

Profiling New Zealand's 20 District Health Boards using the New Zealand Index of Multiple Deprivation (IMD) and the 2013 census



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Statistics New Zealand Disclaimer

The results in this report are not official statistics, they have been created for research purposes from the Integrated Data Infrastructure (IDI), managed by Statistics New Zealand. The opinions, findings, recommendations, and conclusions expressed in this paper are those of the author(s) not Statistics NZ or the University of Auckland.

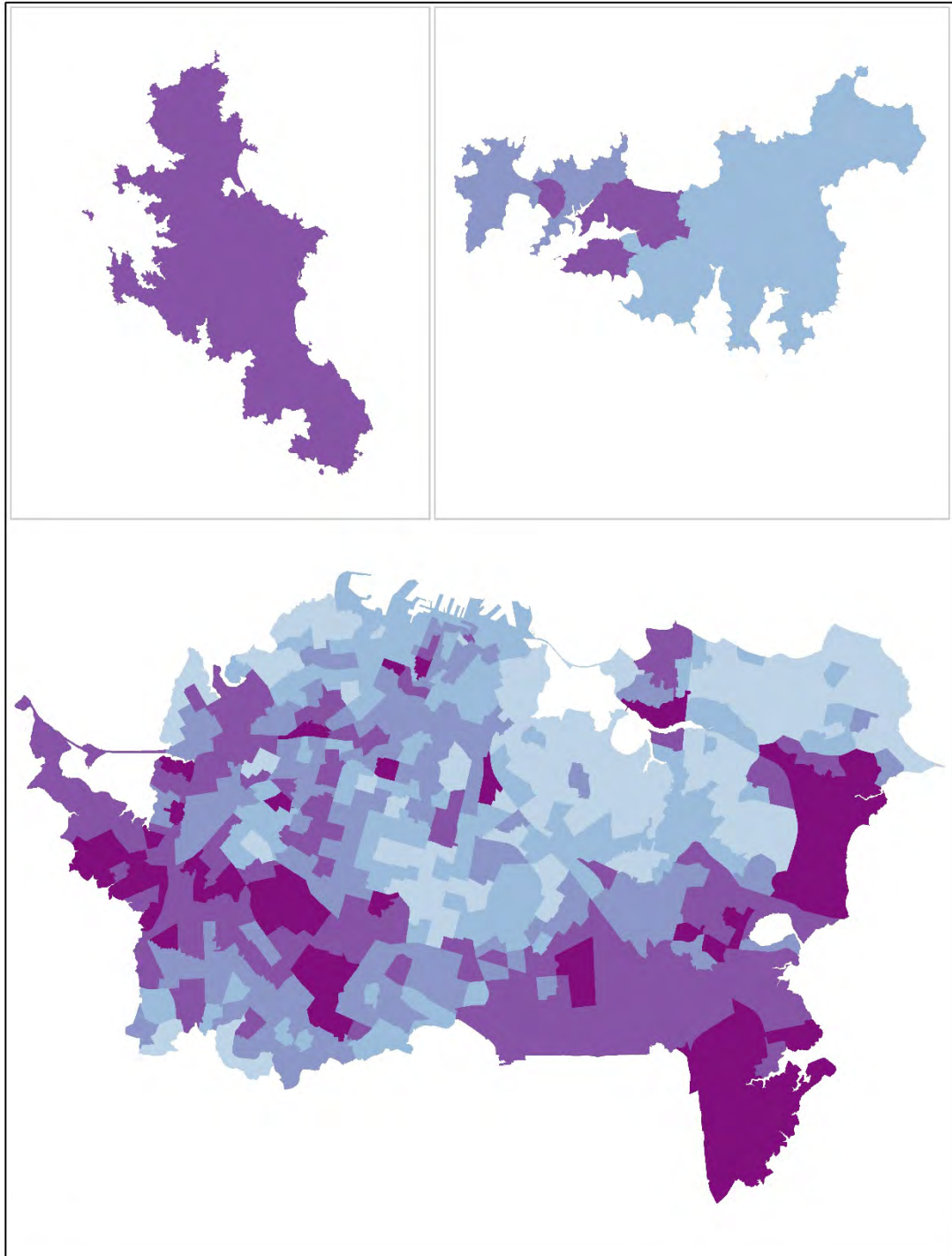
Access to the anonymised data used in this study was provided by Statistics NZ in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business, or organisation and the results in this paper have been confidentialised to protect these groups from identification. Careful consideration has been given to the privacy, security, and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.

The results are based in part on tax data supplied by Inland Revenue to Statistics NZ under the Tax Administration Act 1994. This tax data must be used only for statistical purposes, and no individual information may be published or disclosed in any other form, or provided to Inland Revenue for administrative or regulatory purposes. Any person who has had access to the unit-record data has certified that they have been shown, have read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

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The research team are grateful to the Health Research Council of New Zealand for funding this research project. This research would not have been possible without the provision of data, expert guidance and support of many individuals and the following organisations: Accident Compensation Corporation, Action on Smoking and Health, Aotearoa People's Network *Kaharoa*, ANZ Bank, ASB Bank, Association of Public Library Managers Inc., Auckland Uniservices Ltd, Auckland University of Technology, Beacon Pathway, BNZ Bank, BRANZ, Child Poverty Action Group, COMET Auckland, Counties-Manukau DHB, Department of Corrections, Energy Efficiency and Conservation Association, Family Start, Heart Foundation, Housing New Zealand Corporation, Inland Revenue, Kiwibank, Leeds University, Maritime NZ, Massey University, Ministries of Business, Innovation and Employment, Education, Health, Justice and Social Development, National Collective of Independent Women's Refuges, *Ngāti Whātua o Ōrākei*, Northland DHB, New Zealand Certified Builders Association, NZ Fire Service, NZ-Libs, NZ Police, NZ Post, NZ Racing Board, Royal New Zealand College of General Practitioners, Ollivier & Company, Otago University, Participants in the Feb 2014 and Feb 2017 hui, Pharmac, Plunket, Prisoners Aid and Rehabilitation Trust, Problem Gambling Foundation, Salvation Army, St John's Ambulance, Southern African Social Policy Research Institute, Statistics New Zealand, TSB Bank, *Tairāwhiti* DHB, *Te Kāhui Mana Ririki Trust*, *Te Kupenga Hauora Māori*, *Te Matapihi he tirohanga mō te iwi* Trust (National Maori Housing Trust), *Te Rūnanga o Ngāti Hine*, *Te Wānanga o Aotearoa*, *Te Whānau O Waipareira Trust*, Telco2 Ltd, Tenancy Tribunal, University of Auckland, University of Canterbury, University of Otago, University of Oxford, Waikato University, *Waitemata* DHB, Wellington Free Ambulance, Westpac Bank, and Woopa Design.

Auckland DHB



Auckland DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Auckland DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

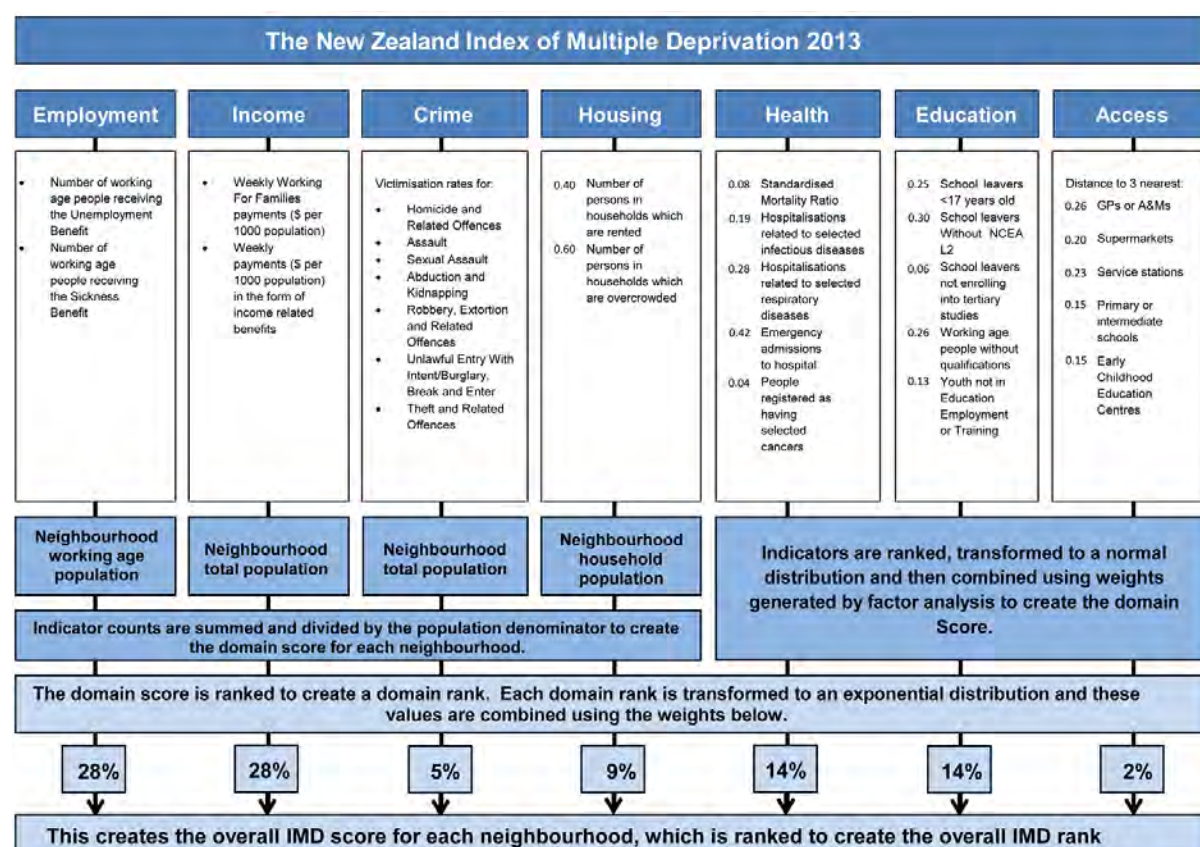


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Auckland DHB (ADHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same as for all of NZ, we would see 20% of the ADHB's 592 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 overall IMD deprivation and Q5 income deprivation was less than 20%, while the proportion with Q5 crime and housing deprivation was significantly greater than 20%. The ADHB has slightly lower than average overall IMD deprivation, with 36.5% (216/592) of its data zones either in Q4 or Q5.

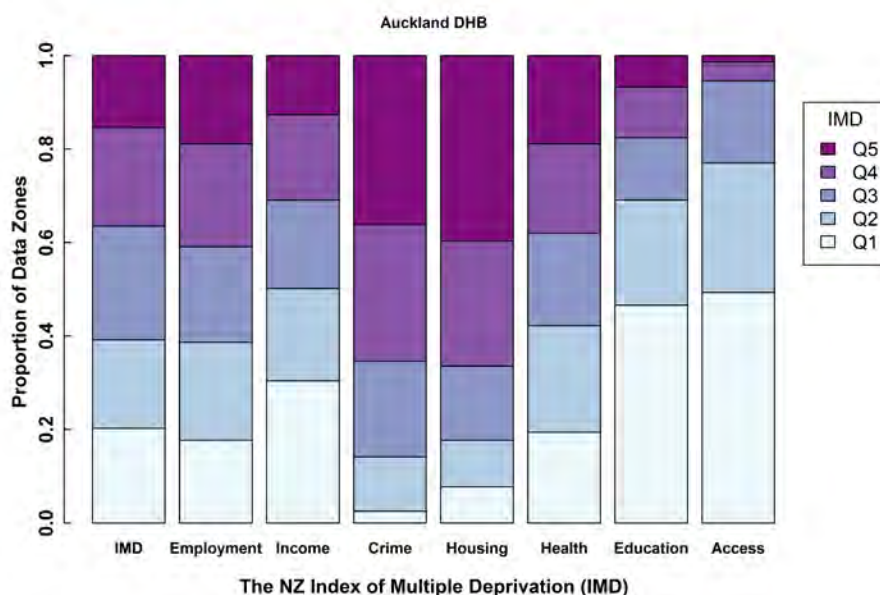


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the ADHB

Table 1 shows summary statistics by domain for 91 ADHB data zones that were among NZ's 20% most deprived (Q5) for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Housing (5752), Employment (5544) Health (5374) and Income (5227) were contributing to high overall deprivation in these 91 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ¹ deprivation ranks by domain for 91 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4771 | 4014 | 3089 | 1042 | 3699 | 1738 | 416 | 11 |
| Max | 5928 | 5941 | 5851 | 5923 | 5954 | 5950 | 5858 | 3981 |
| Median | 5399 | 5544 | 5227 | 4704 | 5752 | 5374 | 4563 | 863 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 91 data zones in the ADHB with Q5 IMD deprivation

¹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

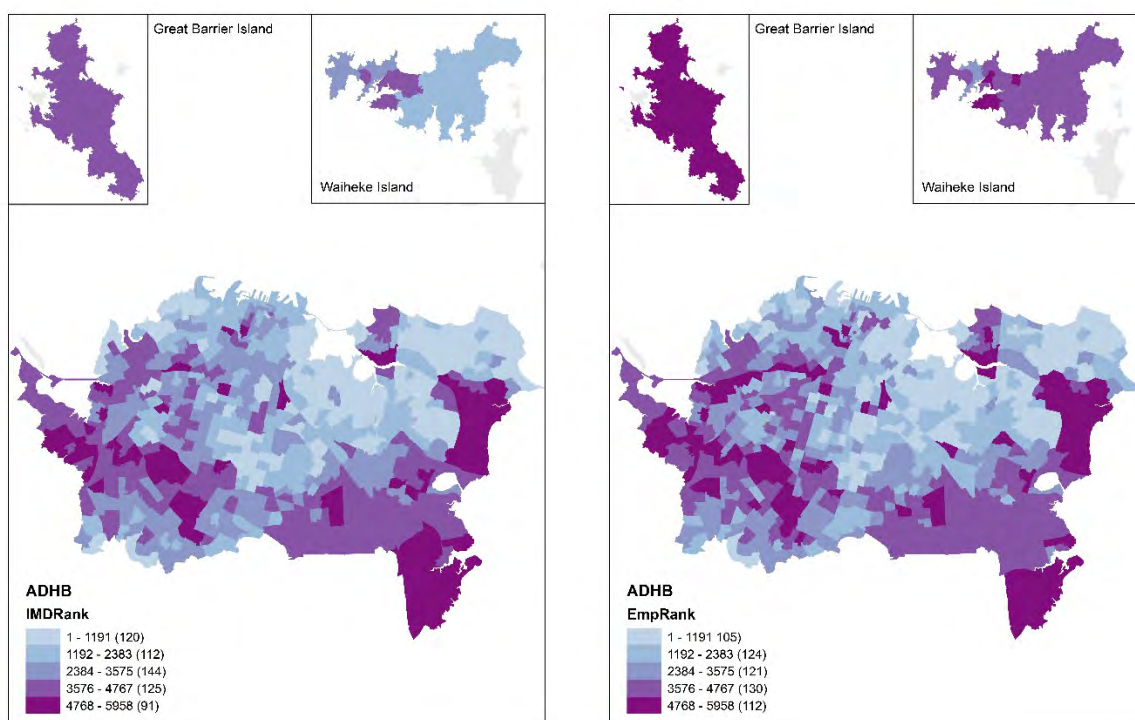


Figure 3. Distribution of overall IMD and employment deprivation in the ADHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows relatively low levels of Q5 deprivation in the ADHB in 2013, with the highest number of data zones (144) in the third quintile (Q3). Only 15.4% (91/592) of data zones were among the most deprived 20% in NZ (Q5), while 20.3% (120/592) were in the least deprived 20% (Q1). The median IMD rank in the ADHB was 2878, 1.7% (102 ranks) better than the NZ median of 2979. Most of the Q5 data zones were concentrated in the southern part of the ADHB from Avondale to Point England and Otahuhu. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the ADHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the ADHB, 18.9% (112/592) of data zones were among the 20% most employment deprived in NZ, while 17.7% (105/592) of data zones were in the least deprived 20%. The median employment deprivation rank in the ADHB was 3029, only 0.8% (50 ranks) worse than the NZ median of 2979. These moderate levels of employment deprivation closely followed the pattern of overall IMD deprivation. However, the Employment Domain has 19 additional Q5 data zones, most of them in the west of the DHB.

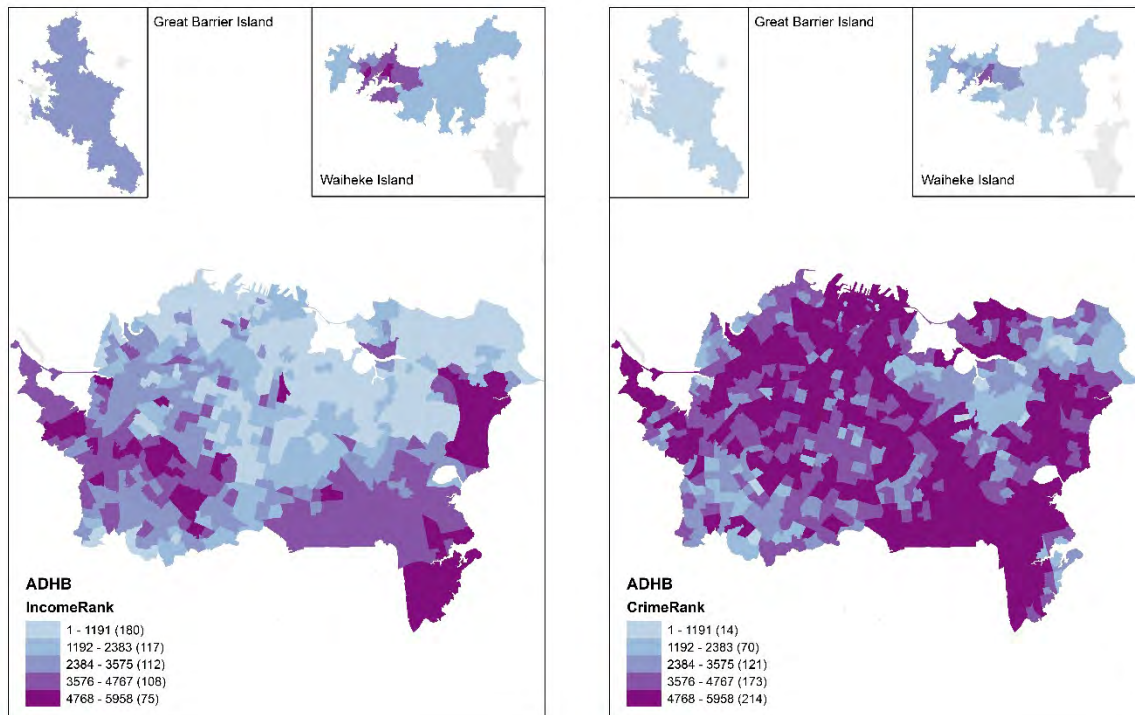


Figure 4. Distribution of income and crime deprivation in the ADHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the ADHB, only 12.7% (75/592) of data zones were in NZ's 20% most income deprived, while 30.4% (180/592) were in the 20% least income deprived. The median income deprivation rank in the ADHB was 2359, 10.4% (621 ranks) better than the NZ median. Q5 levels of income deprivation occur in a similar pattern to overall IMD deprivation, but the Income Domain has 16 fewer Q5 data zones. There was very little Q5 income deprivation in northern parts of the ADHB.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the ADHB, 36% (214/592) of data zones were among NZ's 20% most deprived for the Crime Domain, while only 2.4% (14/592) were among NZ's 20% least deprived. The median crime deprivation rank in the ADHB was 4235, 21.1% (1256 ranks) worse than the NZ median. High (Q5) rates of crime victimisation occurred in patches throughout the Auckland isthmus, but there were relatively few Q5 data zones in Point Chevalier, New Windsor and Blockhouse Bay — and fewer still in Remuera, Meadowbank and Glendowie.

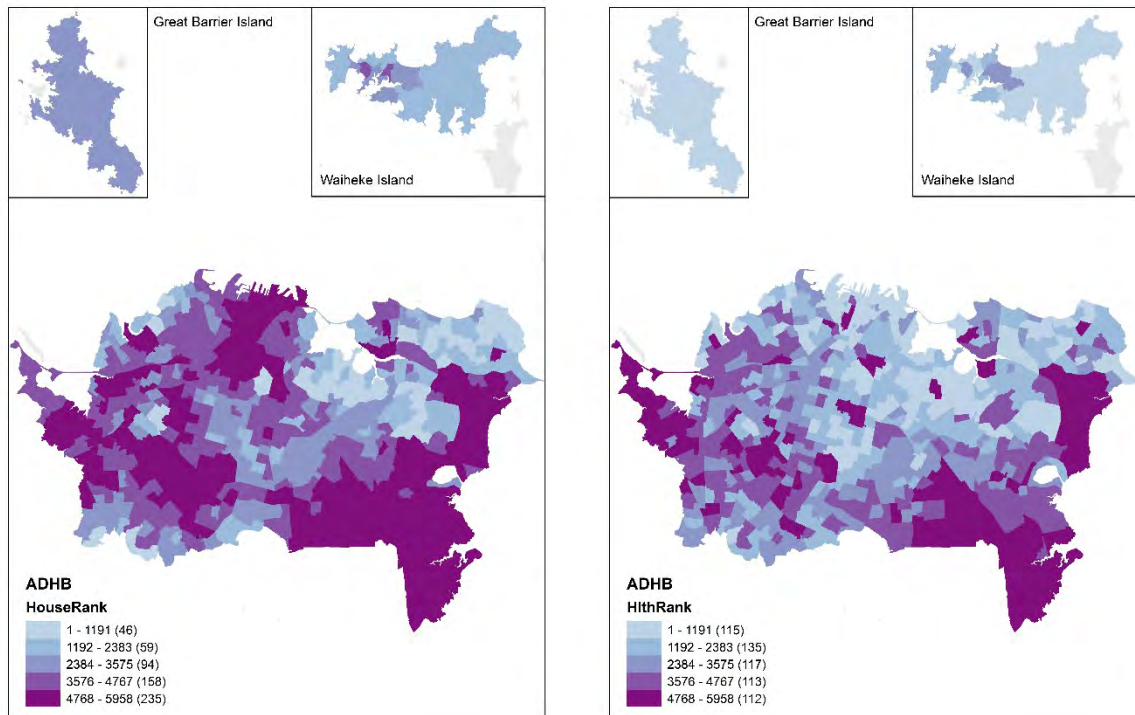


Figure 5. Distribution of housing and health deprivation in the ADHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the ADHB, 40.0% (235/592) of data zones were among the 20% most deprived in NZ, while only 7.8% (46/592) were among the 20% least deprived. The median housing deprivation rank in the ADHB was 4350, 23.0% (1371 ranks) worse than the NZ median. High (Q5) levels of housing deprivation were concentrated in the CBD and in many western and eastern suburbs. There were 235 Q5 data zones for housing deprivation compared to 91 Q5 data zones for overall IMD deprivation.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the ADHB, 18.9% (112/592) of data zones were among the 20% most health deprived in NZ, and 19.4% (115/592) were among the least deprived 20%. The median health deprivation rank in the ADHB was 2946, 0.6% (33 ranks) better than the NZ median. Data zones with Q5 health deprivation follow the general pattern of overall IMD deprivation, but health deprivation has 21 more Q5 data zones and a more scattered pattern.

