values Asians placed on their experiences and expectations of Auckland DHB health services were: 1. Excellence and professionalism 2. A professional connection with clinicians 3. Confidence about the level of care 4. Efficiency, productivity, and good processes.
Experience of healthcare services	• Asian patients of Auckland DHB are less likely to rate their overall care and treatment as 'very good to excellent' (81%), compared to non-Asians (NZ European 84%, Māori 84% and Pacific 84%) • 58.7% of Chinese patients of Waitemata DHB were 'extremely likely' to 'recommend our ward to friends and family if they need similar care or treatment', compared to non-Asians (NZ European 70%, Māori 69.2%, Samoan 65.2% and Tongan 58.8%).
Access to healthcare services	• Chinese of Auckland DHB Local Boards were more likely to rate their access to health care as 'low', compared to New Zealand Europeans • Factors attributing to a 'low' self-rating relate to 'cost' of services and quality issues such as 'availability/waiting times' at general practice.
International students	International students tended to: • have a lower level of understanding of New Zealand health and disability systems • be less likely to have a family doctor (GP) clinic to go to • have accessed ED at public hospitals significantly less, after adjusting for the effects of ethnicity.

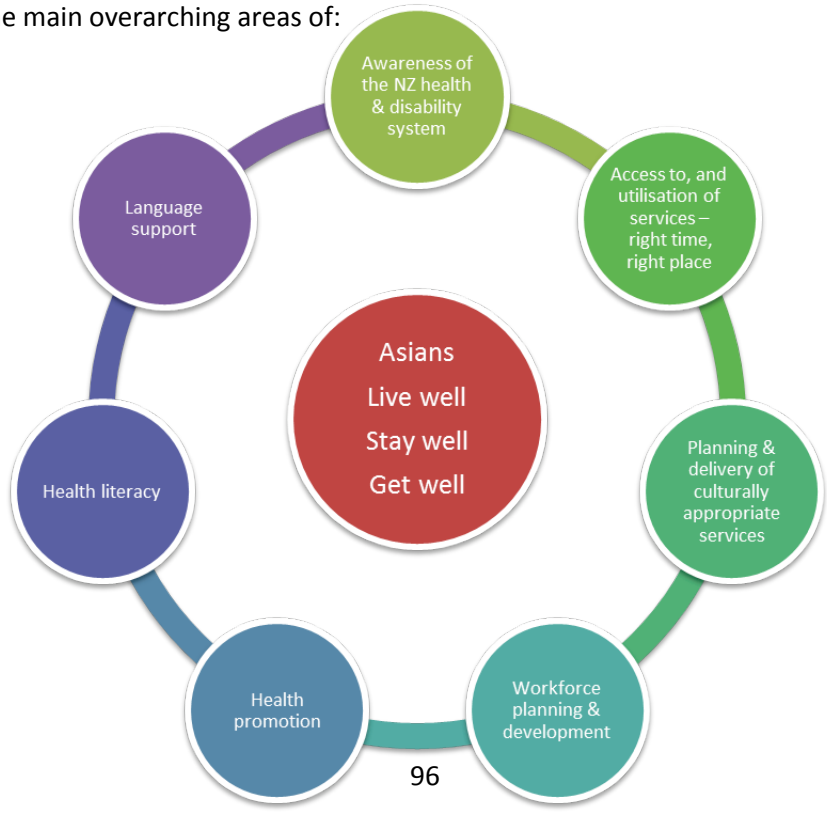
Reflections and next steps

The intent of this report is to profile and assess the health of Waitemata and Auckland districts' Asian population in an international context – considering their health status against our high level outcomes to maximise life expectancy and reduce inequalities in health outcomes. Areas of high and low performance, issues and unmet need for Asian subgroups, and suggested recommendations are highlighted with the intention of maintaining, improving or accelerating (if possible) health status where there are health outcome differences.

The overall findings within this report highlight that Asian populations of Waitemata and Auckland DHBs experience excellent health outcomes and health status compared to the rest of the New Zealand population and when benchmarked internationally. These areas include high life expectancy at birth, lower rates of infant mortality, and lowest rate of YLLs from CVD and cancer. The impact from diabetes for both DHBs was also low when considered internationally. These results are consistent with the well-established phenomenon of the 'healthy migrant effect'.

If we are to maintain or improve Asian health status we must address the disparities within Asian 'high-risk' subgroups associated with access to, and utilisation of health and disability services for newcomers, distribution of health determinants and risk factors, and a diminishing protective 'healthy migrant effect'. Disparities highlighted in this report include a greater risk of CVD for our South Asian population, and the higher Chinese risk of diabetes, youth mental health and childhood obesity.

The next step will include a follow-up report applying an Insight methodology as an opportunity for a 'deep dive' into identified Asian 'high-risk' subgroups. The intent is to provide greater understanding to funders and planners of best practice examples that have been developed to improve the responsiveness of healthcare services for key subgroups. As well, as the cultural nuances, drivers, barriers, and mediators that are protective and promoting where there are variations in health outcomes in the main overarching areas of:



Areas for focus

The key recommendations focus on the need to maintain and further improve the health outcomes our Asian populations already experience. Key areas for focus include:

Maintain health status

Life expectancy

- Continue to maintain Asian life expectancy at birth and lower rates of CVD and cancer mortality at country level.

Children get the best possible start in life

- Increase the proportion of Asian newborn infants enrolled with a PHO by three months of age and other child services.

Monitoring Asian & migrant health

- Granular data monitoring to level 4 at a national level as part of a systems solution
- Monitor separately the health of South Asian, Chinese and Other Asian populations in national and regional surveys.

Policy & legal frameworks

- Align efforts to national strategies:
  - New Zealand Health Strategy: Future direction
  - New Zealand Migrant Settlement and Integration Strategy's - Outcome 5: Health & Wellbeing
  - New Zealand International Student Wellbeing Strategy Outcomes Framework - Outcome 3: Health & Wellbeing
  - New Zealand Refugee Resettlement Strategy - Health & Wellbeing Outcome.

Asian & migrant sensitive health systems

- Increase Asian PHO enrolment rates, with the commensurate benefits of seeing one regular family doctor (GP)
- Support the People Strategy (Auckland DHB) to increase promotion of the CALD cultural competency courses.

Networks & partnerships

- Asian consumer voices are included in service co-design planning cycles.

Improve or accelerate health status

Reduce premature mortality from cardiovascular disease

The lowest premature mortality from cancer

- Increase culturally appropriate messaging to South Asian and other targeted ethnic groups about CVD and diabetes risk assessments and healthy lifestyle behaviours.

Achieve a smokefree Waitemata and Auckland by 2025 (<5%)

- Promote culturally appropriate smokefree information and messages to male Chinese

and Other Asian communities to achieve the Smokefree Aotearoa 2025 goal.

Reduce childhood obesity

- Work in partnership with Healthy Families Waitakere, the Healthy Babies Healthy Futures programme and other partners.

Children get the best possible start in life

- Promote awareness of the prevalence of measles and uptake of the 4-year immunisations in Asian communities.

Reduce morbidity and mortality for people with mental illness

- Work with Asian Mental Health Services (Auckland and Waitemata DHBs) to provide culturally appropriate support for Asian clients and their families.

Older people experience independence and quality of life

- Progress the roll out of the Cognitive Impairment Pathway and support the review of Day Programmes for older adults.

Patient experience

- At least 5% of Asian representatives join Reo Ora (Auckland and Waitemata DHBs).

Strategic approach

The Asian and MELAA Health Action Plan (Auckland and Waitemata DHBs) will be updated to address the areas of focus set out in this health needs assessment. This action plan will be overseen by the Asian & MELAA Health Governance Group (Auckland and Waitemata DHBs). Successful implementation of the action plan will require collaboration across the health sector.

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Appendices

Appendix 1 Healthy Migrant Effect

The 'healthy migrant effect' is a phenomenon where the health of first generation migrants is often better than the host population (Anikeeva et al., 2010) (Cunningham, Ruben & Narayan, 2008) (Gushulak et al., 2011) (Pasupuleti, Jatrana & Richardson, 2015) (Biddle, Kennedy & McDonald, 2007). This phenomenon is thought to occur for a number of reasons, mainly self-selection at the time of migration and the health prerequisites and resources associated with migration. This phenomenon generally manifests as lower mortality and hospitalisation rates, as well as lower rates of disability and risk factors, such as obesity and hypertension, when compared to the domestic population of the host country. Such health advantage often deteriorates with increased length of stay as explained by the lifestyle attitudes and behaviours adopted from the host population - known as 'acculturation'[6]. In many studies, acculturation is usually crudely measured by duration of residence since the time of immigration, and it plays a major factor in modifying the social, behavioural, and health characteristics of migrants, particularly of the Asian migrant groups (Singh & Hiatt, 2006) (Arcia et al., 2001) (Singh, Kogan & Yu, 2009).

In New Zealand, Asian peoples generally have good health that is comparable to the general population (Statistics New Zealand, 2016). Data suggests that people of Asian ethnicity or descent, as a whole, have favourable outcomes on a range of health indicators compared to other major ethnic groups in New Zealand (Abbott & Young, 2006) and like other migrants, this health advantage may be accredited to the 'healthy migrant effect'. However, relative to the New Zealand European ethnic group, the Asian group as a whole has lower rates of access to health services and health care utilisation, particularly by the Chinese population (Mehta, 2012). This includes primary healthcare enrolment, uptake of screening programmes, and access to mental health services, aged residential care and disability support (Jatrana & Crampton, 2009). Possible contributors to these disparities include stigmatisation, language barriers, cultural attitudes and behaviours, understanding of the New Zealand health and disability systems, and lack of cultural competency in the health workforce (Wong, 2015).

- Low physical activity rates
- Mental and substance use
- Low cervical and breast screening rates
- Youth – self harm and interpersonal violence
- Asian obesity rates.

Appendix 2 Summary of key highlights

Group	Area	Measures	Asian of Waitemata	Asian of Auckland	New Zealand[#]	Other Countries[#]
Risk factors	Tobacco smoking	ASR* of prevalence	Chinese (15.0%) and Other Asian (13.1%) men, regular smoking rate, comparable to/higher than European/Other	Chinese (13.8%) and Other Asian (12.9%) men, regular smoking rate, comparable to/higher than European/Other	The 2nd highest daily smoking rate for women (14.7%)	Republic of Korea (48.5%), highest daily smoking rate for men
	High body mass index	ASR of prevalence	Higher in all three Asian sub-groups (aside from Chinese women) than European/Other, ethnic cut-off criteria apply		Highest (29.2%), 18+ years, women and men and women only	Australia No 1 for men
		ASR of deaths, DALYs			Highest mortality rate of all causes attributable to high BMI (60.8 per 100,000), women and men combined; DALYs rate No 2, women and men	Australia No 2 and the UK No 3 in mortality rate attributable, women and men combined;
	Physical inactivity and low level of physical activity	ASR of prevalence	Higher rate (69.5%) not meeting the New Zealand guideline for physical activity than the NZ average; Potentially highest rate of insufficient activity compared to other countries (indirectly)	Higher rate (54.8%) not meeting the New Zealand guideline for physical activity than the NZ average	No 1 (39.8%) 'insufficiently active', adults aged 18+ years	The UK No 2
		ASR of DALYs			In the middle (541 per 100,000)	India No 1 (1025 per 100,000) and Singapore No 2 in DALYs rate
General health	Life expectancy at birth	Life expectancy at birth	90 years for Asian; 92.9 years for Chinese, the highest, compared to other countries	89 years for Asian	Comparable to other high income countries (NZ 82 years)	Singapore/Australia (83 years) , the highest; India (66 years), the lowest