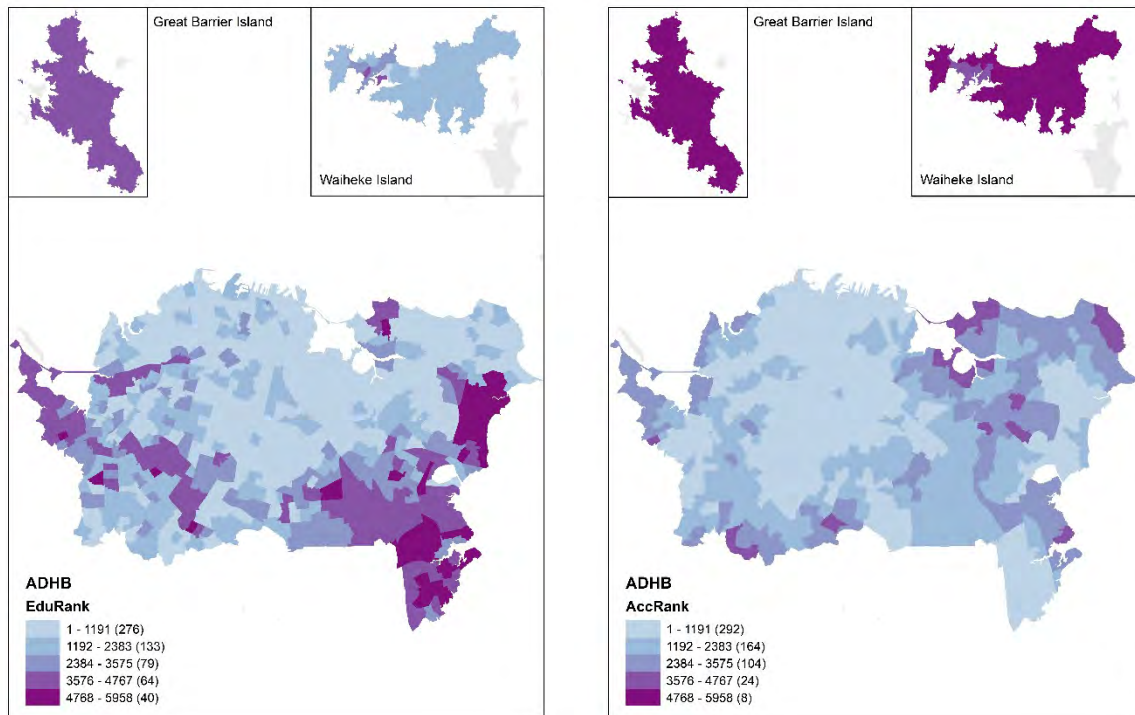


Figure 6. Distribution of education and access deprivation in the ADHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the ADHB, only 6.8% (40/592) of data zones were among the 20% most education deprived in NZ (Q5), and a surprising 46.6% (276/592) were among the 20% least deprived (Q1). The median education deprivation rank in the ADHB was 1302, 28.2% (1678 ranks) better than the NZ median. Q5 education deprivation was limited to just 40 data zones in the ADHB; most of which occurred in the east of the DHB in Orakei and Penrose, and from Point England to Mount Wellington and Otahuhu. However, there were four data zones with Q5 education deprivation in the west: Avondale, New Windsor and two in Mount Roskill.

The Access Domain measures the distance from the population weighted centre of each data zone to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the ADHB, only 1.4% (8/592) of data zones were among NZ's 20% most access deprived, and 49.3% (292/592) were among NZ's 20% least deprived. The median access deprivation rank in the ADHB was 1215, 29.6% (1764 ranks) better than the NZ median. The eight data zones with Q5 access deprivation were on islands in the Hauraki Gulf. There was no Q5 access deprivation in Auckland's isthmus.

Age profile of the Auckland DHB

According to the 2013 census, the ADHB had a total population of 436,461 people living in 592 data zones, with a mean of 737 people each (range: 501 to 1428).

| Mean data zone proportions for five age groups in the ADHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Auckland DHB | 18.1% | 16.1% | 31.6% | 23.5% | 10.6% |
| New Zealand ² | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -2.3% | 2.3% | 6.0% | -2.3% | -3.7% |

Table 2. Mean data zone proportions for five age groups in the ADHB

Table 3 shows that the age profile of the ADHB differs most from the national age profile for people aged 25-44 (the ADHB has 6.0% more) and people aged 65+ (the ADHB has 3.7% fewer). Figure 7 shows the distribution of people in these two age groups.

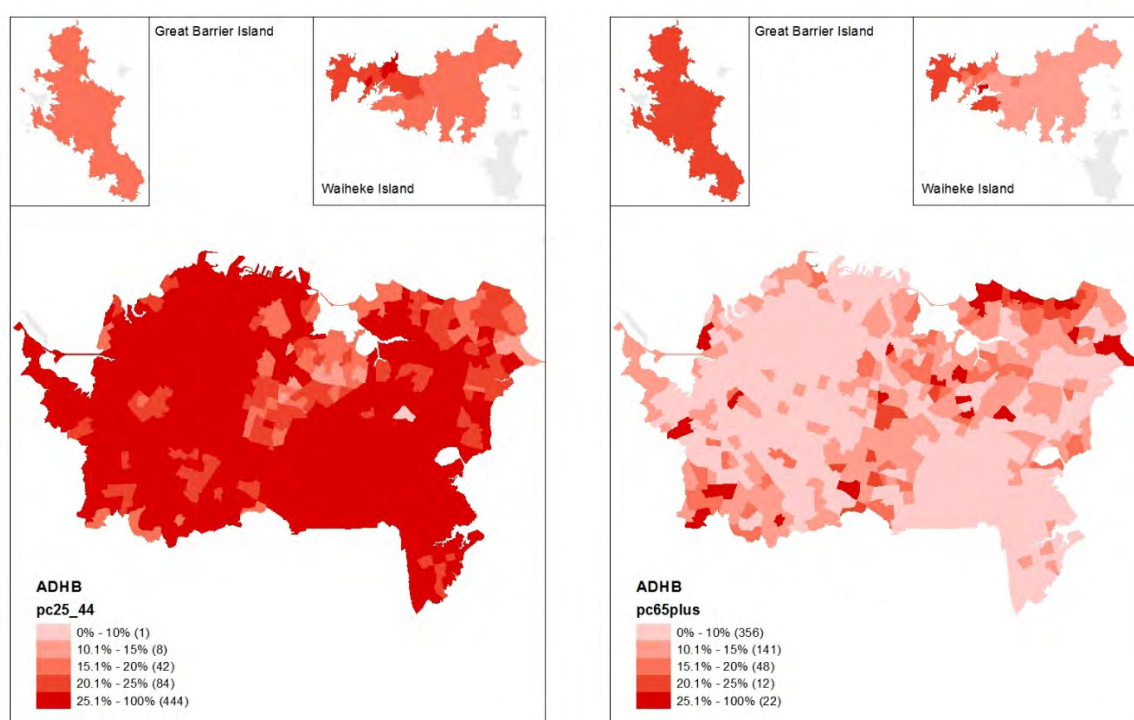


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the ADHB

Ethnicity profile of the Auckland DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the ADHB in 2013 ranged from 0% to 40.8%. The mean (7.7%)

² Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

was just under half the proportion of Māori at the national level (14.9%). There were only two data zones in Orakei with more than 30% Māori, but 19 data zones from Point England to Mount Wellington and Otahuhu that had more than 20%.

The proportion of Pacific ethnicity ranged from 0% to 65.3%. The mean was 12.5%, which is significantly higher than the national proportion of 7.3%. There were 81 data zones with more than 30% Pacific ethnicity through the south of the ADHB from Avondale to Point England and Otahuhu.

The proportion of New Zealand European and Other ethnicities (NZEO) living in data zones within the ADHB ranged from 31.2% to 100%. The average was 87.5%, which was the same as the national proportion. The lowest proportions of NZEO (<50%) lived in 31 data zones in Avondale, Mount Roskill, Onehunga, Otahuhu and Point England.

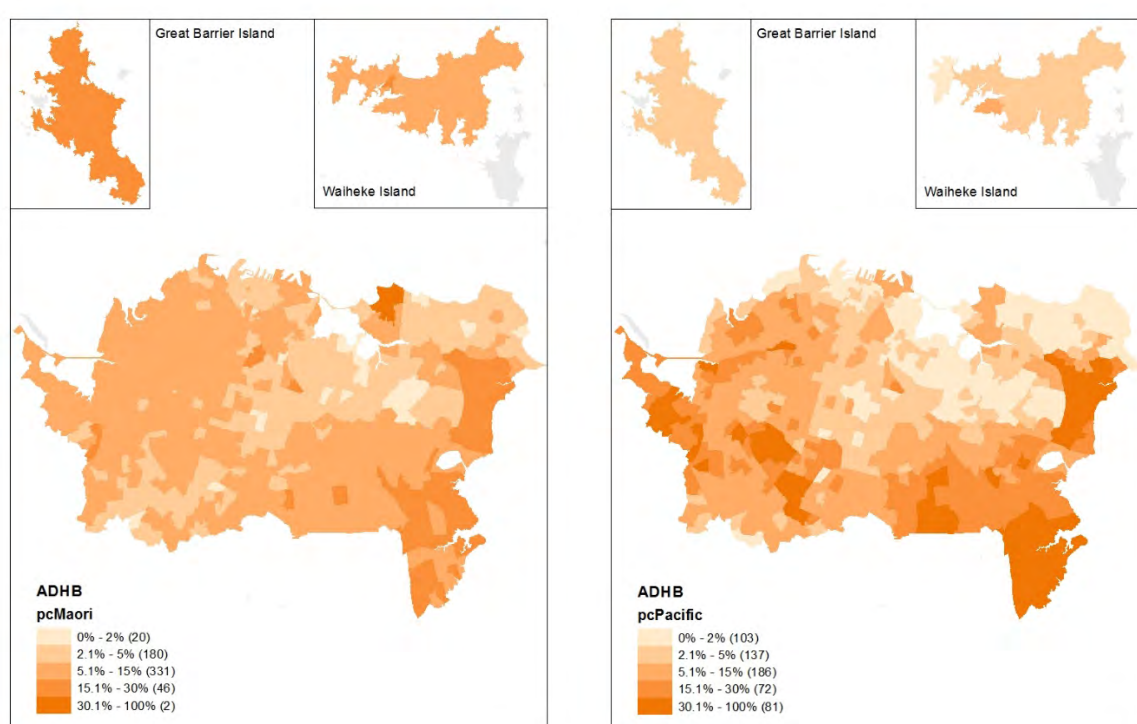
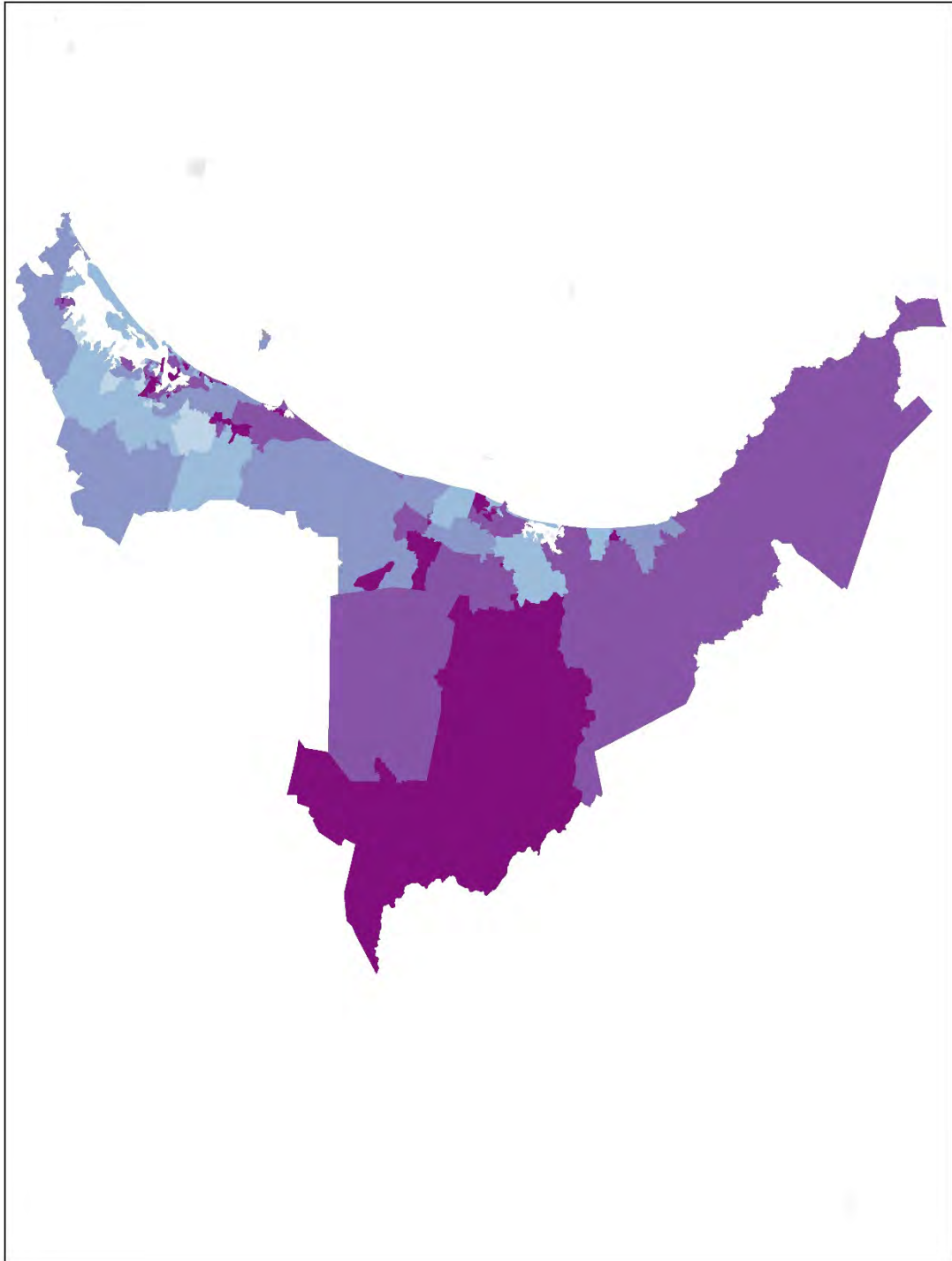


Figure 8. Distribution of Māori and Pacific people in the ADHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Bay of Plenty DHB



Bay of Plenty DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Bay of Plenty DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

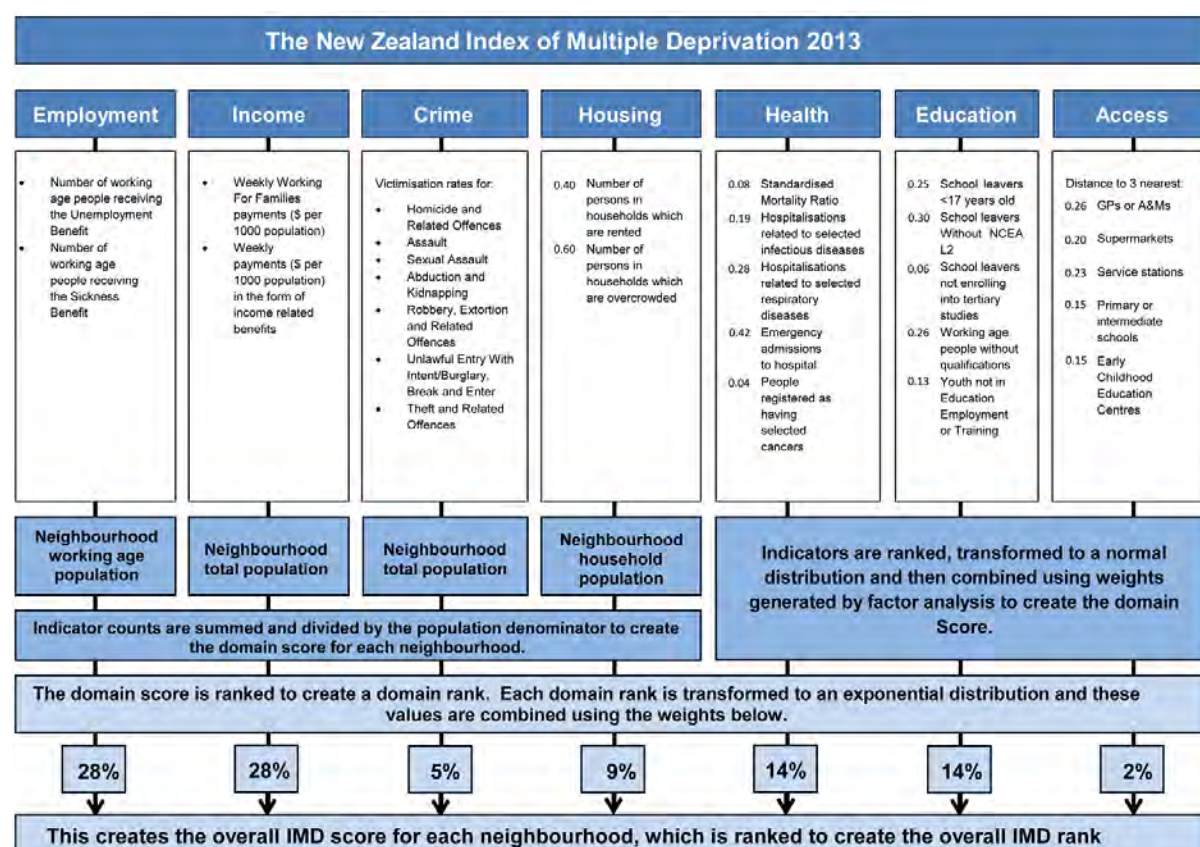


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Bay of Plenty DHB (BOPDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same as all of NZ, we would see 20% of the BOPDHB's 289 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was greater than 20% for overall IMD deprivation and for all domains except for Crime and Housing. The proportion with Q4 deprivation was greater than 20% for all domains. The proportion with Q4 deprivation was greater than 20% for all domains. The BOPDHB has high levels of overall IMD deprivation, with 51.2% (148/289) of its data zones in Q4 or Q5.

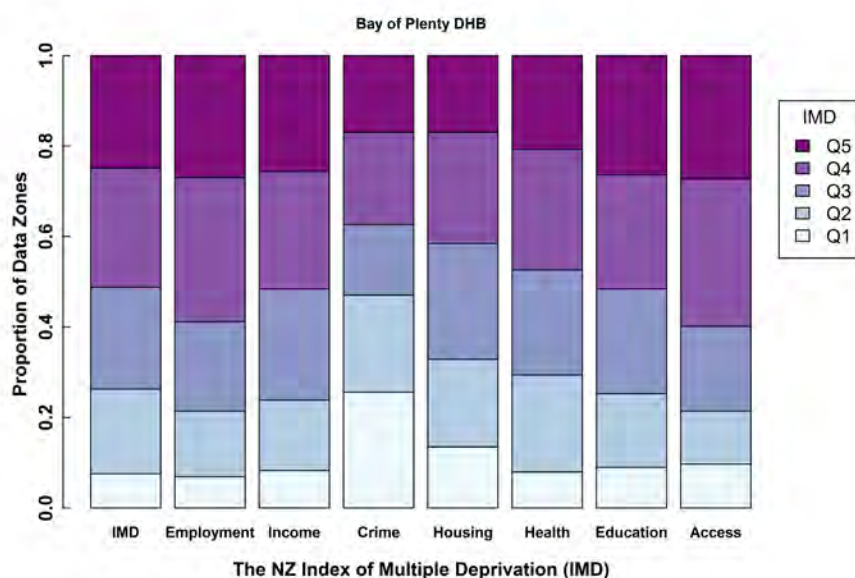


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the BOPDHB

Table 1 shows summary statistics by domain for the 72 BOPDHB data zones that were among NZ's 20% most deprived for the overall IMD, and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Employment (5556), Education (5394), Income (5368), Health (5023) and Housing (4910) were contributing to high overall IMD deprivation in these 72 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ³ deprivation ranks by domain for 75 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4823 | 4008 | 3172 | 1053 | 3163 | 2922 | 3572 | 132 |
| Max | 5938 | 5958 | 5947 | 5935 | 5782 | 5922 | 5951 | 5934 |
| Median | 5397 | 5556 | 5368 | 4661 | 4910 | 5023 | 5394 | 2708 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 75 data zones in the BOPDHB with Q5 IMD deprivation

³ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

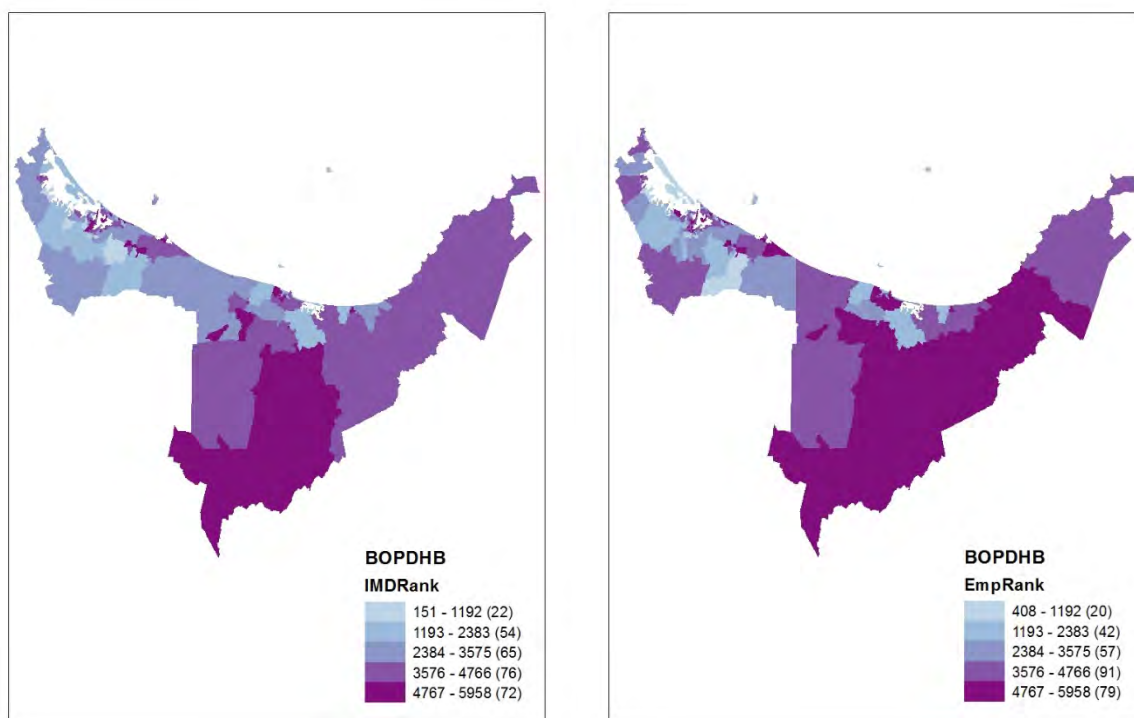


Figure 3. Distribution of overall IMD and employment deprivation in the BOPDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows that there are high levels of Q5 disadvantage in the BOPDHB. 24.9% (72/289) of Data Zones in the BOPDHB were among the most deprived 20% in NZ (Q5), and only 7.6% (22/289) were in the least deprived 20% (Q1). The median IMD rank in the BOPDHB was 3610, 10.6% (631 ranks) worse than the NZ median of 2979. There were three large rural data zones with Q5 overall deprivation in the southern part of the DHB, and three more around Kawerau and Te Teko, but the majority of Q5 data zones were located in urban areas such as Tauranga and Whakatane. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the BOPDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the BOPDHB, 27.3% (79/289) of data zones were in the 20% most deprived in NZ for the Employment Domain, while only 6.9% (20/289) were in the least deprived 20%. The median employment deprivation rank in the BOPDHB was 3857, 14.7% (878 ranks) worse than the NZ median of 2979. High (Q5) levels of employment deprivation were prominent in large rural data zones stretching from Murupara to Houopoto and in most urban areas from Katikati to Opotiki.

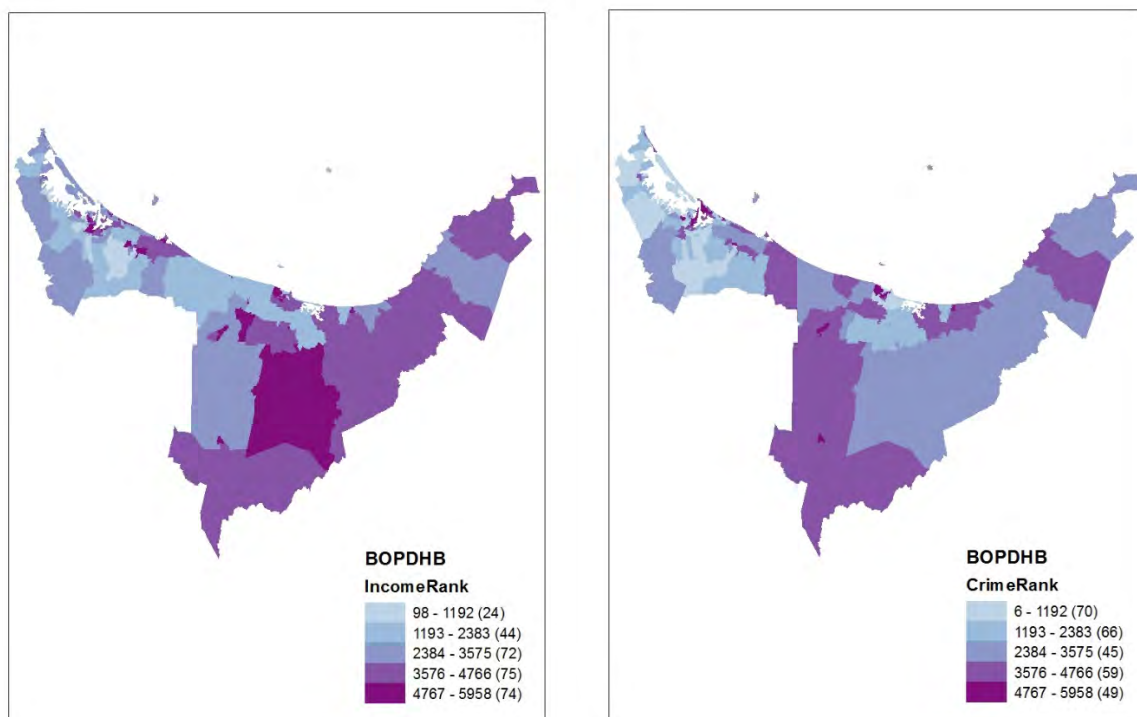


Figure 4. Distribution of income and crime deprivation in the BOPDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the BOPDHB, 25.6% (74/289) of data zones were among NZ's 20% most income deprived, and 8.3% (24/289) were in the 20% least income deprived. The median income deprivation rank in the BOPDHB was 3629, 10.9% (650 ranks) worse than the NZ median. High (Q5) levels of income deprivation occurred in large rural data zones around the Ruatoki and Waimana Valleys and around Murupara, Kawerau, Te Teko and Te Puke, but many occurred in the suburbs of Tauranga.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the BOPDHB, 17% (49/289) of data zones were among NZ's 20% most deprived for the Crime Domain, while 25.6% (74/289) were among NZ's 20% least deprived. The median crime deprivation rank in the BOPDHB was 2615, 6.1% (364 ranks) better than the NZ median. High (Q5) rates of crime victimisation occurred in most medium to large sized towns in the BOPDHB and in 24 data zones in Tauranga. There were no Q5 rates of crime victimisation in rural parts of the BOPDHB.

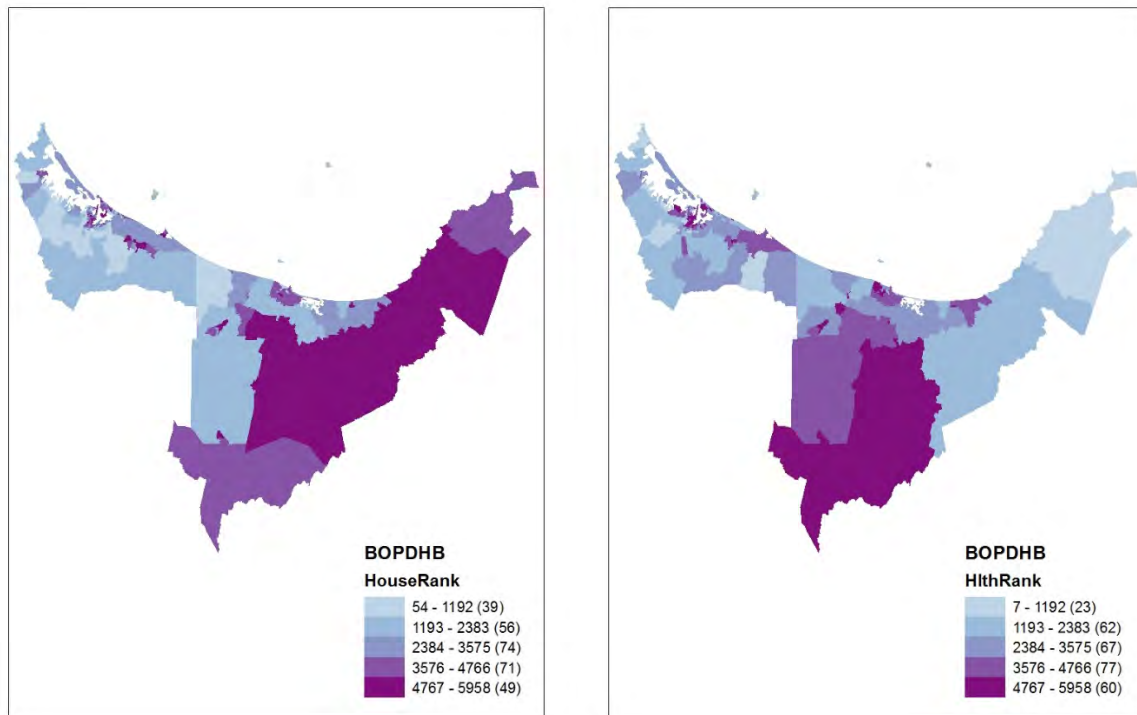


Figure 5. Distribution of housing and health deprivation in the BOPDHB

The Housing Domain measures the proportion of people living in overcrowded households and rented dwellings. In the BOPDHB, 17% (49/289) of data zones were among the 20% most deprived in NZ, and 13.5% (39/289) of data zones were among the 20% least deprived. The median housing deprivation rank in the BOPDHB was 3002, only 0.4% (23 ranks) worse than the NZ median. High (Q5) levels of housing deprivation were prominent in the large rural data zones stretching from Murupara to Te Kaha and in towns such as Te Puke, Maketu, Kawerau and Opotiki. In Tauranga, there were 23 Q5 housing deprived data zones.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the BOPDHB, 20.8% (60/289) of data zones were among the 20% most health deprived in NZ, and only 8% (23/289) were among the least deprived 20%. The median health deprivation rank in the BOPDHB was 3440, 7.7% (461 ranks) worse than the NZ median. High (Q5) levels of health deprivation occurred in large rural data zones around Murupara and the Ruatoki and Waimana Valleys and in most towns. In Tauranga, there were 30 Q5 health deprived data zones.

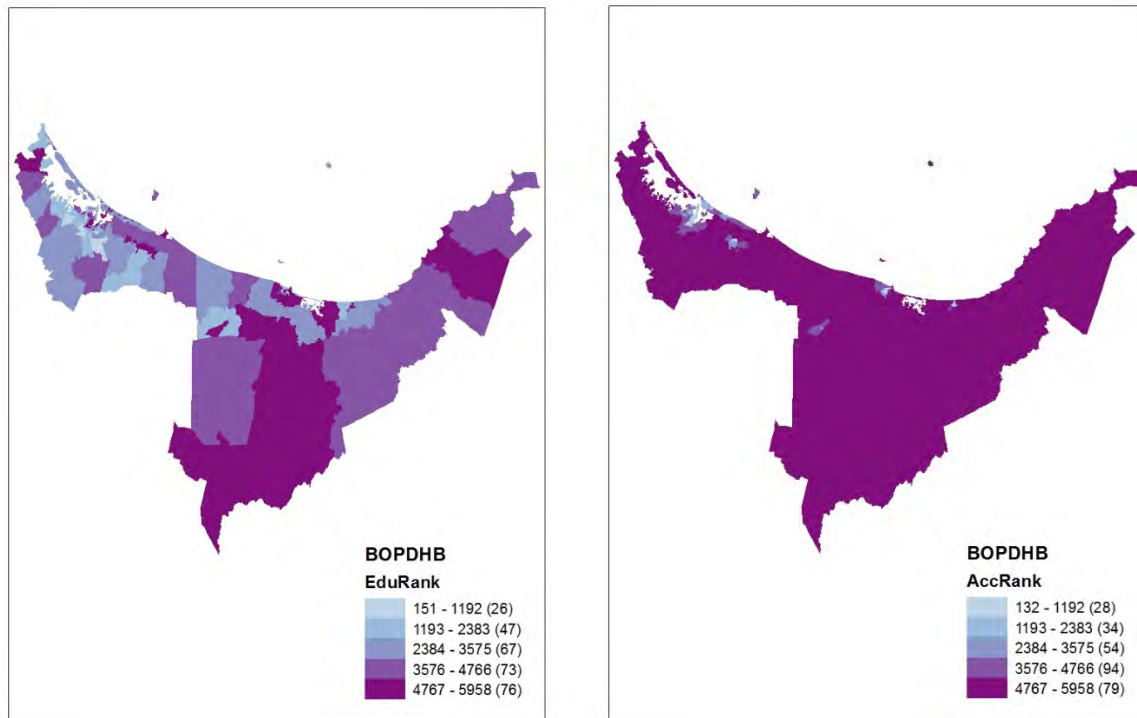


Figure 6. Distribution of education and access deprivation in the BOPDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the BOPDHB, 26.3% (76/289) of data zones were among NZ's 20% most education deprived, and only 9% (26/289) were in the least deprived 20%. The median education deprivation rank in the BOPDHB was 3650, 11.3% (671 ranks) worse than the NZ median. High (Q5) levels of education deprivation occurred in the large rural data zones of the Ruatoki and Waimana Valleys and around Te Kaha and in smaller rural area such as Ohiwa and Katikati. Tauranga had 29 data zones with Q5 education deprivation, as did most urban areas in the BOPDHB.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the BOPDHB, 27.3% (79/289) of data zones were among NZ's 20% most access deprived, and only 9.7% (28/289) were in NZ's 20% least deprived. The median access deprivation rank in the BOPDHB was 3979, 16.8% (1000 ranks) worse than the NZ median. Predictably, rural parts of the BOPDHB were Q5 access deprived. The only places with Q1 access to services were Tauranga, Te Puke, Whakatane and Opotiki.

Age profile of the Bay of Plenty DHB

According to the 2013 census, the BOPDHB had a total population of 205,994 people living in 289 data zones, with a mean of 713 people each (range: 492 to 1179).

| Mean data zone proportions for five age groups in the BOPDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Bay of Plenty DHB | 21.1% | 11.4% | 22.3% | 26.6% | 18.5% |
| New Zealand ⁴ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 0.7% | -2.4% | -3.3% | 0.8% | 4.2% |

Table 2. Mean data zone proportions for five age groups in the BOPDHB

Table 2 shows that the age profile of the BOPDHB differs most from the national age profile in that it has 3.3% fewer people aged 25-44 and 4.2% more people aged 65+. Figure 6 shows the distribution of people in these two age groups.

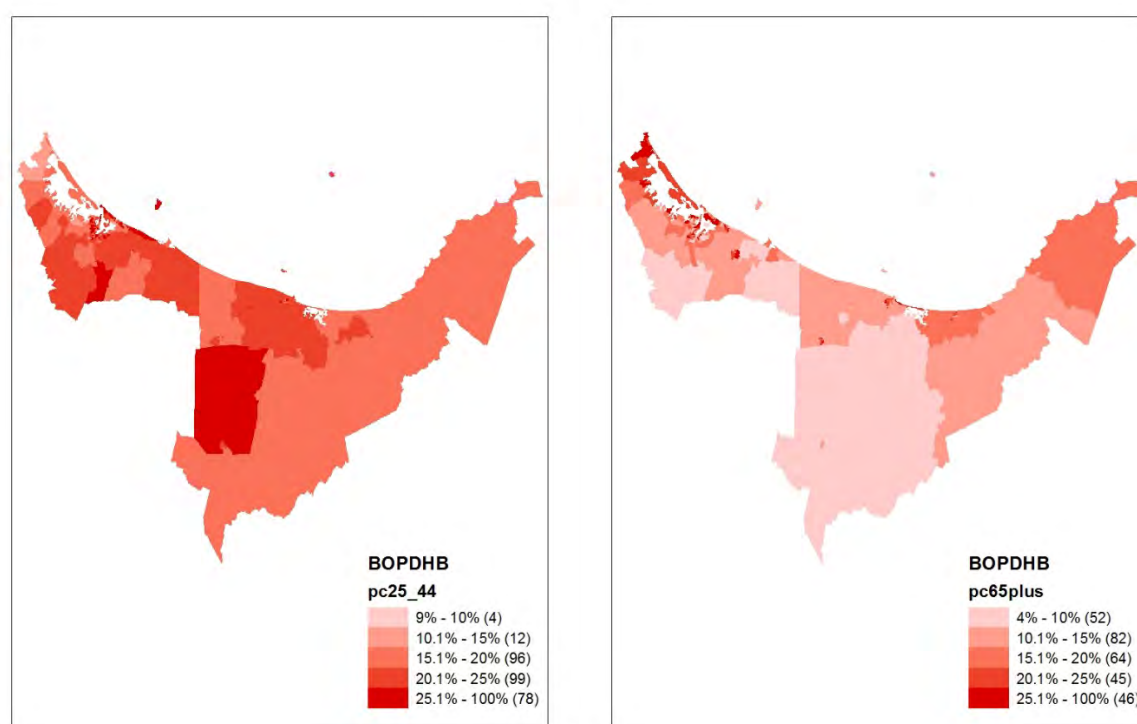


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the BOPDHB

Ethnicity profile of the Bay of Plenty DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the BOPDHB ranged from 4% to 98%. The overall proportion of

⁴ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

Māori was 25.3%, which was much higher than the national proportion of 15.3%. The proportion of Māori per data zone was greatest (>90%) in Murupara and the Ruatoki and Waimana Valleys. In total, 27.3% (79/289) of data zones in the BOPDHB have a Māori population of over 30%.

The proportion of Pacific ethnicity living in data zones within the BOPDHB ranged from 0% to 16.0%. The overall proportion of Pacific ethnicity was 2.4%, much lower than the national proportion of 7.3%. The proportion of Pacific ethnicity is greatest in the Tauranga suburb of Parkville (16.0%), followed by Te Puke (13.3%) and Gate Pa (12.4%).

The proportion of New Zealand European and Other ethnicities (NZEO) living in data zones within the BOPDHB ranged from 11.1% to 99.6%. The overall proportion of NZEO was 84.6%, which is slightly lower than the national proportion of 87.5%. The percentage of NZEO was lowest (<50%) in the eastern and southern parts of the DHB, as well as in Opatiki, Whakatane, Te Teko, Kawerau, Maketu and in the two Tauranga suburbs of Matua and Matapihi.

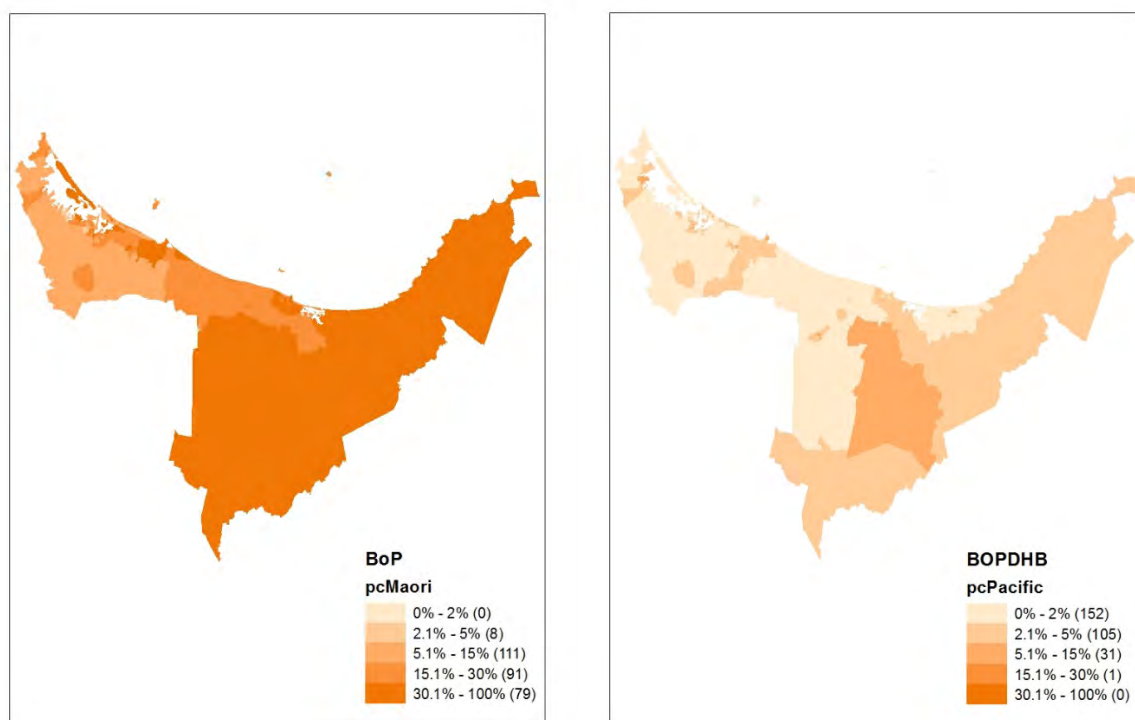
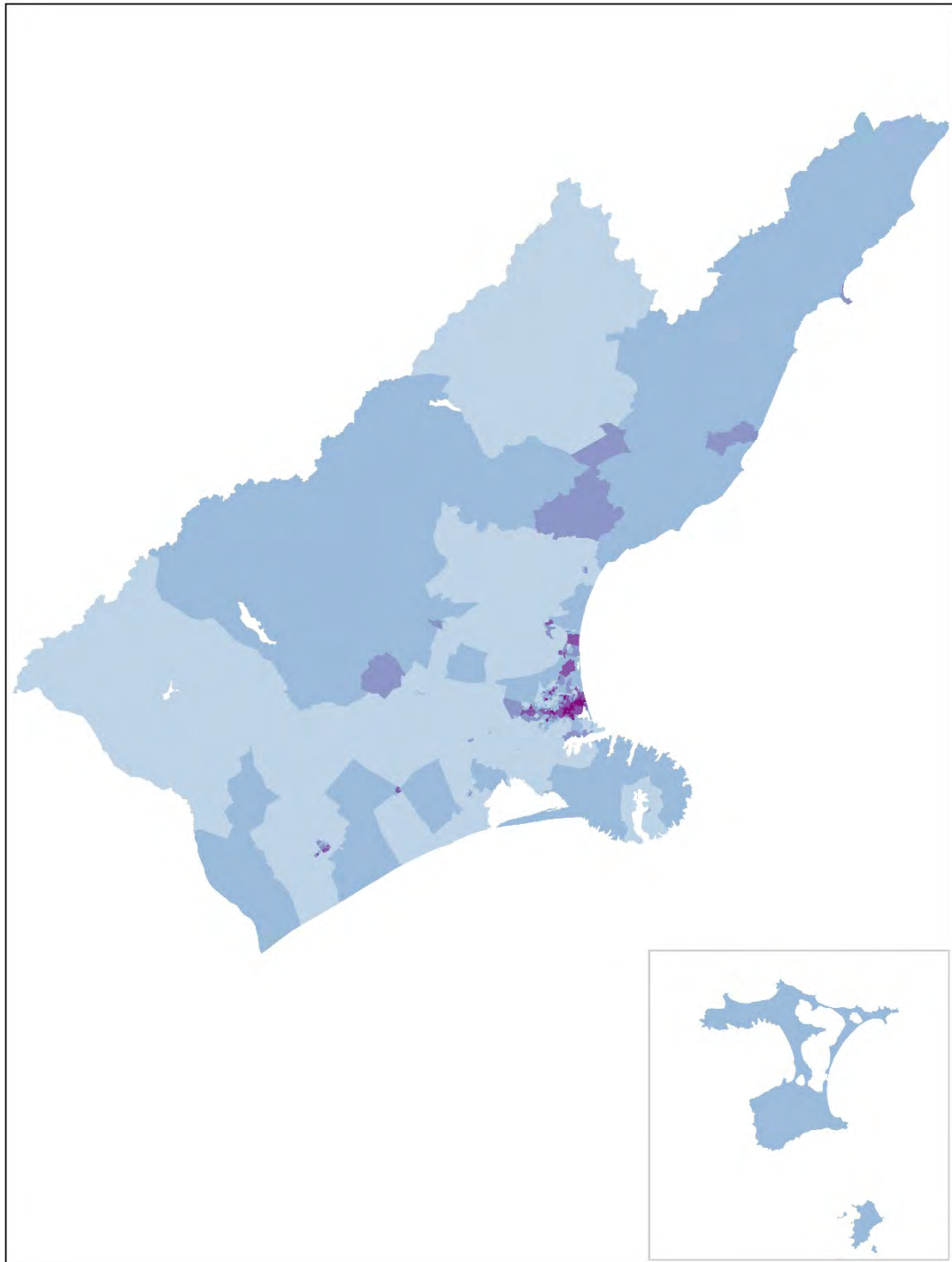