Group	Area	Measures	Asian of Waitemata	Asian of Auckland	New Zealand[#]	Other Countries[#]
Total burden of disease	Total DALYs	ASR of DALYs, deaths, YLLs	Lower mortality rate than the Asia born Australians; Lowest rate of YLLs at country level	Mortality rate comparable to the Australians born in Asia	Total DALYs rate, comparable to other countries; Lowest rate for communicable, maternal, perinatal and nutritional conditions	India, highest total DALYs rate; Singapore, lowest total DALYs rate
Non-communicable diseases	Cardiovascular diseases	ASR of YLLs, YLDs and DALYs	Lowest rate of YLLs (937 YLLs per 100,000 women and 1,216 per 100,000 men) at country level; Indian and Other Asian had higher YLL rate than Chinese	Lowest rate of YLLs (934 YLLs per 100,000 women and 1,714 per 100, 000 men) at country level; Indian and Other Asian had higher YLL rate than Chinese	Lowest rate of YLDs; Comparable rate of DALYs to other countries	India, highest DALYs rate; China, the second highest
	Cancer	ASR of YLLs, YLDs and DALYs	Lowest rate of YLLs (1,134 YLLs per 100,000 women and 1,937 per 100,000 men) at country level	Lowest rate of YLLs (1,392 years of life lost per 100,000 women and 1,728 per 100, 000 men) at country level	New Zealand had the highest rate of YLDs, with comparable DALYs rate	China had the highest rate of DALYs
	Diabetes Mellitus	ASR of YLLs, YLDs and DALYs	Indian women and men and Other Asian men followed India and Korea closely in YLL rate at the country level	Variations of YLL rate within Asian sub-groups in Auckland were very close to the pattern in Waitemata	Among the best countries in DALYs rate	India had the highest DALYs rate, followed by Singapore and the Republic of Korea; The UK did the best in DALYs rate; Singapore had the highest YLD rate; India and Korea had the highest YLL rate
	Alzheimer's disease and other dementias	ASR of YLLs, YLDs and DALYs	Close to China and India but behind Singapore and the Republic of Korea, in YLL rate	Close to China and India but behind Singapore and the Republic of Korea, in YLL rate	Comparable rates to other 'Western countries' (mortality, YLLs and DALYs); highest in YLD rate	The Asian countries led by Singapore and the Republic of Korea had much lower burden of disease rates (mortality, YLLs and DALYs)

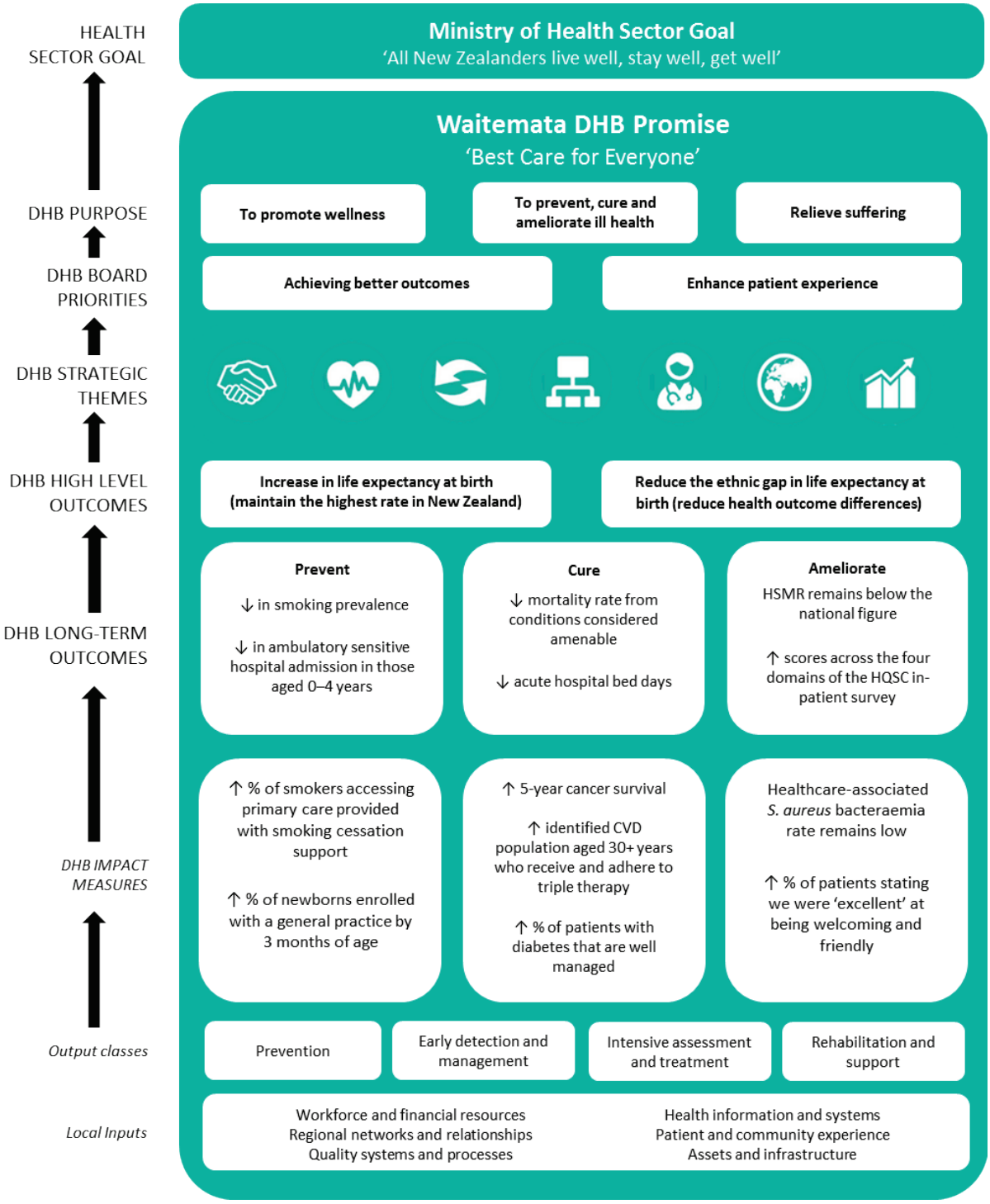
Group	Area	Measures	Asian of Waitemata	Asian of Auckland	New Zealand[#]	Other Countries[#]
Injuries	Self-harm and interpersonal violence	ASR of death, YLLs and DALYs	Among the top performers in YLL rate at the country level	Among the top performers in YLL rate at the country level	Higher mortality and DALYs rates just behind India, particularly for males, among youth (15-19 and 20-24 year olds)	India and the Republic of Korea had the highest mortality and DALYs rates
Maternal and infant health	Infant	Low birth weight rate	Indian had the highest rate (8.3%) among Asians, Waitemata DHB	Indian had the highest rate (12.2%) among Asians, Auckland DHB	Comparable to other countries except for India	India had a much higher rate (28%) than all other countries; China did the best (2.4%)
		Infant mortality	Top place at country level (0.2% per 1000 live births)[$]	Comparable to other countries except for India	Comparable to other countries except for India	Singapore had the lowest rate at 2 per 1000 live births
Health service use	Immunisation and cancer screening	Children's immunisation rate and women's cervical screening coverage rate	The cervical screening coverage rate was lower than that of the averages of New Zealand and the UK (Waitemata 66% in 2015)	The cervical screening coverage rate was lower than that of the averages of New Zealand and the UK (Auckland 66% in 2015)	The average cervical screening coverage rate was 76.7% (three-year coverage) for women aged 25-60 years	China is the top performer in children's immunisation coverage rate
Social progress index and opportunity	Access to Advanced Education	Tertiary education	Higher proportions of Asian people aged 25+ years in both DHBs had a bachelor degree/level 7 qualification or above when compared to the New Zealand average (22.3%), particularly true of Indian in Auckland DHB (49.1%)		The highest overall social progress index score of the countries compared in 2015; access to advanced education, behind	Canada had the highest score of access to advanced education, with India and China the lowest