Figure 8. Distribution of Māori and Pacific people in the BOPDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Canterbury DHB



Canterbury DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Canterbury DHB

The 2013 New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

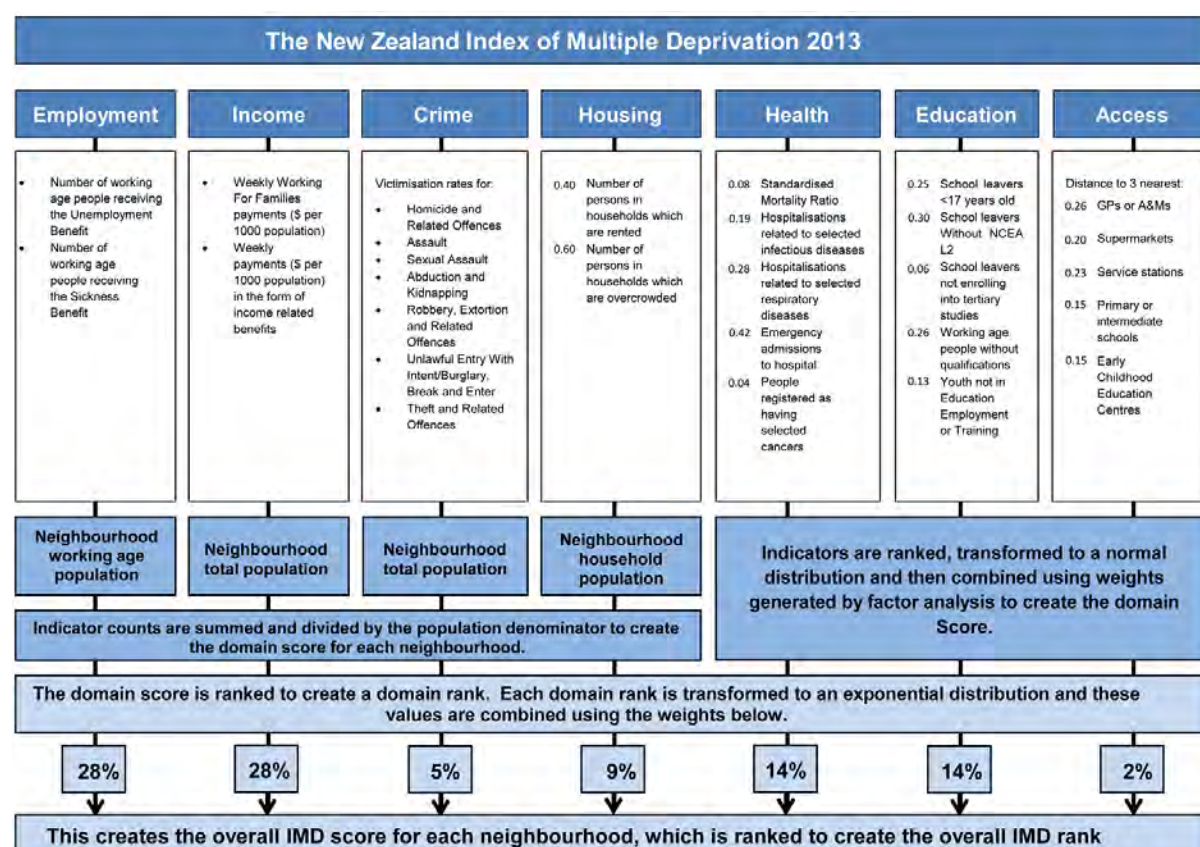


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Fig 2 shows the proportion of data zones in the Canterbury DHB (CDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same as for all of NZ, we would see 20% of the CDHB's 688 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was much lower than 20% across all seven domains, especially in the Employment, Income, Housing and Health Domains. Q4 deprivation was also lower than average, except for Education. The CDHB had low levels of overall IMD deprivation, with only 25.6% (176/688) of its data zones in Q4 or Q5.

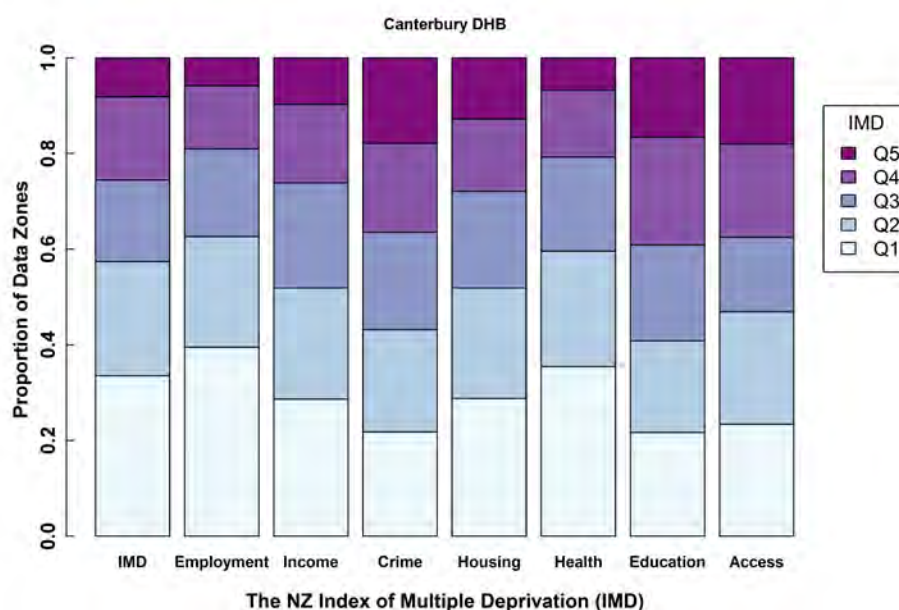


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the CDHB

Table 1 shows summary statistics by domain for the 56 CDHB data zones that were among NZ's 20% most deprived for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Education (5454), Income (5275), Crime (5186), Housing (4968), Employment (4895) and Health (4865) were all contributing to high overall IMD deprivation in these 56 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ⁵ deprivation ranks by domain for 56 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4770 | 3500 | 4212 | 3360 | 3224 | 2831 | 3835 | 59 |
| Max | 5854 | 5786 | 5802 | 5917 | 5737 | 5845 | 5894 | 3644 |
| Median | 5121 | 4895 | 5275 | 5186 | 4968 | 4865 | 5454 | 1171 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 56 data zones in the CDHB with Q5 IMD deprivation

⁵ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

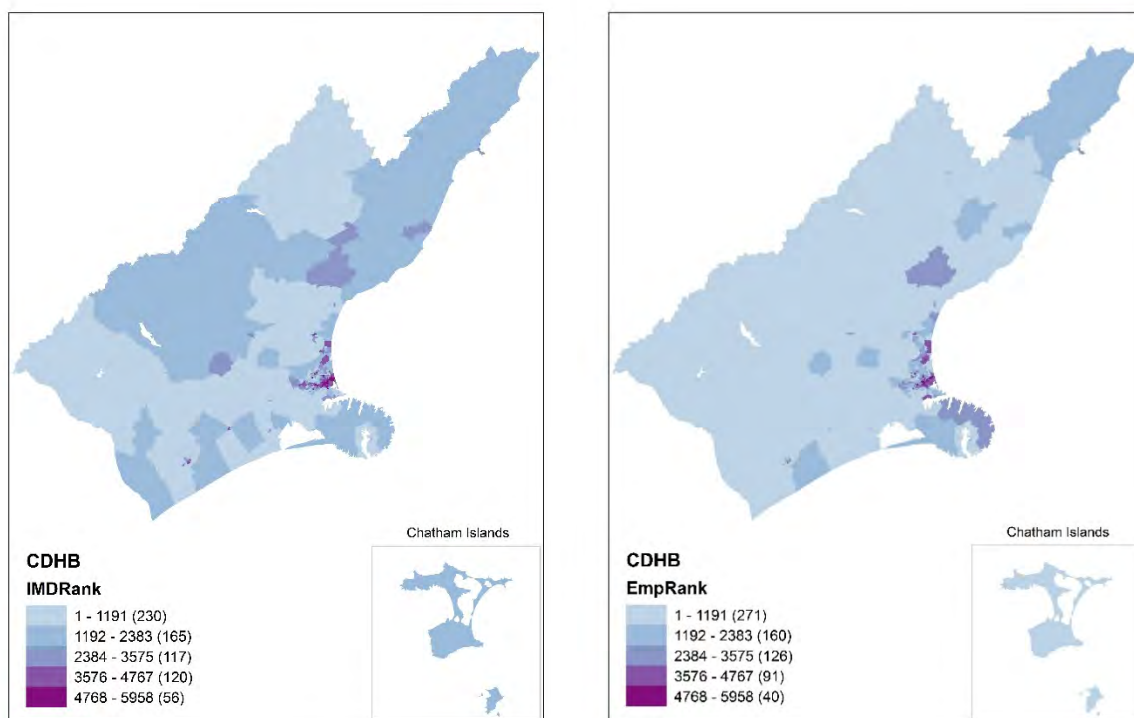


Figure 3. Distribution of overall IMD and employment deprivation in the CDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows low levels of Q5 deprivation in the CDHB. Only 8.1% (56/699) of data zones were among the most deprived 20% in NZ (Q5), while 33.4% (230/688) of data zones were in the least deprived 20% in NZ (Q1). The median IMD rank in the CDHB was 2000, 16.4% (979 ranks) better than the NZ median of 2979. The majority (42/56) of Q5 data zones were in Christchurch, stretching from Latimer Square eastwards to the sea, and in suburbs such as Addington, Hoon Hay and Broomfield. Urban data zones are difficult to see on these maps, so readers can use the interactive maps at the [IMD website](#) to explore the CDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the CDHB, only 5.8% (40/688) of data zones were in the 20% most deprived in NZ for the Employment Domain. In contrast, 39.4% (271/688) of data zones were in the least deprived 20%. The median employment deprivation rank in the CDHB was 1700, 21.5% (1280 ranks) better than the NZ median of 2979. The distribution of Q5 employment deprivation followed a similar pattern to overall IMD deprivation, but with fewer Q5 data zones. There were no Q5 employment deprived data zones in rural parts of the CDHB.

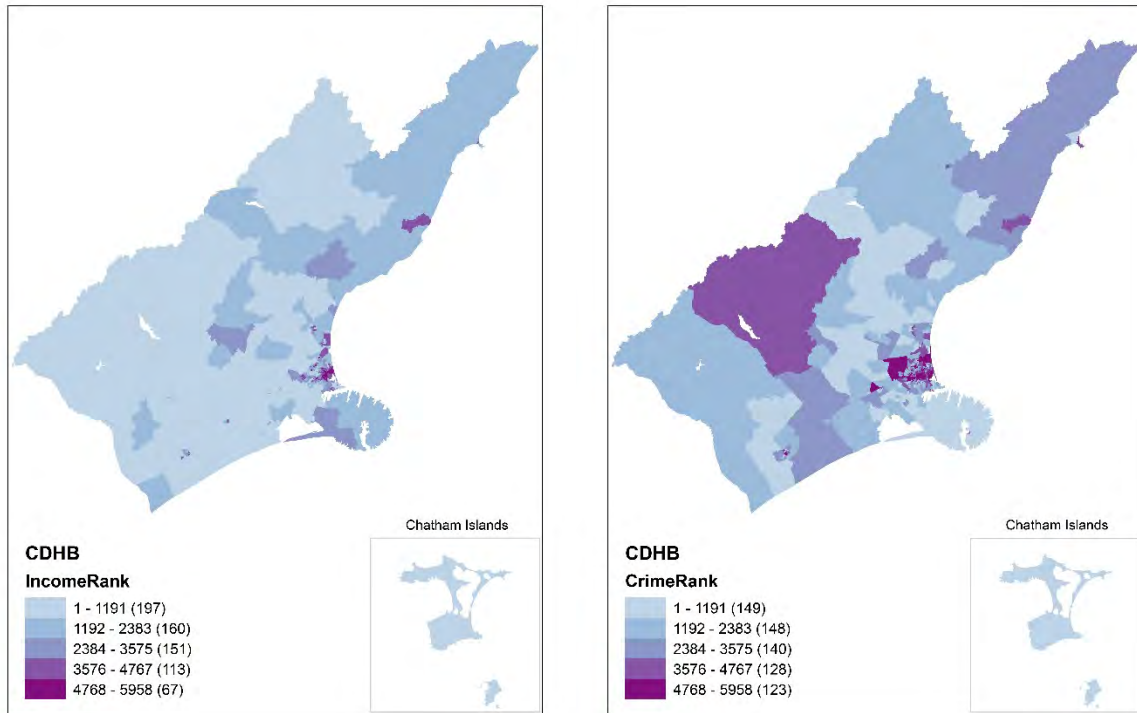


Figure 4. Distribution of income and crime deprivation in the CDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the CDHB, only 9.7% (67/688) of data zones were among NZ's 20% most income deprived, while 28.6% (197/688) were among the 20% least income deprived. The median income deprivation rank in the CDHB was 2269, 11.9% (710 ranks) better than the NZ median. These figures show that income deprivation was a bigger issue in the CDHB area than employment deprivation. The distribution of Q5 data zones followed the same pattern as overall (IMD) deprivation. There were no Q5 income deprived data zones in rural parts of the CDHB.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the CDHB, 17.9% (123/688) of data zones were among NZ's 20% most deprived for the Crime Domain, while 21.7% (149/688) were among NZ's 20% least deprived. The median crime deprivation rank in the CDHB was 2820, 2.7% (159 ranks) better than the NZ median. High (Q5) rates of crime victimisation occurred in urban areas, including Christchurch, Kaikoura and Ashburton, and in a large semi-rural area that includes Christchurch International Airport and Christchurch Women's Prison and Christchurch Men's Prison.

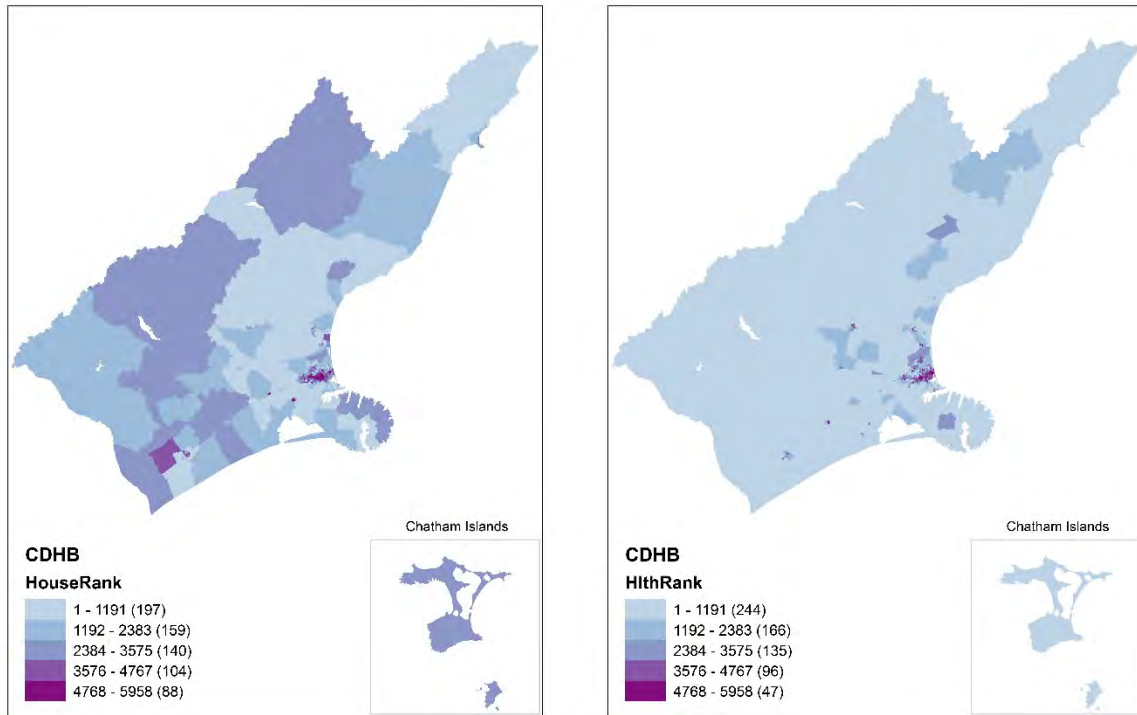


Figure 5. Distribution of housing and health deprivation in the CDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%) in 2013. In the CDHB, only 12.8% (88/688) of data zones were among the 20% most deprived in NZ and 28.6% (197/688) of data zones were among the 20% least deprived. The median housing deprivation rank in the CDHB was 2259, 12.1% (721 ranks) better than the NZ median. In Christchurch City, many data zones in the Wigram GED were Q5 housing deprived, and beyond the city there was Q5 housing deprivation near Lincoln University, the Burnham Army Camp and Netherby.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the CDHB, only 6.8% (47/688) of data zones were among the 20% most health deprived in NZ, and 35.5% (244/688) were among the least deprived 20%. The median health deprivation rank in the CDHB was 1951, 17.3% (1028 ranks) better than the NZ median, showing that there were relatively low levels of health deprivation in the CDHB. In Christchurch City, there were fewer data zones (44) with Q5 health deprivation than for overall (IMD) deprivation (56). Beyond the city, Rakaia, Ashburton, Kaiapoi and Rangiora had one Q5 health deprived data zone each.

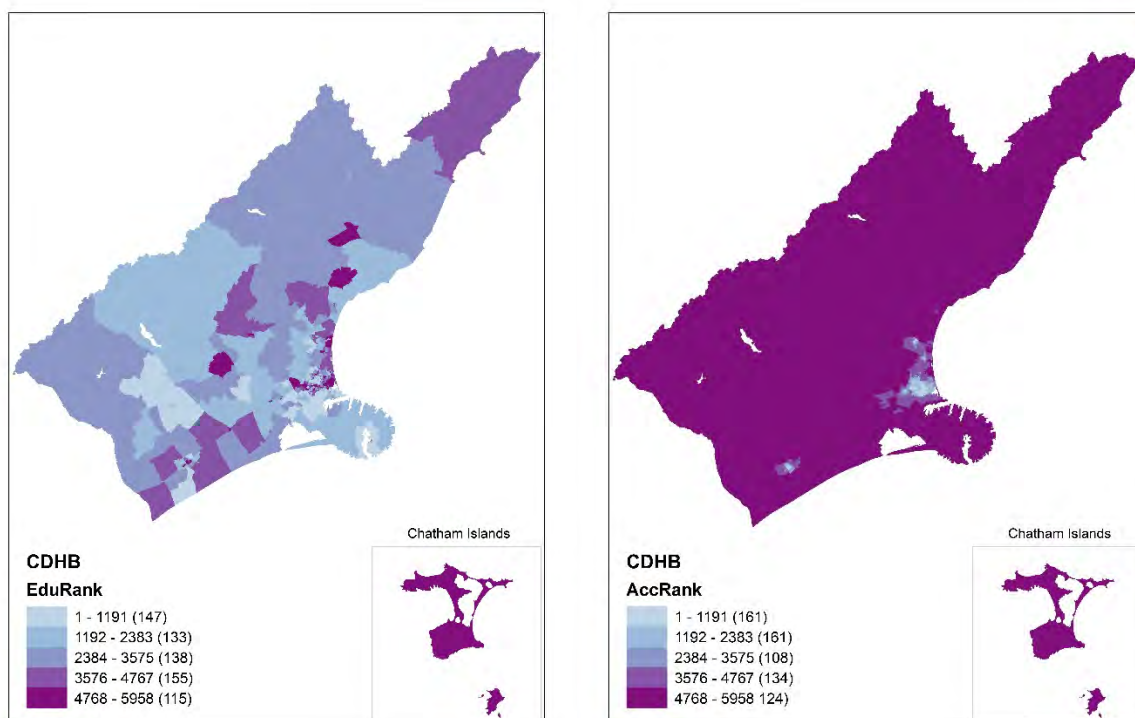


Figure 6. Distribution of education and access deprivation in the CDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the CDHB, 16.7% (115/688) of data zones were among NZ's 20% most education deprived and 21.4% (147/688) were in the least deprived 20%. The median education deprivation rank in the CDHB was 2972, 0.1% (8 ranks) better than the NZ median. In Christchurch City, there were many data zones with Q5 education deprivation, especially in the Wigram GED. On the edge of the city, there was a large semi-rural data zone with Q5 education deprivation that included Christchurch International Airport, Christchurch Women's Prison and Christchurch Men's Prison. Beyond the city, there were three large rural data zones with Q5 education deprivation (one in Selwyn District and two in Hurunui) and 11 urban data zones in smaller centres. The Chatham Islands also had Q5 education deprivation.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest 3 GPs, supermarkets, service stations, schools and early childhood education centres. In the CDHB, 18.0% (124/688) of data zones were among NZ's 20% most access deprived, and 23.4% (161/688) were in NZ's 20% least deprived. The median access deprivation rank in the CDHB was 2679, 5.0% (301 ranks) better than the NZ median. Predictably, the entire rural part of the CDHB and the Chatham Islands were Q5 access deprived. Access to services was good in and around Ashburton, Rangiora, Kaiapoi and Hornby, and was excellent in most parts of the Christchurch Central and Christchurch East GEDs.

Age profile of the Canterbury DHB

According to the 2013 census, the CDHB had a total population of 482,709 people living in 688 data zones, with a mean of 702 people each (range: 498 to 1101).

| Mean data zone proportions for five age groups in the CDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Canterbury DHB | 18.7% | 13.8% | 25.8% | 26.7% | 15.0% |
| New Zealand ⁶ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -1.7% | 0.0% | 0.2% | 0.9% | 0.7% |

Table 2. Mean data zone proportions for five age groups in the CDHB

Table 2 shows that the age profile of the CDHB differs most from the national age profile in that it has 1.7% fewer children aged 0-14 and 0.9% more people aged 45-64. Figure 7 shows the distribution of people in these two age groups.

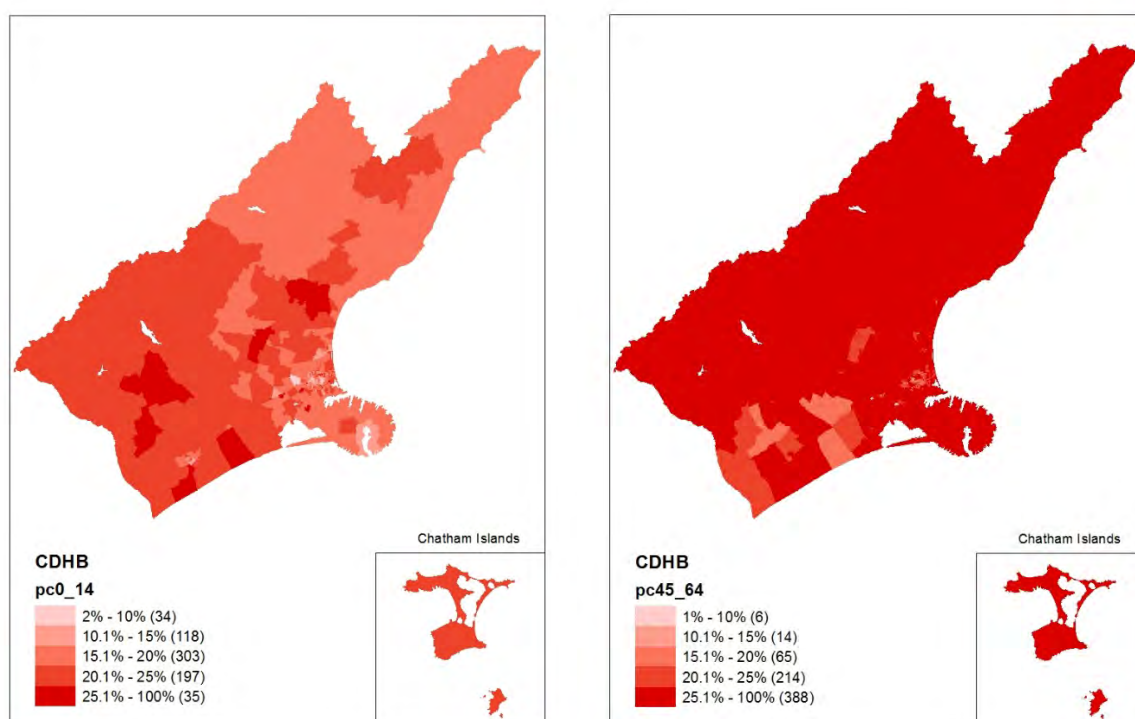


Figure 7. Distribution of children aged 0-14 and people aged 45-64 in the CDHB

Ethnicity profile of the Canterbury DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the CDHB ranged from 1.0% to 59.3%. The overall proportion of Māori in the CDHB was 8.3%, much lower than the national proportion of

⁶ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

14.9%. The proportion of Māori per data zone was the greatest in the Chatham Islands (59.3%).

The proportion of Pacific ethnicity living in data zones within the CDHB in 2013 ranged from 0.0% to 27.4%. The overall proportion of Pacific ethnicity in the CDHB was 2.5%, much lower than the national proportion of 7.3%. A data zone in Hoon Hay (27.4%) had the highest proportion of Pacific ethnicity.

The proportion of New Zealand European and Other ethnicities (NZEO) living in data zones within the CDHB ranged from 66.7% to 100%. The overall proportion of NZEO in the CDHB was 95.5%, which is greater than the national proportion of 87.5%. The lowest proportions of NZEO residents lived in a Hoon Hay data zone (66.7%) and in a cluster of Aranui data zones

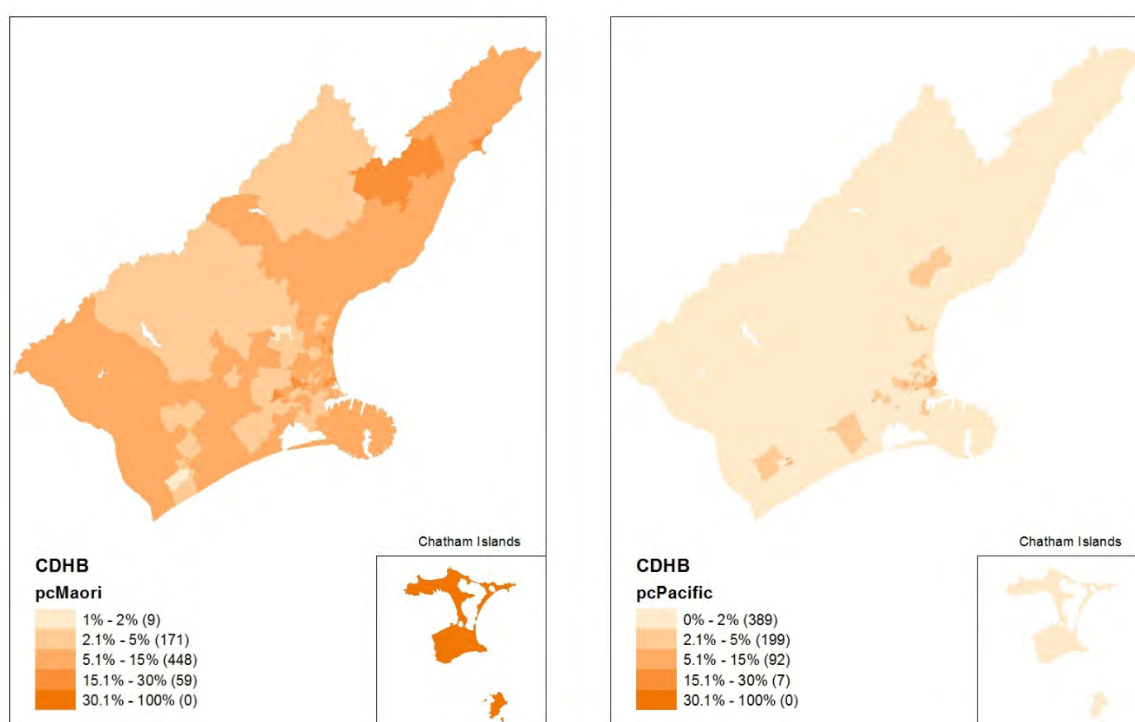
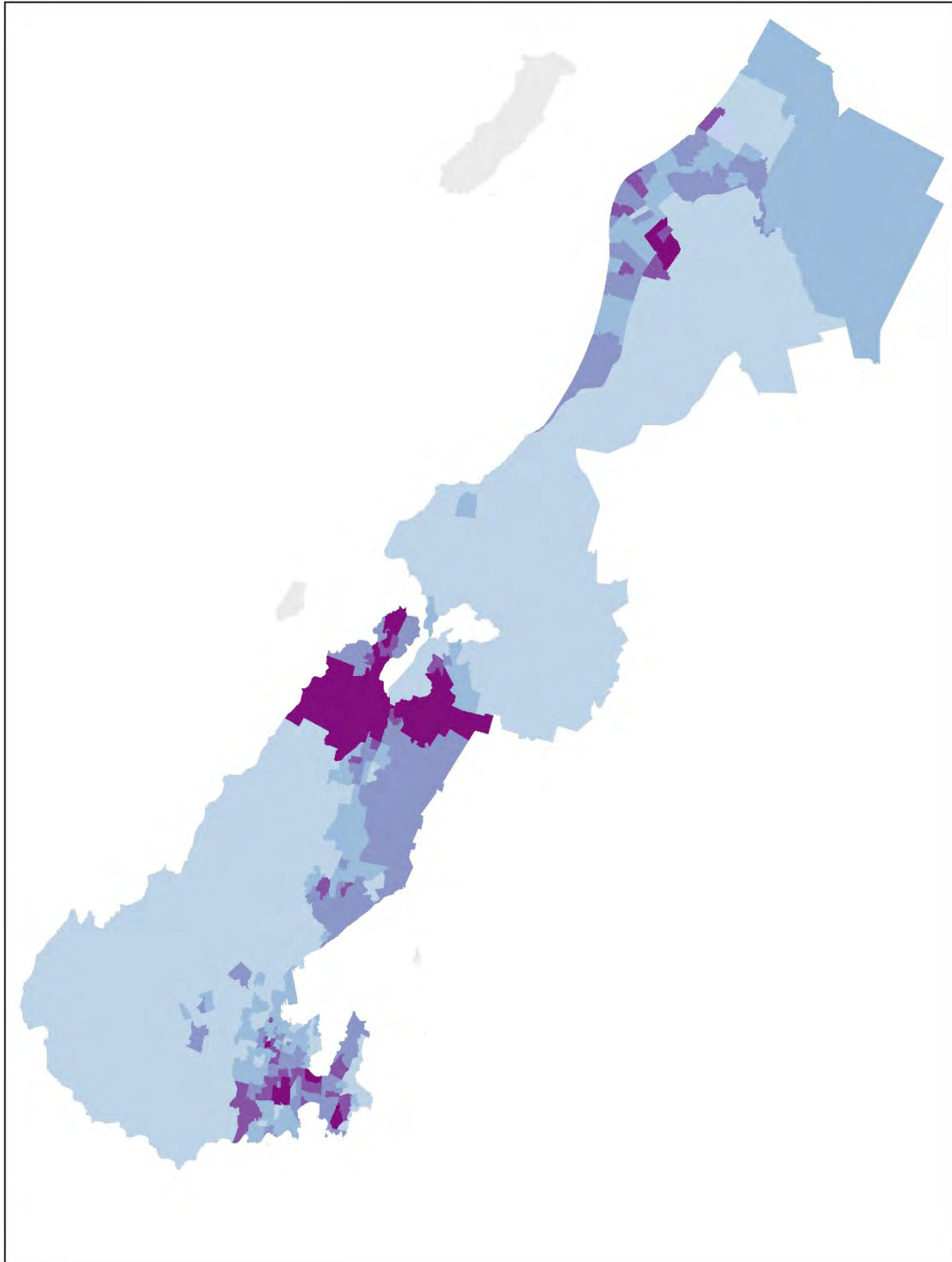


Figure 8. Distribution of Māori and Pacific people in the CDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Capital and Coast DHB



Capital and Coast DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Capital and Coast DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

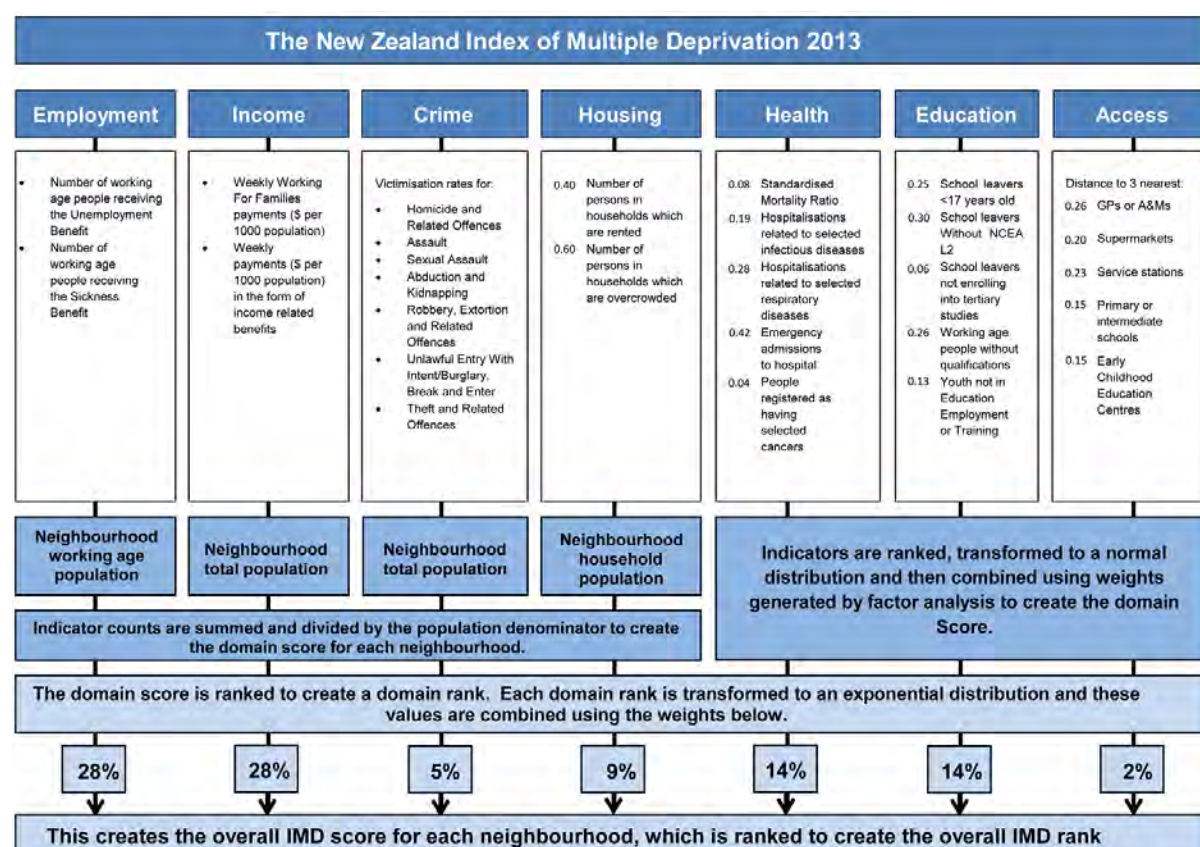


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Capital and Coast DHB (CCDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same as all of NZ, we would see 20% of the CCDHB's 404 data zones in each quintile. However, Q5 deprivation was significantly lower than average for six of the seven domains, and for overall deprivation (IMD). Only the Housing Domain had above average rates of Q5 deprivation. Q4 deprivation was lower than average except for the Access Domain ($115/404 = 28.5\%$). The CCDHB has low levels of overall IMD deprivation, with only 22.5% ($91/404$) of its data zones in Q4 or Q5.

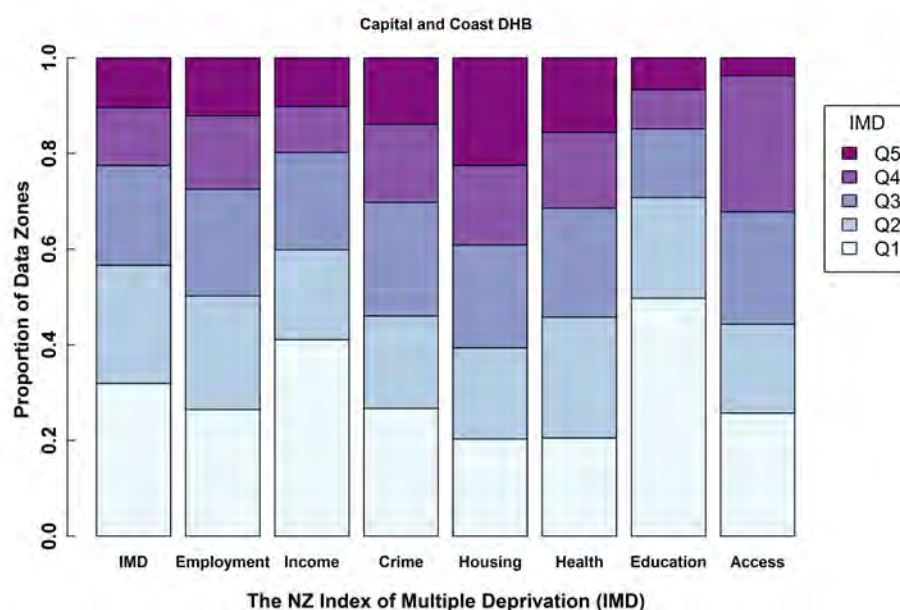


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the CCDHB

Table 1 shows summary statistics by domain for the 42 CCDHB data zones that were among NZ's 20% most deprived for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Housing (5531), Health (5428), Income (5378), Employment (5349) and Education (4943) were all contributing to high overall deprivation in these 42 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ⁷ deprivation ranks by domain for 42 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4790 | 4210 | 4569 | 2411 | 3105 | 3750 | 1353 | 76 |
| Max | 5877 | 5873 | 5813 | 5948 | 5901 | 5936 | 5812 | 3688 |
| Median | 5399 | 5349 | 5378 | 4323 | 5531 | 5428 | 4943 | 1667 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 42 data zones in the CCDHB with Q5 IMD deprivation

⁷ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

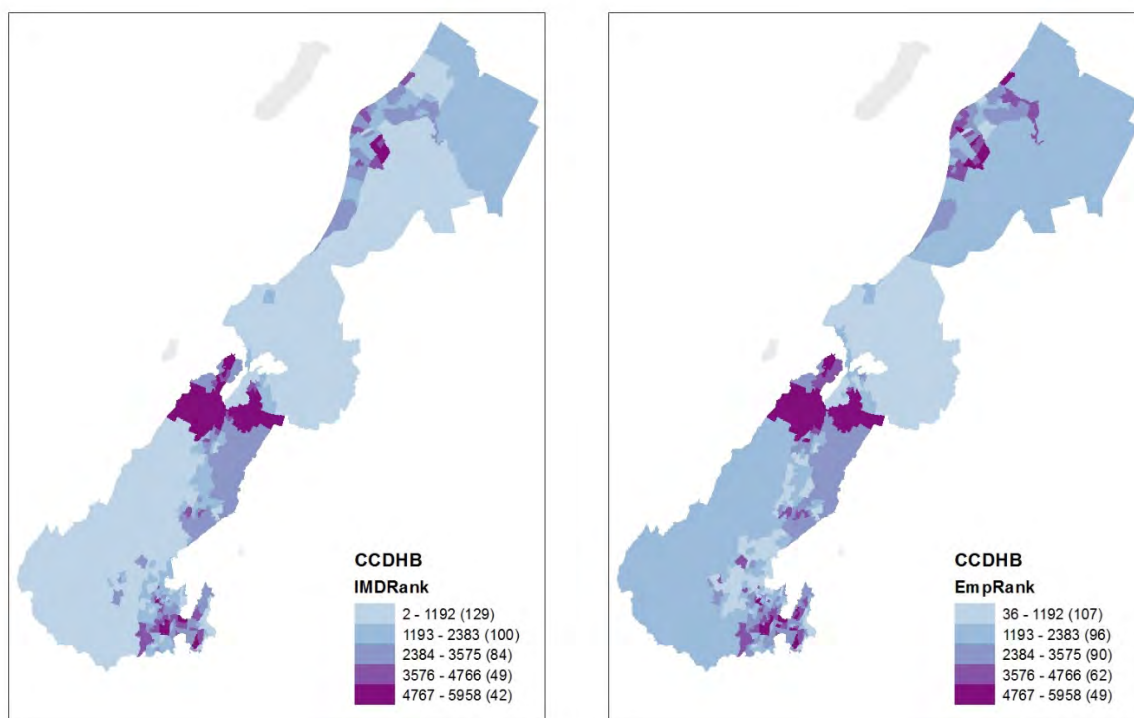


Figure 3. Distribution of overall IMD and employment deprivation in the CCDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows relatively low levels of Q5 disadvantage in the CCDHB in 2013. Only 10.4% (42/404) of data zones in the CCDHB were among the most deprived 20% in NZ (Q5), while 31.9% (129/404) were among the least deprived (Q1). The median IMD rank in the CCDHB was 2085, 15.0% (894 ranks) better than the NZ median of 2979. There were four Q5 data zones in Paraparaumu, 31 data zones stretching uninterrupted from Titahi Bay to Waitangirua and Ascot Park, and seven in Wellington City. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the CCDHB further.

The map for the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the CCDHB, 12.1% (49/404) of data zones were among the 20% most deprived in NZ for the Employment Domain, while 26.5% (107/404) of data zones were in the least deprived 20%. The median employment deprivation rank in the CCDHB was 2358, 10.4% (621 ranks) better than the NZ median. The distribution of Q5 employment deprivation closely resembled the pattern for overall IMD deprivation, but with seven additional Q5 data zones. Most rural areas in the CCDHB had low levels of employment deprivation.