* ASR, age standardised rate

Comparisons made among New Zealand, Australia, Canada, the UK, China, India and the Republic of Korea

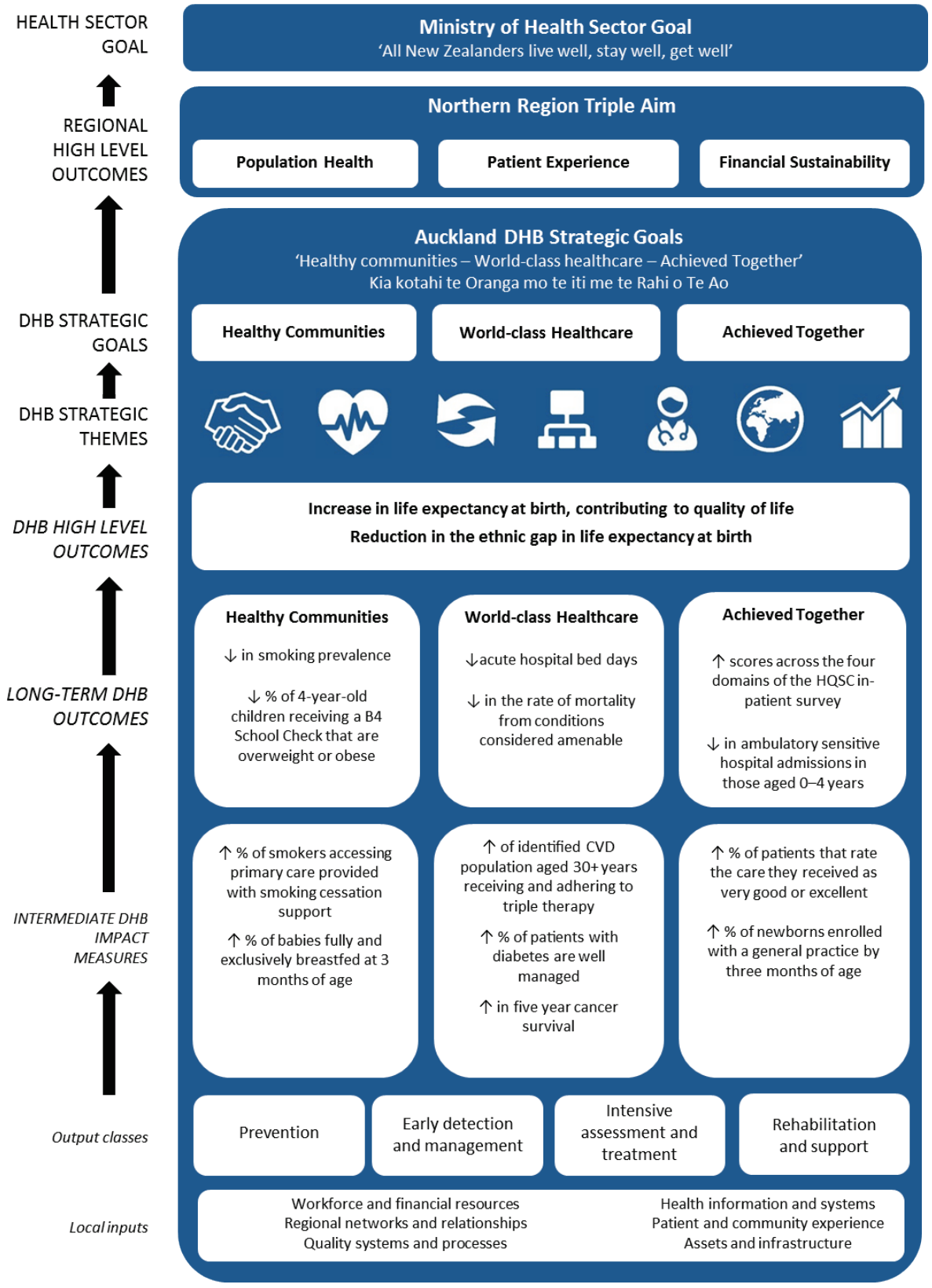
$ Acknowledging potential random variation