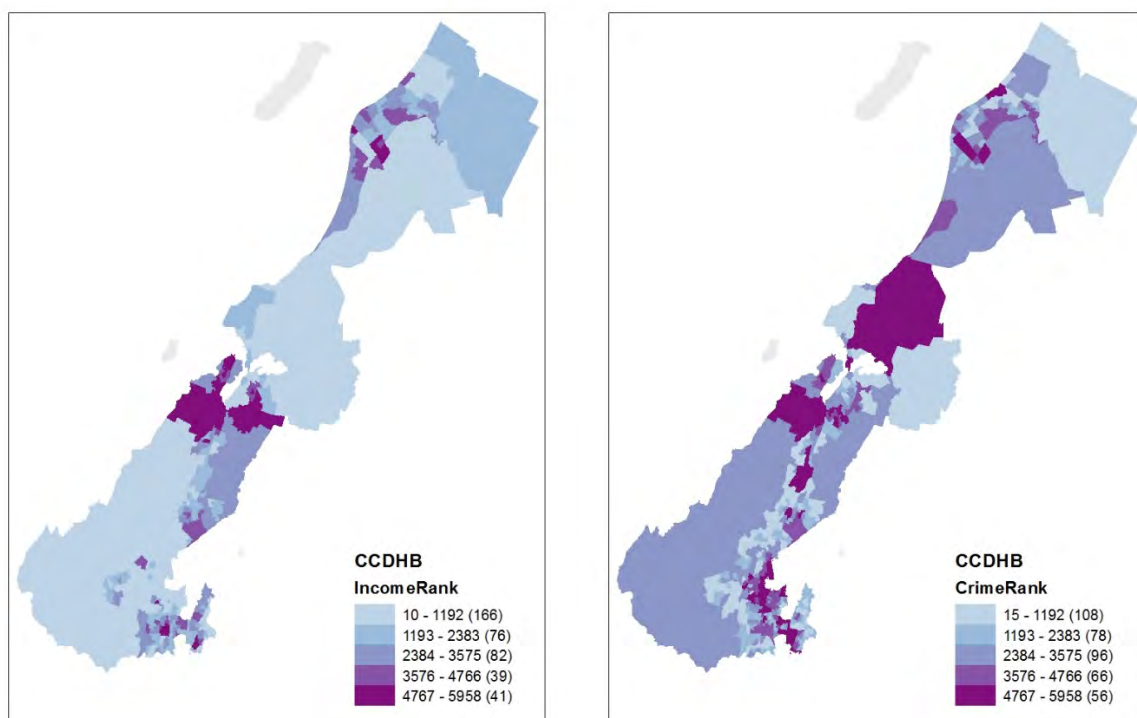


Figure 4. Distribution of income and crime deprivation in the CCDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the CCDHB, only 10.1% (41/404) of data zones were in NZ's 20% most income deprived, while 41.1% (166/404) of data zones were in the 20% least income deprived. The median income deprivation rank in the CCDHB was 1722, 21.1% (1258 ranks) better than the NZ median. The distribution of Q5 income deprivation closely resembles the pattern for overall IMD deprivation. Most rural areas in the CCDHB had low levels of income deprivation.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the CCDHB, only 13.9% (56/404) of data zones were among NZ's 20% most deprived for the Crime Domain, while 26.7% (107/404) were among NZ's 20% least deprived. The median crime deprivation rank in the CCDHB was 2581, 6.7% (398 ranks) better than the NZ median. The 'footprint' of Q5 crime deprivation was more extensive than that of Q5 overall (IMD) deprivation, with 14 additional data zones. Unsurprisingly, most Q5 crime data zones occurred in urban areas. However, rural and semi-rural data zones with Q5 crime deprivation occur in the area around Pimmerton and the Paekakariki Hill; around the Kapiti Quarry and the Kapiti Coast Airport in Paraparaumu; and around the Waikanae Golf Club.

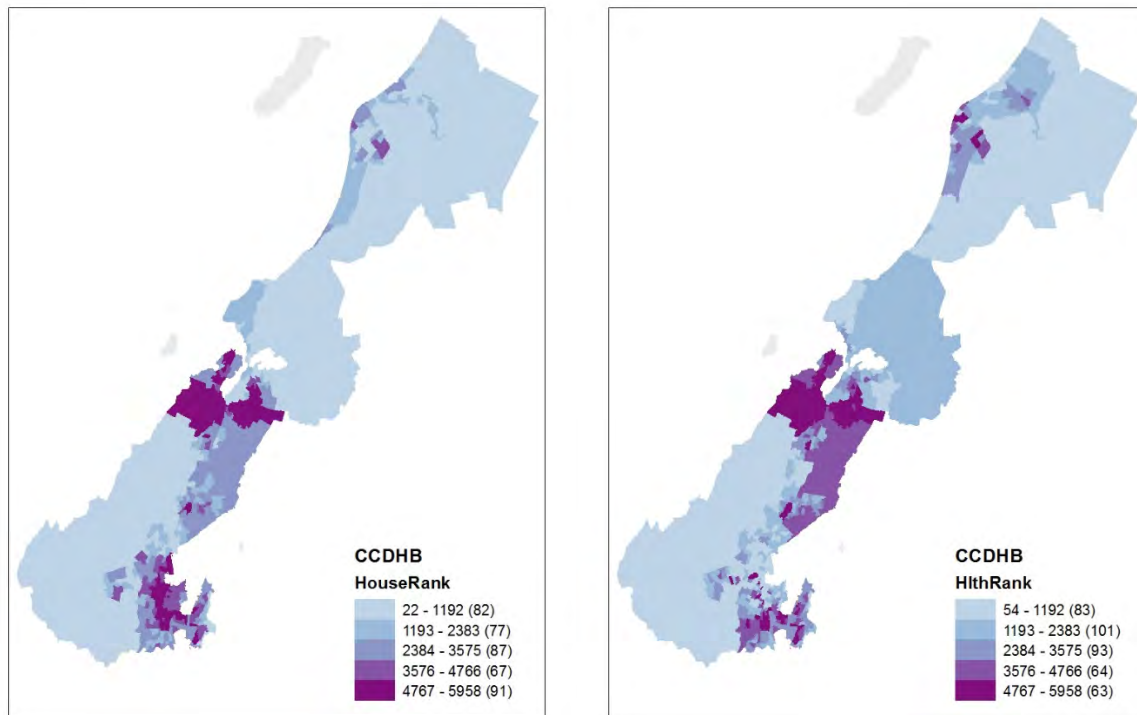


Figure 5. Distribution of housing and health deprivation in the CCDHB

The Housing Domain measures the proportion of people living in overcrowded households and rented dwellings. In the CCDHB, 22.5% (91/404) of data zones were among the 20% most deprived in NZ, and 20.3% (82/404) of data zones were in the 20% least deprived. The median housing deprivation rank in the CCDHB was 3002, only 0.4% (23 ranks) worse than the NZ median. There were 91 data zones in the CCDHB with Q5 housing deprivation, more than double the number for overall IMD deprivation (42). Q5 housing deprivation occurred in three parts of the CCDHB: the area from Titahi Bay to Porirua and Ascot Park, in the city area from Wellington International Airport to Pipitea, and in two data zones in Johnsonville.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the CCDHB, 15.6% (63/404) of data zones were among the 20% most health deprived in NZ, and 20.5% (83/404) were among the least deprived 20%. The median health deprivation rank in the CCDHB was 2509, 7.9% (470 ranks) better than the NZ median. There were 63 data zones in the CCDHB with Q5 health deprivation, compared to only 42 for overall IMD deprivation. Q5 health deprivation occurred in three main parts of the CCDHB; in four data zones in Paraparaumu, in 31 data zones in the area from Titahi Bay to Porirua and Ascot Park, and in the city area from Wellington International Airport to Pipitea.

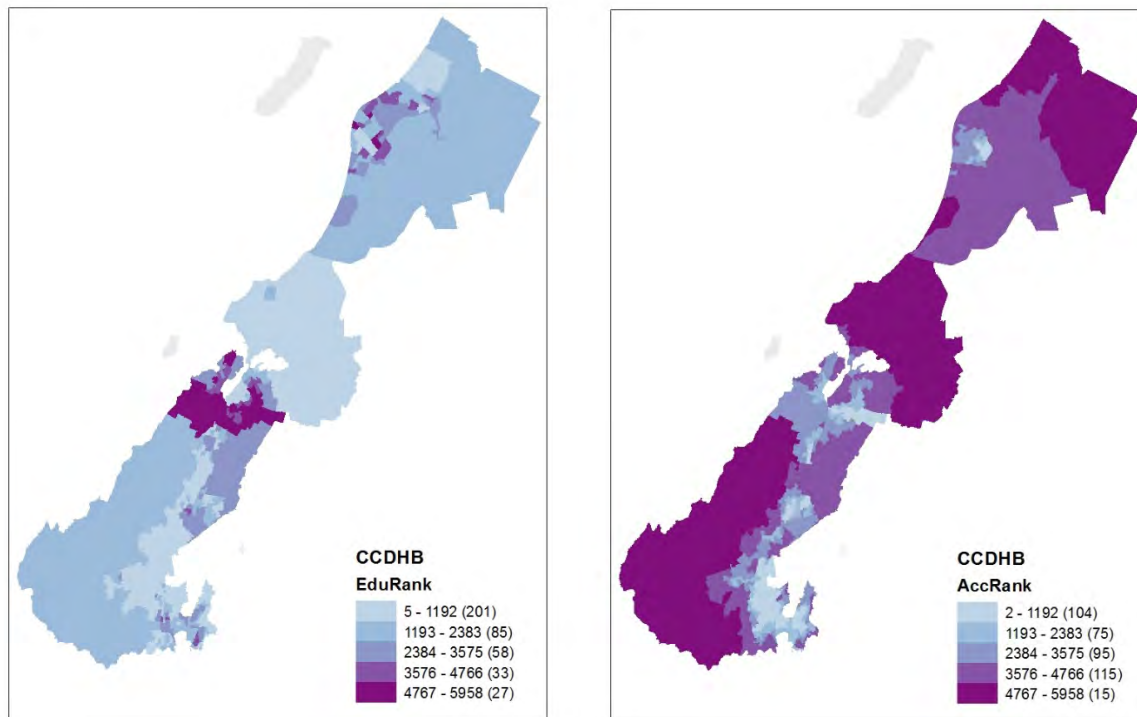


Figure 6. Distribution of education and access deprivation in the CCDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the CCDHB, only 6.7% (27/404) of data zones were among NZ's 20% most education deprived, and 49.8% (201/404) were in the least deprived 20%. The median education deprivation rank in the CCDHB was 1222, 29.5% (1757 ranks) better than the NZ median. There were only 27 data zones in the CCDHB with Q5 education deprivation, compared to 42 for overall IMD deprivation. The 27 Q5 data zones were made up of four data zones in Paraparaumu and 23 data zones in the area from Titahi Bay to Porirua and Ascot Park. There were no data zones with Q5 health deprivation in the city area from Wellington International Airport to Pipitea.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the CCDHB, only 3.7% (15/404) of data zones were among NZ's 20% most access deprived, and 25.7% (104/404) were in NZ's 20% least deprived. The median access deprivation rank in the CCDHB was 2673, 5.1% (306 ranks) better than the NZ median. Unsurprisingly, access was poorest (Q5) in rural areas, including Wellington's west and south coast, the Akatarawa Forest and the Tararua Forest Park. However, access to services was also poor (Q5) just north of Paekakariki, and from Peka Peka northwards to Otaki.

Age profile of the Capital and Coast DHB

According to the 2013 census, the CCDHB had a total population of 307,250 people living in 404 data zones, with a mean of 760 people (range: 501 to 972).

| Mean data zone proportions for five age groups in the CCDHB | | | | | |
|---|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| CCDHB | 18.8% | 15.9% | 29.1% | 24.3% | 12.0% |
| New Zealand ⁸ | 20.4% | 13.4% | 25.6% | 25.9% | 14.4% |
| Difference | -1.6% | 2.5% | 3.5% | -1.6% | 2.4% |

Table 2. Mean data zone proportions for five age groups in the CCDHB

Table 2 shows that the age profile of the CCDHB differs most from the national age profile in that it has 2.5% more people aged 15-24 and 3.5% more people aged 25-44. Figure 7 shows the distribution of people in these two age groups.

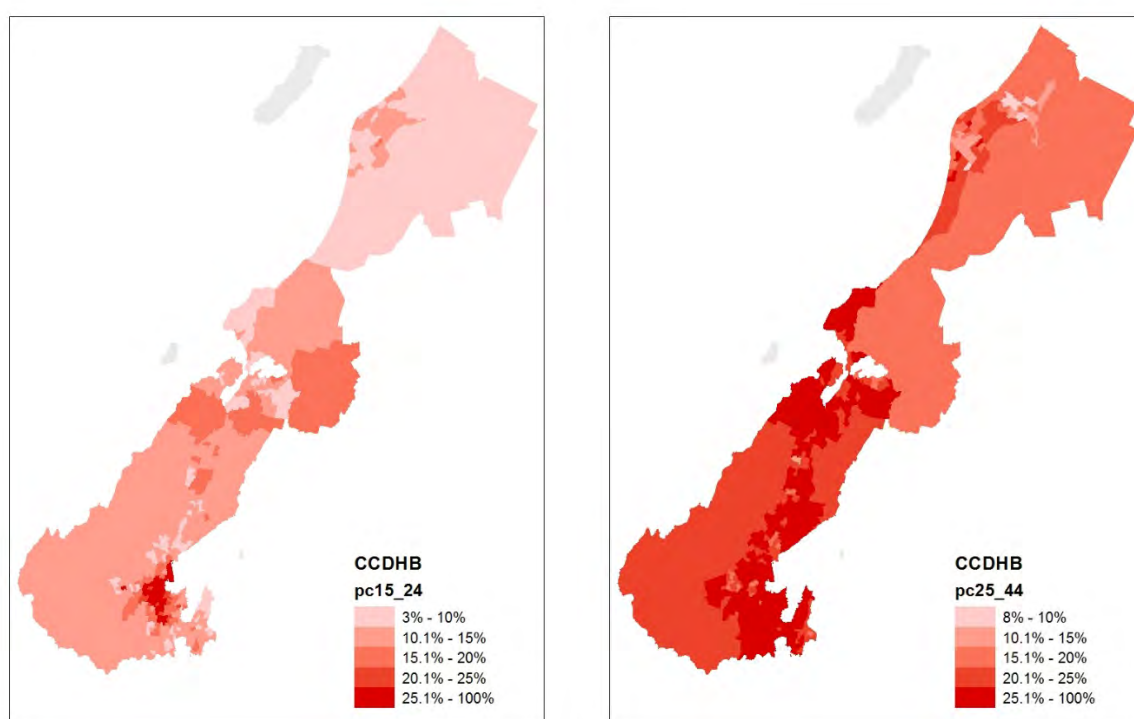


Figure 7. Distribution of people aged 15-24 and people aged 25-44 in the CCDHB

Ethnicity profile of the Capital and Coast DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the CCDHB in 2013 ranged from 1.2% to 65.6%. The overall proportion of Māori was 10.8%, which is significantly lower than the national

⁸ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

proportion of 15.3%. The proportion of Māori was greatest in two data zones in Takapuwahia (65.6% and 52.6%), followed by three in Titahi Bay (43%, 42.2% and 41.8%).

The proportion of Pacific ethnicity in CCDHB data zones in 2013 ranged from 0.0% to 73.9%. The overall proportion of Pacific ethnicity was 8.5%, which is slightly higher than the national proportion of 7.3%. The proportion of Pacific ethnicity was greatest in a data zone located in Waitangirua (73.9%), followed by three data zones in Cannon's Creek (73.7%, 73.4% and 72.3%).

The proportion of New Zealand European and Other ethnicities (NZE0) living in data zones within the CCDHB in 2013 ranged from 21.6% to 100%. The overall proportion of NZEO was 90.2%, which is greater than the national proportion of 87.2%. The lowest proportion of NZEO residents (21.6%) occurred in the Waitangirua data zone — the same data zone that had the highest proportion of Pacific.

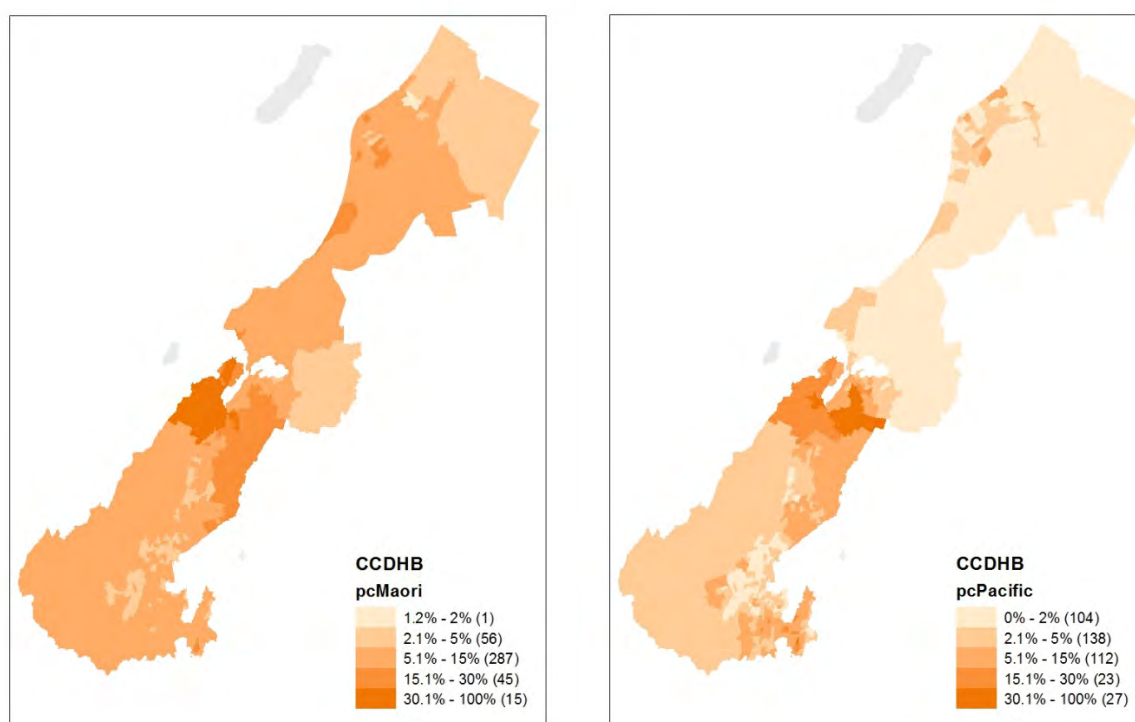
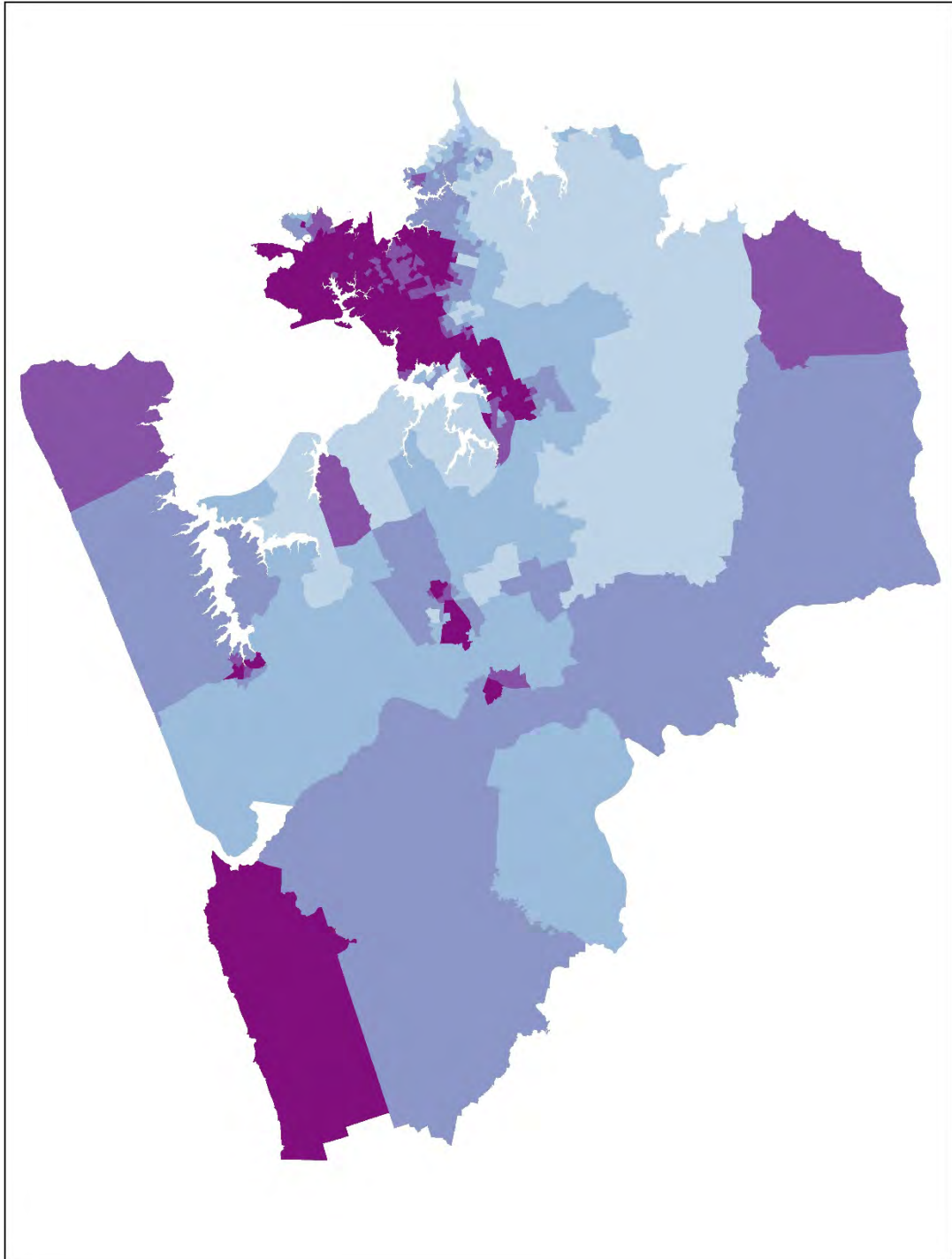


Figure 8. Distribution of Māori and Pacific people in the CCDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Counties Manukau DHB



Counties Manukau DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Counties Manukau DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level, using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, data zones are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

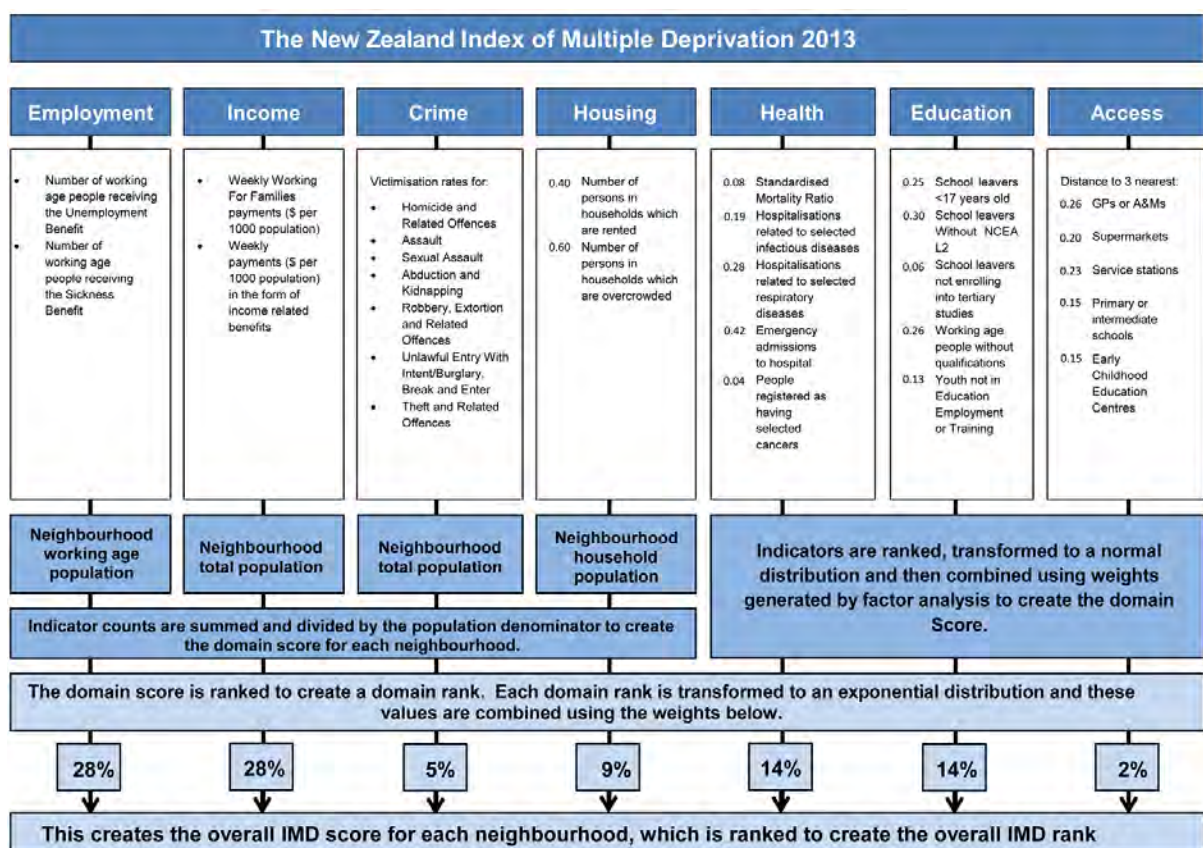


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Counties Manukau DHB (CMDHB) that belonged to each deprivation quintile in 2013. If the deprivation circumstances were the same as for all of NZ, we would see 20% of the CMDHB's 625 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was significantly greater than 20% for overall IMD deprivation and for all domains except Access. The proportion of data zones with Q4 deprivation was also greater than 20% for the Employment, Crime and Education domains. The CMDHB had high levels of overall IMD deprivation, with 62.1% (388/625) of its data zones in Q4 or Q5.