Appendix 3 Outcomes framework and intervention logic, Waitemata DHB



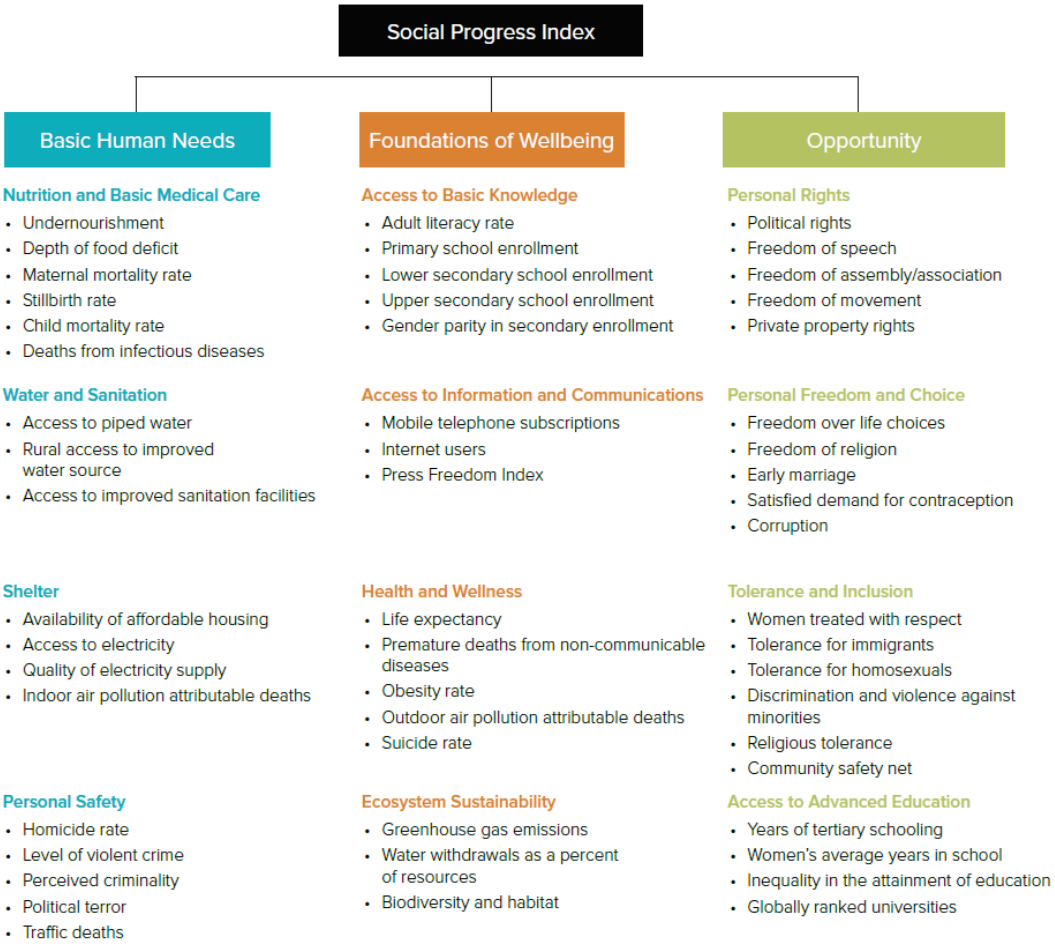
Source: 2016/17 Annual Plan, Waitemata District Health Board

Appendix 4 Outcomes framework and intervention logic, Auckland DHB



Source: 2016/17 Annual Plan, Auckland District Health Board

Appendix 5 Social Progress Index Indicator-level Framework[7]



7 http://www.socialprogressimperative.org/system/resources/W1siZiIsIjIwMTUvMDQvMDgvMjMvMjMvNTMvNDAyLzIwMTVfU09DSUFMX1BST0dSRVNTX0lOREVYX0ZJTkFMLnBkZiJdXQ/2015%20SOCIAL%20PROGRESS%20INDEX_FINAL.pdf accessed 14 April 2015.

Appendix 6 Asian health beliefs about health services and engaging with health practitioners

Health services	Asian health beliefs
Child health	**Feedback by Asian families using Child Disability Services (Waitemata DHB)** **Barriers** • No knowledge of service's existence • Hard to understand the health system differences with those of home country • Introducing and explaining agencies such as Taikura Trust, CCS Disability Action, Ministry of Education, WINZ, and Housing NZ, and their roles in providing care for children with disabilities • Interpreting services and information about interpreting services in the DHBs **Enablers** • More cross cultural resources needed regarding general health and disability information • Healthcare, disability and culture related publications • Family support networks, social activities, such as multicultural playgroups • Disability awareness for stigma attached to disability • Access programmes for example: coping strategies, behaviour support Source: Waitemata DHB. (2016). Perspectives from CALD Cultural Case Worker (Asian), Child Disability Service.
Screening	
Breast & Cervical	**Feedback by Asian women using women's health screening programmes and services** **Barriers** • Communication difficulties (different languages, lack of time) • No after-hours or weekend services • Health literacy problems • Screening is not considered relevant or important

Health services	Asian health beliefs
	• Embarrassment • Cultural insensitivity and incompetence • Cold room • Fear of lack of confidentiality • History of sexual abuse • Fear or distrust of the process and/or the results • Obesity where there is discomfort and embarrassment • Transience, no fixed abode • Previous bad experience • Lack of time, transport, childcare • Cost • Being unprepared (for an opportunistic smear) • Difficulty in taking time off work • Lack of trust in health care system • Lack of community and family support • Concept of "preventive care" is foreign • Reassurance about the procedures • Perceptions about invasive procedures • Promotion often in English • Unclear about facts • Aotearoa line in English • Access to interpreter services Source: Mixed Asian feedback from Asian ethnic partner groups in the Waitemata and Auckland DHBs (2015)
PHO enrolment	**Barriers to PHO enrolment for Asian populations** • Didn't see the need to register/enrol at a GP • Cost as it was too much to see a GP • Not sure about the role of a GP • Don't know how to register/enrol with a GP • Don't know where to register/enrol • Previous bad experiences with GP/healthcare services • Language barrier • Different cultural approaches • Issues with claiming the GP fees with medical insurance provider • Transport • Readiness to seek out information • Knowledge of settlement service touch points • Competing information at orientation workshops during early settlement stages which leads to

Health services	Asian health beliefs
	information overload and loss of retention • Access to up-to-date and correct information by partners and providers • Access to information in multiple languages across mixed communication methods i.e. social media, face-to-face workshops and hardcopy collateral. Sources: Mehta S. (2012). Health needs assessment of Asian people living in the Auckland region. Auckland: Northern DHB Support Agency. Auckland DHB. (2016). Report on Student Awareness of Health Services and Health Information in the Auckland District. Auckland: Auckland DHB.

Appendix 6.1 Asian experiences about cervical smears

Asian subgroup enablers to increased uptake of cervical smears for Korean, Chinese and Japanese women in the metropolitan Auckland region.

Korean	**Chinese**	**Japanese**
1. Going for a cervical smear is very different to going to the doctor with a cough. If you needed advice on cervical screening and its relevance to you, and where to go for a smear, who would you talk to?		
• Friend • Church member • Neighbour (any ethnicity) • Family in Korea • Korean nurse	• GPs or nurses • Asian community agencies • Family Planning *Suggestion: need for more data, more promotion through different media and using different languages*	• GP or Nurse • Close friends that can be trusted and are non-judgmental
2. What can be done to make the whole process of going for a smear easier or more acceptable?		
• Female smear taker with relaxing technique • Convenience of appointment (aligned to medical check-up) • Communication in Korean language • Low cost or free	• Mobile services at weekends • Use of appropriate Asian language especially for the first time • Free or low-cost services	• Regular contact, and notices • Setting up a bidet (washlet-toilet-Japanese style • Handy location • Low cost
3. Think about the different age groups for the eligible women in your community between 20-69 years of age. What are the barriers or enablers they experience?		
• Culture and enhanced level of embarrassment • Lack of information about the procedure • Myth e.g. if no partner, no need	• 20-30 years: attend to cultural barriers, and low awareness • 31-50 years: home visits, more promotion, weekend services • 51-69 years: information in Asian languages	• Raising awareness • More information so that they can feel familiar • Discussing the concerns and misunderstandings (many websites give the impression that cervical cancer occurs if you have many

		sexual relationships, therefore there is a shame attached, with the association with feeling dirty etc.
Comments		
• Korean women may prefer the smear to be done by a doctor rather than a nurse as they may not trust the quality of the process, being used to specialists doing these tests in Korea • Women may have had a hysterectomy and not know if they still have a cervix. The notes do not always travel with the woman when she relocates to New Zealand • There is dissatisfaction with the service e.g. lack of cultural awareness, and not having the smaller speculum available, when the smaller build of Asian women makes this obviously appropriate • Women would appreciate services being "packaged" and all checks being available at the same time and same place as they are at home • Daughters can help promote cervical screening to their mothers, where they have less difficulty in understanding the literature, and hence the relevance and benefits of having a smear Source: Report from the Auckland Regional Cervical Screening Project Manager on Consultation with Japanese, Korean and Chinese women regarding Cervical Screening (2013).		

Appendix 6.2 Asian bowel screening participation experiences

Barriers and enablers to bowel screening participation for Korean, Chinese and South Asian groups in the Waitemata DHB.

Korean	**Chinese**	**South Asian (primarily Indian)**
1. What are the barriers preventing you from doing the bowel screening test?		
• Language barrier • Attitude - I am healthy enough - I rather not know - The test is too simple – looks not effective - Too busy – I have more important things to do • The test looks complicated/difficult to do	• Language barrier • Don't understand the difference between the New Zealand health system, and the health system in mainland China or other Asian countries • I am healthy - I don't need to do the test • The test looks complicated/difficult to do • I would rather not know	• Indian community is very conservative- don't like to speak about embarrassing health issues • Language barrier • Fear of the unknown • The test is not reliable- used to larger samples • Other health priorities • I would rather not know
2. What can be done to help you do the test?		
• Translation of resources • Easy explanation about the test programme in my own language (from follow up phone call): - Why periodic screening is necessary - How the test is effective - Home visits to show how the test is done	• Translation of resources • Highlight that the test is free • Easy explanation about the test programme in my own language (from follow up phone call): - Why periodic screening is necessary - How the test is effective - Home visits to show how the test is done	• Translation of resources • Easy explanation about the test programme in my own language (from follow up phone call): - Why periodic screening is necessary - How the test is effective

Korean	**Chinese**	**South Asian (primarily Indian)**
3. What other support do you need?		
• Doctor's recommendation is very effective • Media promotion- raising awareness of the programme so people start discussing it • Community & family support	• Include family and educate why it is important for me • Doctor recommending me to do the test • Community support- through discussing at community meetings etc. • Media promotion	• Include family and educate why it is important for me • Doctors recommending me to do the test • Education around what bowel cancer is • Radio promotion
Comments		
• The premise of grasping the 'screening' concept is still an issue as many will do the test once but may not understand why they have to do it again. • Follow-up phone calls have been crucial for the Asian community in regards to providing information in their own language and educating why it is important to take the test. This has resulted in a participation rate that is higher than the overall Programme's participation rate. • Many Korean people have colonoscopies overseas so may not be eligible • Family members can help promote bowel screening to their parents/other family members, where they have less difficulty in understanding the resources, and hence the relevance and benefits of taking the test. Source: Waitemata DHB. (2016). Bowel Screening Community Team.		