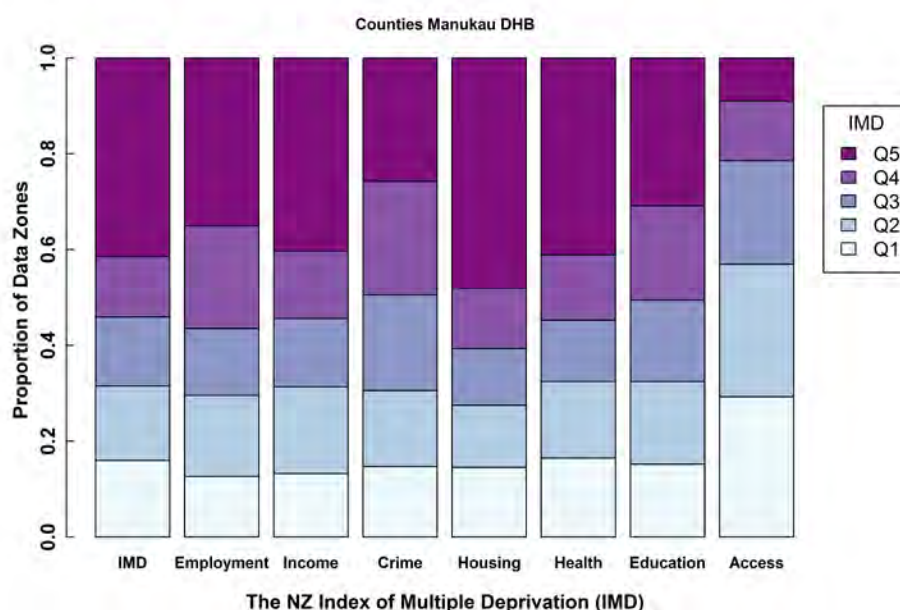


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the CMDHB

Table 1 shows summary statistics by domain for the 259 CMDHB data zones that were among NZ's 20% most deprived for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Housing (5747), Income (5545), Health (5533), Employment (5301) and Education (5173) were contributing to high overall IMD deprivation in these 259 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ⁹ deprivation ranks by domain for 259 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4769 | 3162 | 3991 | 1290 | 2718 | 3539 | 1938 | 6 |
| Max | 5957 | 5953 | 5958 | 5954 | 5958 | 5955 | 5958 | 5866 |
| Median | 5563 | 5301 | 5545 | 4551 | 5747 | 5533 | 5173 | 1281 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 259 data zones in the CMDHB with Q5 IMD deprivation

⁹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

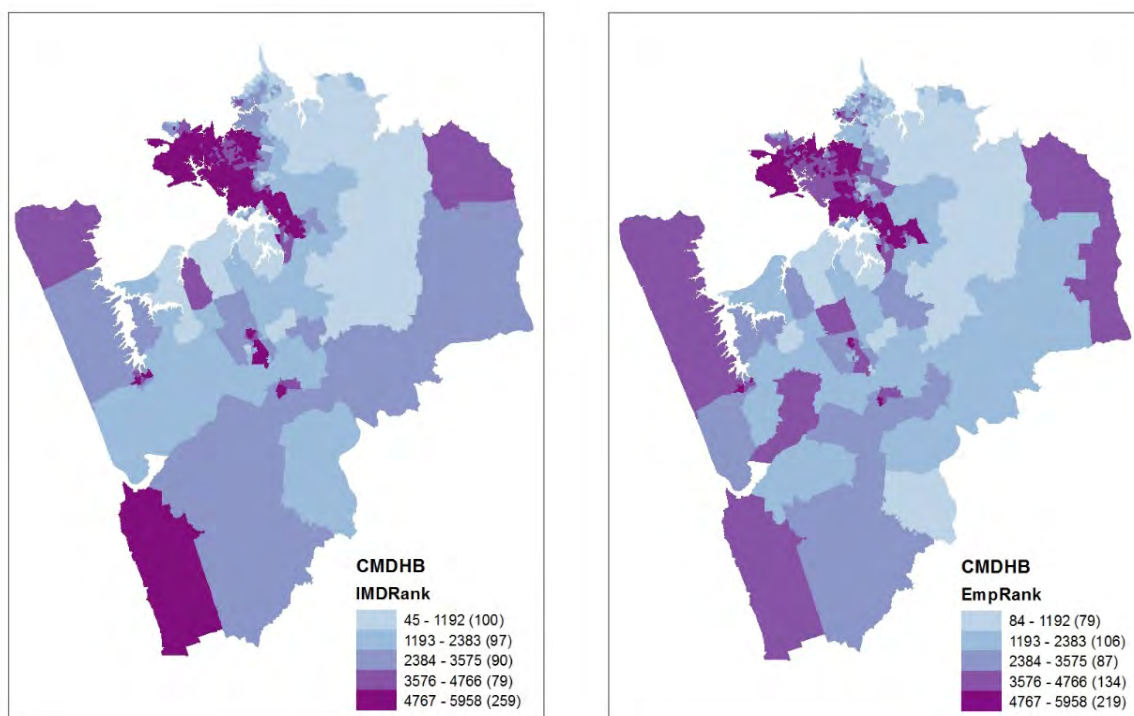


Figure 3. Distribution of overall IMD and employment deprivation in the CMDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows high levels of Q5 deprivation in the CMDHB, with 41.4% (259/625) of its data zones among the most deprived 20% in NZ (Q5). Only 16% (100/625) were in the least deprived 20% (Q1). The median IMD rank in the CMDHB was 4174, 20.1% (1195 ranks) worse than the NZ median of 2979. Most of the Q5 data zones were concentrated in the northern part of the DHB, such as Mangere and Papatoetoe, but they also occurred in Waiuku, Pukekohe, Tuakau and Port Waikato. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the CMDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the CMDHB, 35.0% (219/625) of data zones were among the 20% most deprived in NZ for the Employment Domain, while only 12.6% (79/625) of data zones were in the least deprived 20%. The median employment deprivation rank in the CMDHB was 3975, 16.7% (996 ranks) worse than the NZ median. Q5 employment deprivation followed the general pattern of overall IMD deprivation, but with 40 fewer Q5 data zones in places like Mangere and Papatoetoe. There were eight Q5 data zones in Waiuku, Pukekohe and Tuakau.

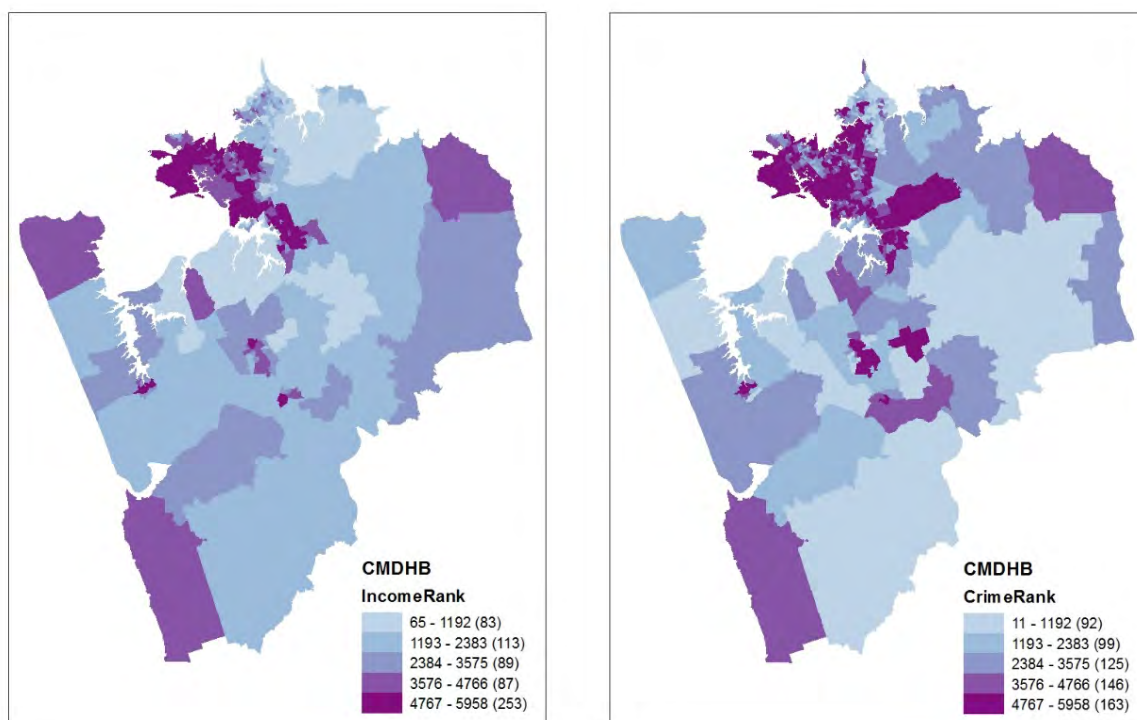


Figure 4. Distribution of income and crime deprivation in the CMDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the CMDHB, 40.3% (252/625) of data zones were among NZ's 20% most income deprived, while only 13.8% (38/625) of data zones were among the 20% least income deprived. The median income deprivation rank in the CMDHB was 3991, 17.0% (1012 ranks) worse than the NZ median. High (Q5) levels of income deprivation closely followed the pattern of Q5 overall deprivation, but there were slightly fewer Q5 income deprived data zones in Mangere, Wiri and Takanini.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the CMDHB, 25.8% (161/625) of data zones were in the most deprived 20% for the Crime Domain, while only 14.7% (92/625) were in the Least Deprived 20%. The median crime deprivation rank in the CMDHB was 3538, 9.4% (559 ranks) worse than the NZ median. On the map, high (Q5) crime deprivation extends over a wider area than Q5 overall deprivation, but it has 96 fewer Q5 data zones (163 for Crime versus 259 for IMD). It extends into East Tamaki, Takanini, Ardmore and Bombay, as well as Waiuku, Pukekohe and Tuakau.

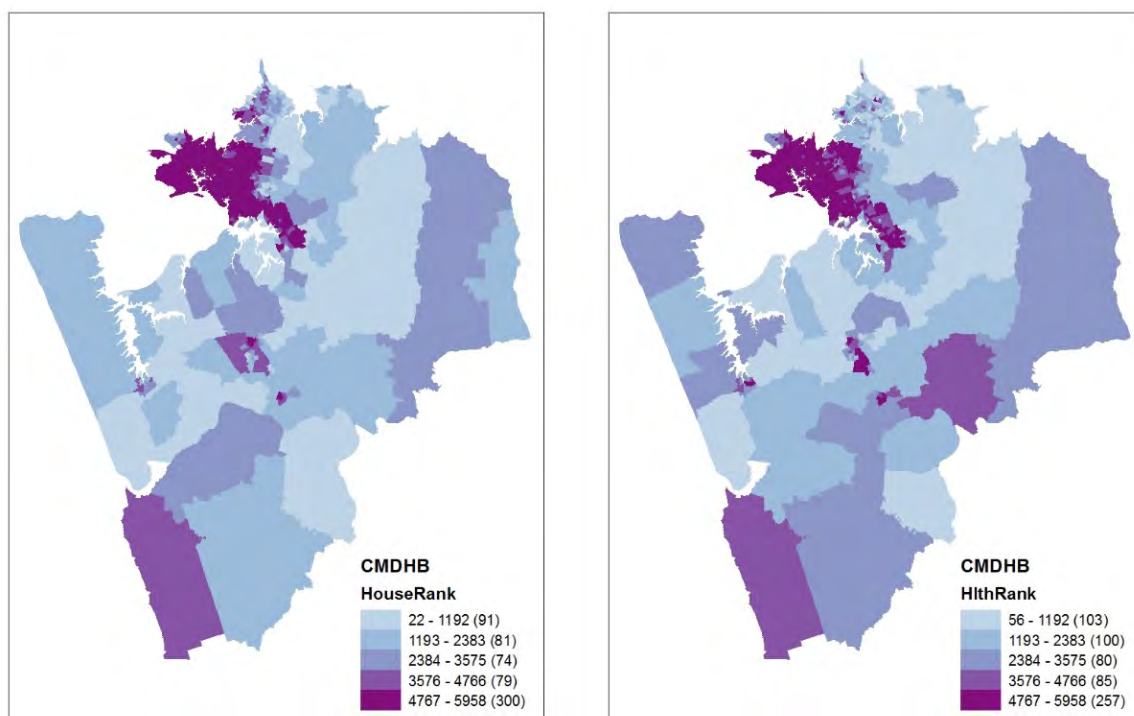


Figure 5. Distribution of housing and health deprivation in the CMDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the CMDHB, a massive 48% (300/625) of data zones were among the 20% most deprived in NZ, and only 14.6% (91/625) were among the least deprived 20%. The median housing deprivation rank in the CMDHB was 4640, 27.9% (1661 ranks) worse than the NZ median. On the map, these high (Q5) levels of housing deprivation extend uninterrupted across South Auckland from Mangere to Papakura, and include parts of Pakuranga and Dannemora, as well as Pukekohe and Tuakau.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the CMDHB, 41.1% (257/625) of data zones were among the 20% most health deprived in NZ, and only 16.5% (103/625) were among the least deprived 20%. The median health deprivation rank in the CMDHB is 4020, 17.5% (1041 ranks) worse than the NZ median. The number of data zone with Q5 health deprivation almost exactly matches the number with Q5 overall deprivation, but there are a few more in East Tamaki and a few less in Takanini, Waiuku, Pukekohe and Tuakau.

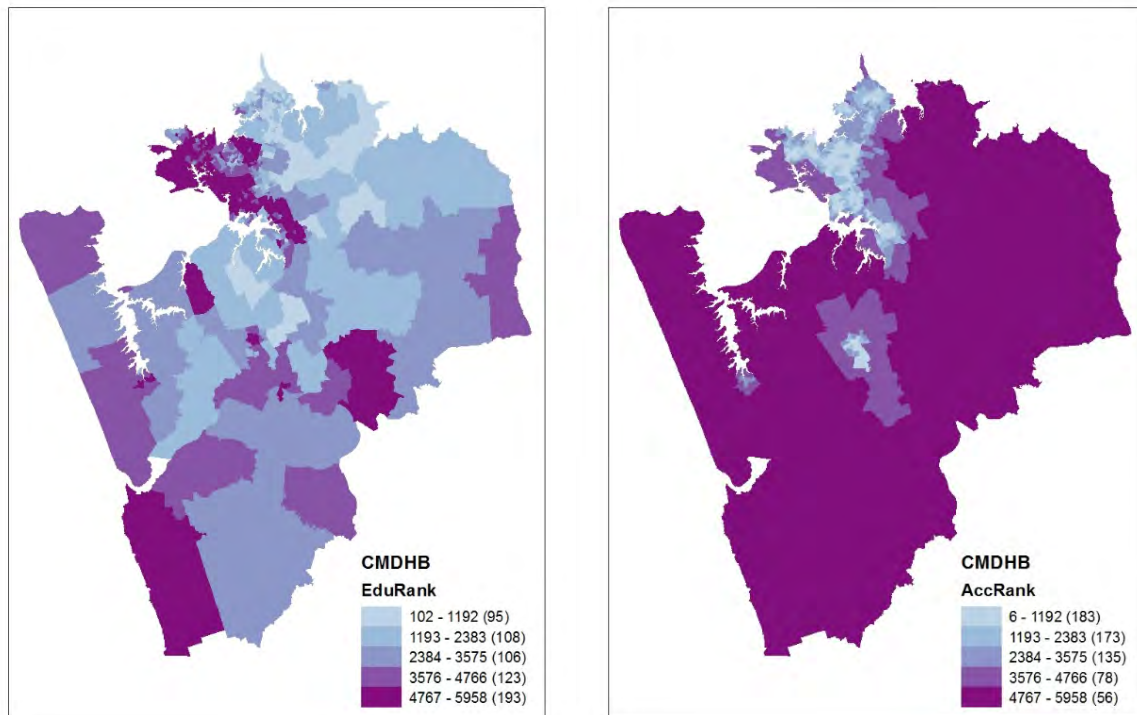


Figure 6. Distribution of education and access deprivation in the CMDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the CMDHB, 30.9% (193/625) of data zones were among NZ's 20% the most education deprived, and 15.2% (95/625) were in the least deprived 20%. The median education deprivation rank in the CMDHB was 3594, 10.3% (615 ranks) worse than the NZ median. Q5 levels of education deprivation occurred in many urban areas of South Auckland and further south in Pukekohe, Waiuku and Tuakau. They also occurred in rural areas such as Kingseat, Mercer and Port Waikato.

The Access Domain measures the distance from the population weighted centre of each data zone to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the CMDHB, 9% (56/625) of data zones were among NZ's 20% most access deprived, and 29.3% (183/625) were in NZ's 20% least deprived. The median access deprivation rank in the CMDHB was 2057, 15.5% (922 ranks) better than the NZ median. High (Q5) levels of access deprivation occurred in rural parts of the CMDHB outside the main urban area of South Auckland and the towns of Waiuku, Pukekohe and Tuakau.

Age profile of the Counties Manukau DHB

According to the 2013 census, the CMDHB had a total data zone population of 469,194 people living in 625 data zones, with a mean of 751 people each (range: 501 to 1899).

| Mean data zone proportions for five age groups in the CMDHB | | | | | |
|---|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Counties Manukau DHB | 24.1% | 15.1% | 26.3% | 23.8% | 10.7% |
| New Zealand ¹⁰ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 3.7% | 1.3% | 0.7% | -2.0% | -3.6% |

Table 2. Mean data zone proportions for five age groups in the CMDHB

Table 2 shows that the age profile of the CMDHB differs most from the national age profile in that it has 3.7% more children aged 0-14 and 3.6% fewer people aged 65+. Figure 7 shows the distribution of people in these two age groups.

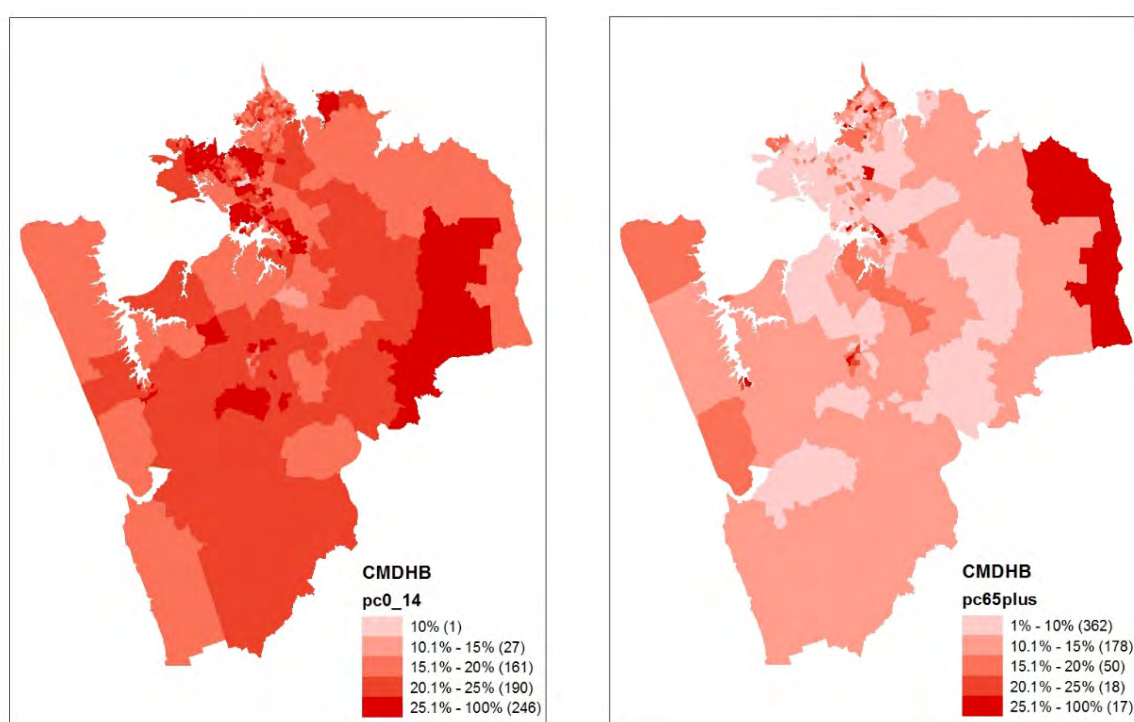


Figure 7. Distribution of children aged 0-14 and people aged 65+ in the CMDHB

Ethnicity profile of the Counties Manukau DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the CMDHB in 2013 ranged from 0.0% to 71.4%. The overall

¹⁰ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

proportion of Māori in the CMDHB was 15.5%, which was close to the national proportion of 14.9%. The proportion of Māori per data zone was greatest in a data zone located in Pukekohe (71.4%), followed by one in Papakura (59.2%).