Appendix 6.3 Asian experiences about health and diabetes checks

Barriers and enablers to heart and diabetes checks, and diabetes self-management for eligible Chinese and Korean groups in the Waitemata DHB.

Chinese	**Korean**
1. What are barriers that stop you from doing the heart and diabetes check?	
• Lack of understanding of heart & diabetes information • Low health literacy due to language barrier (19% of non-English speaking population at Waitemata DHB) • Cost involved (e.g. GP visits) • Busy lifestyle: No time to visit health professionals during weekdays (under 45yrs) • Lack of food/nutritional information & knowledge • Lack of information about availability of health services availability • Hardship using public transport to access health services • Some of them still think gaining weight is a good sign of wealthy and good life (elderly) • No help to seeking/fear of diagnosis	• Lack of understanding of heart/diabetes information • Low health literacy due to language barrier (26% of non-English speaking population at Waitemata DHB) • Lack of food/nutritional information & knowledge • Lack of information about availability of health services availability • No help to seeking/fear of diagnosis • Cost involved (e.g. GP visits) • Busy lifestyle i.e. busy during weekdays • Lack of transport (elderly or women) • Some of them still think gaining weight is a good sign of wealthy and good life (elderly)
2. If you need advice on diabetes, its relevance to you, and where to go for a diabetes check, who would you talk to?	
• GPs (Chinese or Kiwi) and nurses • Chinese herbal doctors • Asian community agencies • Ask for information from family/friends • Internet searching: online Q&A e.g. www.baidu.com	• GPs (Korean or Kiwi) or nurses • Korean pharmacists • Herbal doctors • Ask for information from family/friends or church members • Internet searching: online Q&A e.g. www.naver.com
3. What can help you with self-management of your diabetes?	
• Health professionals with Chinese language skills • Interpreter if no Chinese health professional available	• Health professionals with Korean language skills • Interpreter if no Korean health professional available

<table>
<tr><th>Chinese</th><th>Korean</th></tr>
<tr><td>• Professional practices that satisfy patients' cultural needs
• Convenience of making/attending appointments
• Weekend services for full-time workers
• Free or low-cost services/free parking
• Handy location (close to public transport)
• Translated diabetes information and resources
• Diabetes self-management courses facilitated by Chinese health professionals and dieticians
• Chinese diabetes support group (local)</td><td>• Professional practices that satisfy patients' cultural needs
• Convenience of making/attending appointments
• Weekend services for full-time workers
• Free or low cost services
• Handy location (close to public transport)
• Translated diabetes information and resources
• Diabetes self-management courses facilitated by Korean health professionals and dieticians
• Korean diabetes support group (local)</td></tr>
<tr><td colspan="2">4. What other support do you need? Think about the different age groups of eligible people in your community between 20-69 years of age</td></tr>
<tr><td>• 20-40 years
- low awareness
- high number of pregnant women with diabetes
• 41-65 years
- cultural & language barriers
- more promotion and availability of weekend services
- more information in other Asian languages
• 65+ years
- cultural & language barrier
- more information in Asian languages</td><td>• 20-30 years
- low awareness
- high number of junk food intake
• 31-50 years
- cultural & language barriers
- more promotion and weekend services
- more information in Asian languages
• 51+ years
- cultural & language barriers
- more information in Asian languages</td></tr>
<tr><td colspan="2">Comments</td></tr>
<tr><td colspan="2">• There is dissatisfaction with the mainstream services, e.g. lack of cultural awareness
• Asian foods are different from European foods. Therefore, mainstream food guides don't work for many Asians.
• Lack of Asian workforce in the diabetes service area i.e. limited number of Chinese dieticians, and no Korean registered dietician in New Zealand.
• Suggestions include need for more data, more promotion through Asian media using different languages.

Source: Waitemata DHB (2016). Asian Health Service.</td></tr>
</table>

Appendix 6.4 Preliminary summary for Indian, Chinese and Korean focus group about living with pre-diabetes and type 2 diabetes

Preliminary findings by the Waitemata DHB, Diabetes Service employee completing her PhD aimed at 'Designing and testing an online diabetes nutritional education programme for the New Zealand population'. A focus group was conducted in 2015-16 'Exploring emotions, knowledge and nutritional support in different ethnic groups living in New Zealand with pre-diabetes and type 2 diabetes. Participants included Asian groups from Chinese, Korean and South Asian (Indian) backgrounds.

Ethnic group	**Preliminary findings**
Indian	• All Indian participants have a strong desire to stay healthy and stop diabetes progression • Many Indian participants are worried about limited diabetes support in the Indian community • All Indian participants preferred clinicians to look after their diabetes • Amongst the participants, there was incomplete knowledge of Type 2 diabetes management, nutrition and diabetes medications. Some struggled to remember scientific terminologies leading to confusion which can be linked to issues of health literacy
Chinese and Korean	• All participants wanted to improve their diabetes and nutritional knowledge • Most participants were satisfied with their diabetes care • Concerns about inadequate consulting time
Source: Waitemata DHB. (2016). Diabetes Service employee completing her PhD aimed at designing and testing an online diabetes nutritional education programme for the New Zealand population.	

Appendix 6.5 Asian Mental Health Services' experiences

Barriers and enablers to access and use of Asian mental health services for Korean, Chinese and South Asian groups in both Waitemata and Auckland DHBs.

<table>
<tr><th>Korean</th><th>Chinese</th><th>South Asian (primarily Indian)</th></tr>
<tr><td colspan="3">1. What are the barriers preventing you from accessing and using mental health services?</td></tr>
<tr><td colspan="3">• Did not know mental health care services existed
• Did not know how to access services
• Believed the problem was not severe enough
• Shame tends to equate mental ill health to "craziness" and will be locked up
• Accessed other support instead of mainstream services (e.g. traditional healer, alternative therapies and spiritual and religious help)
• Believed services were not culturally appropriate
• Language issues or concerns
• Cost of service was a concern
• Issues with transportation
• Risk of stigma from the community was a concern
• Fear of personal shame and embarrassment
• Fear of being segregated or rejected
• Family did not support them accessing mainstream health care
• Concerns about their residency status
• Concerns about how accessing mental health services would impact on their future endeavours (e.g. education, employment and marital status)
• The concept of Mind and Body Inseparation encourages help seeking through physical practitioners
• Has a different definition of Mental Disorder, hence may report symptoms differently
• Prefers a "quick fix"
• Western medicine is too "toxic" and the side effects are too strong, more incline to seek traditional medicine which are perceived as "milder and less toxic"
• Worry about being "addicted" to Western medicines
• Male pride - men should be mentally stronger than women
• Small community and worried about gossip
• Accessing to service could be related to the level of acculturation and years in New Zealand</td></tr>
<tr><td>• Stigma
• Cultural barriers
• Language
• Use of alternative therapies</td><td>• Stigma
• Cultural barriers
• Language
• Use of alternative therapies</td><td>• Stigma
• Cultural barriers
• Use of alternative therapies
• Immigration</td></tr>
</table>

<table>
<tr><th>Korean</th><th>Chinese</th><th>South Asian (primarily Indian)</th></tr>
<tr><td>Distrust of mainstream services
Immigration
Lack of awareness of services
Unfamiliarity with the structure of health care services</td><td>Distrust of mainstream services
Immigration
Lack of awareness of services
Unfamiliarity with the structure of health care services</td><td>Lack of awareness of services
Unfamiliarity with the structure of health care services</td></tr>
<tr><td colspan="3">2. What can be done to help you to better use the mental health services?</td></tr>
<tr><td colspan="3">A clearer road map or information line for Asian communities to enable them to access information about mental health services and service access criteria (three top Asian languages)
Service information is easy and simple to understand
Encourage early help seeking behaviour in order to avoid crisis interventions
Addressing stigma and discrimination associated with mental illness, i.e. programme such as Like Minds, Like Mine Chinese Media Campaign, Kai Xin Xing Dong
Psychoeducational information available to the general public in Asians languages (Chinese & Korean) to start with since these two are the largest non-English speaking Asian population in the Waitemata district
Use of the ethnic TV/media to help demystify “mental ill health”, focusing on recovery
Working with GPs, given the physical explanation of mental illness, meeting at GP clinic may also help to “neutralise” the stigma
Seeing more Asian faces working in the Mental Health System to show that the DHBs are aware of my cultural needs
eCALD™ training to upskill staff on cross cultural clinical practice
Working with the traditional healers for engagement purposes
A ‘One Stop Shop’ health centre similar to the services provided by the home countries
Increasing the emphasis on cultural sensitivity of mental health services are available and able to meet the need of individual, i.e. eCALD™ training
Promoting the use of interpreter services for primary health and secondary services
Establishing an Asian Mental Health Community Awareness Working Group to develop a strategy that:
connects with Asian communities to address issues relating to stigma and discrimination in mental health through inter-sectorial links
raises awareness of mental health services which will result in an early engagement with services and improve mental health literacy.</td></tr>
<tr><td colspan="3">3. What other support do you need?</td></tr>
<tr><td colspan="3">Timely access for clinical cultural specialist consultation
Timely access for matching language individual and group therapy interventions</td></tr>
</table>

Korean	Chinese	South Asian (primarily Indian)
• Regular support group for mental health clients who may also be a parent • Regular clinical intervention parenting programme in both Mandarin and Korean • Parents/family support groups • More NGO non-clinical community support services • Well trained and professional Interpreter Services		
Comments		
There is evidence that the Asian populations are delaying seeking mental health services until they are acutely unwell. • Research indicates that there are multiple factors contributing to the barriers of access mental health services. • These barriers occur at an individual, community and societal level impeding the ability of Asian people to engage with mental health services. • There is evidence of multiple services nationally and internationally that have addressed these issues. • The practical interventions utilised by services to address access issues include services that are multilingual, culturally sensitive and community focused. • No single model can successfully overcome all of the access barriers that exist, most of the models focus on diminishing the impact of specific barriers. • Addressing the factors outlined above to improve access to mental health services will reduce the inequities that exist for some of the Asian populations compared to other populations in regards to utilising mental health services. Ultimately increasing access to health services will enhance Asian health outcomes and reduce health inequalities. Sources: Waitemata DHB. (2016). Asian Mental Health Team. Auckland DHB. (2016). Asian Mental Health Services.		

Appendix 6.6 Asian participation experiences about the Healthy Babies Healthy Futures project

Knowledge gain and behaviour changes reported by participants who attended Healthy Babies Healthy Futures workshops and activities provided by the Chinese New Settlers Service Trust and The Asian Network Inc , pregnant women, new mothers, fathers and their families. Experiences participating in the Healthy Babies Healthy Futures project for Chinese, Korean and South Asian groups in both Waitemata and Auckland DHBs.

Chinese pregnant women (n=31)	**Korean mothers and supporting family members (n=21)**	**South Asian mothers (n=47)**
• Making own lunch rather than buying already made food • Eating more vegetables and fruit • Drinking more water than soft drink and trying to reach 8 cups per day • Drinking water, not juice • Walking after dinner with husband at least half hours per day	• Use IT (Mobile, Internet) effectively for communication • Feel more confident to do active movement with baby • Know how to use various toys and house materials to exercise with baby • Utilise active movement differently with music • Gain confidence for cook with Korean ingredients • Avoid junk food or fast food	• New ideas of feeding fruit to their toddlers e.g fruit kebabs • Different ways of motivating kids and toddlers to increase fruit intake by making it fun • Best time for starting solids and preparation methods • Buying nutritious food on budget • Menu planning • Simple 1 minute exercise challenges • Alternatives or substitutes to decrease salt, sugar and decrease fat e.g. air-fried and not deep fried
Source: Reports from the Chinese New Settlers Service Trust and The Asian Network Inc., Quarter 3 from 01/01/16 – 01/04/16.		

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