The proportion of Pacific ethnicity living in data zones within the CMDHB ranged from 0.0% to 89.1% in a Mangere East data zone. The overall proportion of Pacific ethnicity in the CMDHB was 23.8%, which is approximately three times greater than the national proportion of 7.3%. The highest proportions of Pacific are located in areas of South Auckland, such as Mangere, Papatoetoe, Otara, Wiri and Manurewa.

The proportion of New Zealand European and Other ethnicities (NZEO) in CMDHB data zones ranged from 8.1% to 100%. The overall proportion of NZEO in the CMDHB was 72.4%, which was significantly lower than the national proportion of 87.5%. The lowest proportions of NZEO (<30%) lived in South Auckland, Pukekohe and Tuakau.

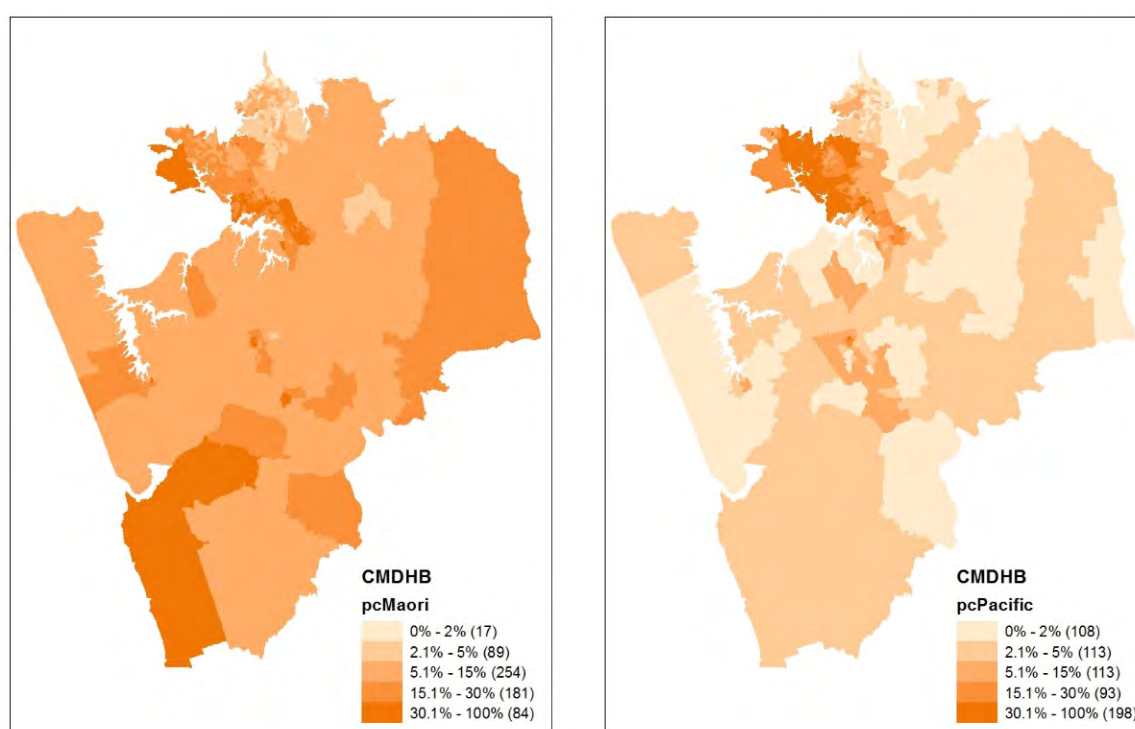
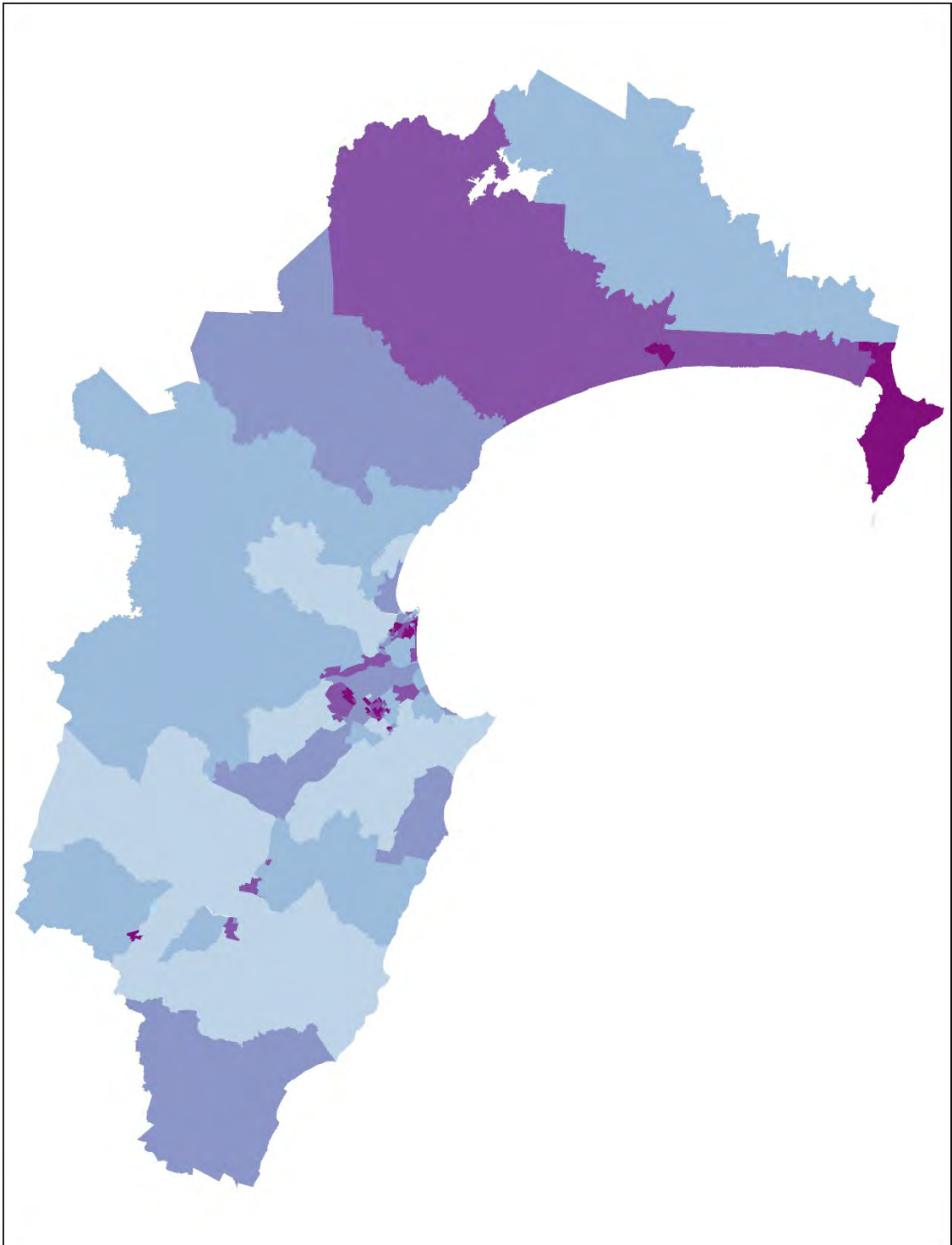


Figure 8. Distribution of Māori and Pacific people in the CMDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Hawke's Bay DHB



Hawke's Bay DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Hawke's Bay DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

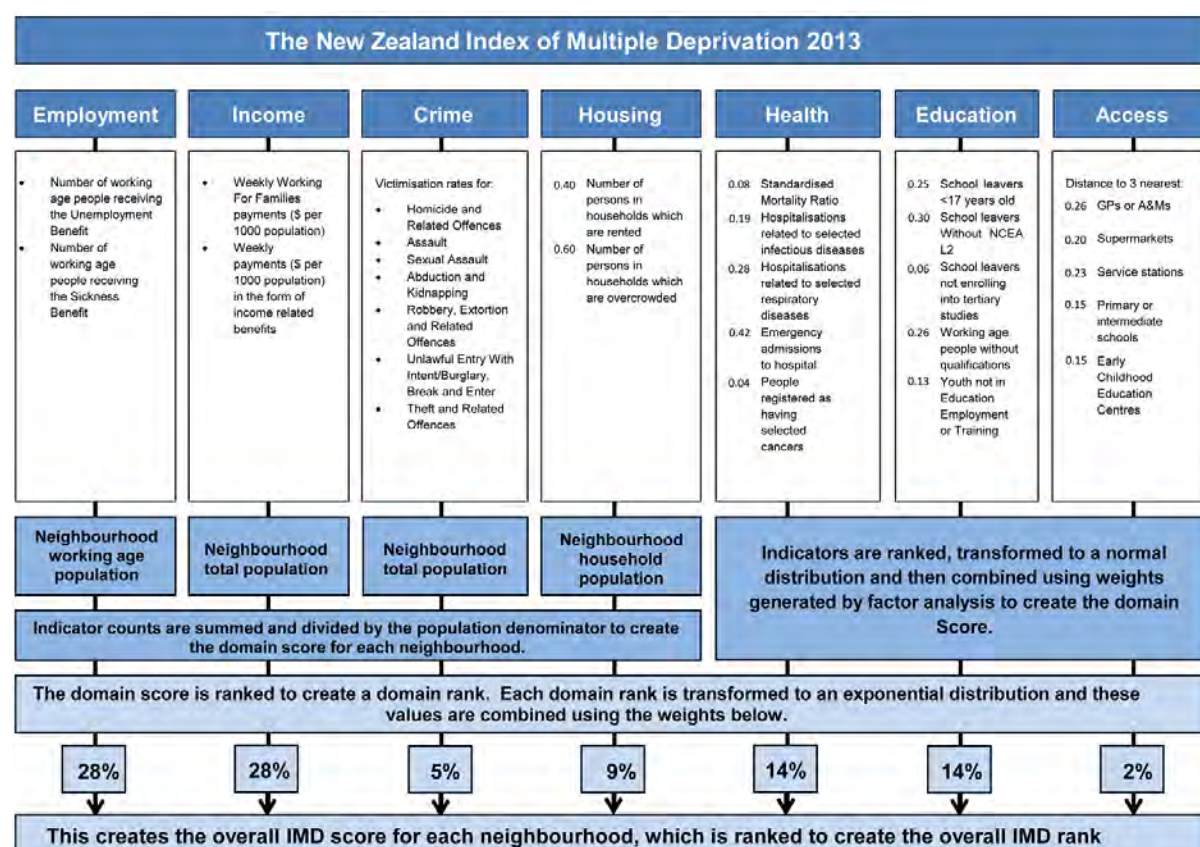


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Hawke's Bay DHB (HBDHB) that belong to each deprivation quintile for overall IMD deprivation and for the seven domains. If the deprivation circumstances were the same as all of NZ, we would see 20% of the HBDHB 220 data zones to be in each quintile. However, Figure 2 shows this not to be the case. The proportion of data zones with Q5 deprivation was greater than 20% for overall (IMD) deprivation and for all the domains except Employment, Housing and Access. The proportion of data zones with Q4 deprivation was also greater than 20% for all the domains except Education and Access. The HBDHB has high levels of overall IMD deprivation, with 50.5% (111/220) of its data zones in either Q4 or Q5.

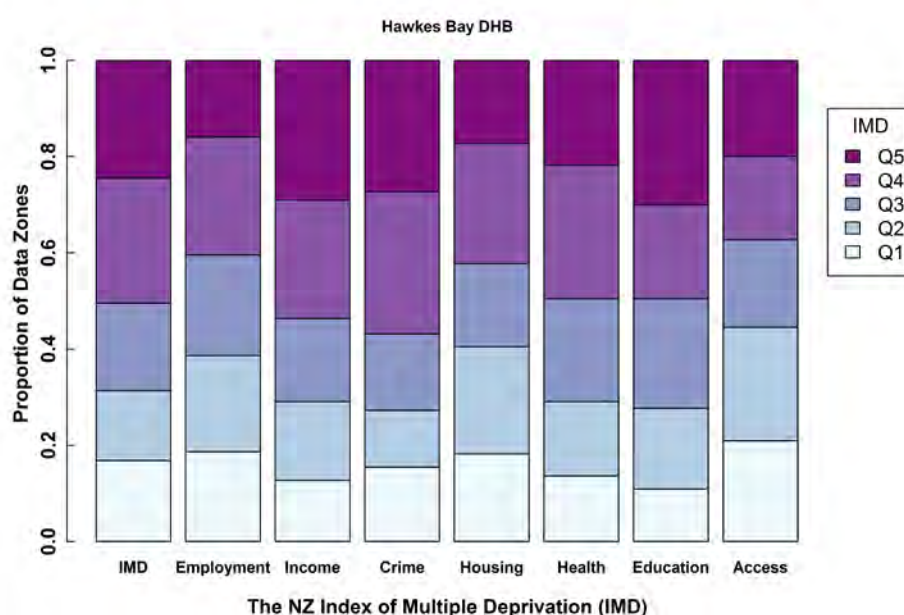


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the HBDHB

Table 1 shows summary statistics by domain for the 54 HBDHB data zones that were among NZ's 20% most deprived and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Income (5647), Education (5557), Health (5088), Housing (5076) and Employment (4829) were contributing to high overall deprivation in these 54 data zones in 2013. Note that domains carry different weights in the IMD (see Figure 1).

| Min, max and median ¹¹ deprivation ranks by domain for 54 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4786 | 2413 | 3042 | 2926 | 3749 | 2832 | 3731 | 9 |
| Max | 5910 | 5917 | 5950 | 5956 | 5889 | 5933 | 5955 | 5915 |
| Median | 5407 | 4829 | 5647 | 5010 | 5076 | 5088 | 5557 | 1922 |

Table 1. Minimum, maximum and median deprivation ranks for 54 data zones with in the HBDHB with Q5 IMD deprivation

¹¹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

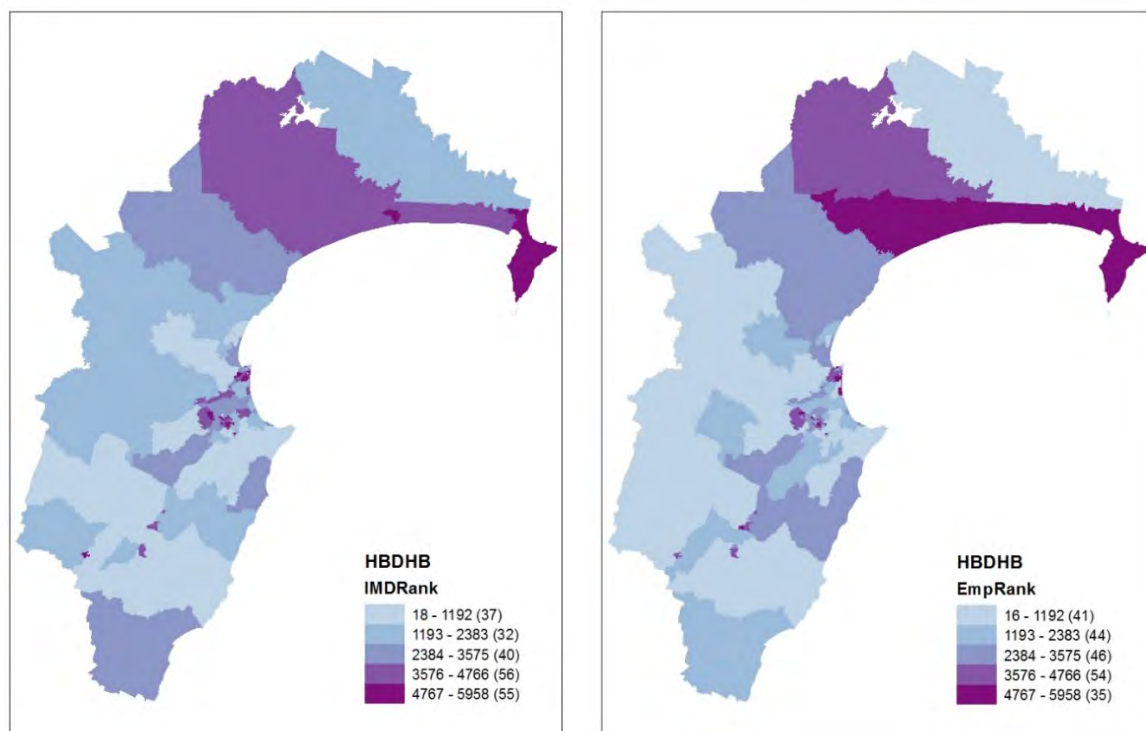


Figure 3. Distribution of overall IMD and employment deprivation in the HBDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall (IMD) deprivation on the left of Figure 3 shows high levels of Q5 deprivation in the HBDHB. 24.5% (54/220) of data zones in HBDHB were among the most deprived 20% in NZ, while only 16.8% (37/220) were in the least deprived 20% (Q1). The median deprivation rank in the HBDHB was 3586, 10.2% (607 ranks) worse than the NZ median of 2979. Most of the Q5 data zones were concentrated near the eastern coast of the HBDHB, but six of the 56 Q5 data zones were located in Wairoa. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to further explore the HBDHB.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who are receiving the Unemployment or Sickness Benefits in 2013. In the HBDHB, only 15.9% (35/220) of data zones were in the 20% most deprived in NZ for the Employment Domain, while 18.6% (41/220) of data zones were in the least deprived 20%. The median employment deprivation rank in the HBDHB was 2974, 0.1% (five ranks) better than the NZ median. High (Q5) employment deprivation occurred throughout the north and east of the DHB, and there was one Q5 data zone in Waipawa.

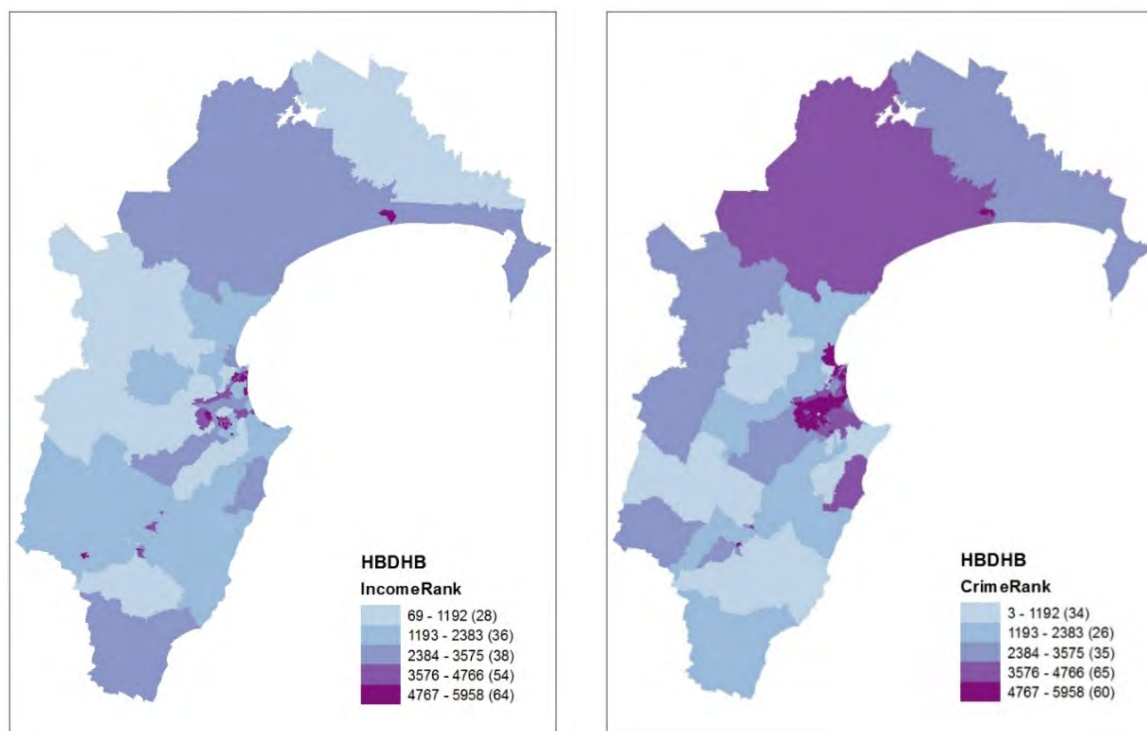


Figure 4. Distribution of income and crime deprivation in the HBDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the HBDHB, 29.1% (64/220) of data zones were in NZ's 20% most income deprived, while only 12.7% (28/220) of data zones were in the 20% least income deprived. The median income deprivation rank in the HBDHB was 3755, 13.0% (776 ranks) worse than the NZ median. These high levels of income deprivation closely followed the pattern of overall IMD deprivation, with high (Q5) income deprivation in the north and east of the DHB and in two Q5 data zones in the southern part.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the HBDHB, 27.3% (60/220) of data zones were in the most deprived 20% for the Crime Domain, while 15.5% (34/220) were in the least deprived 20%. The median crime deprivation rank in the HBDHB was 3799, 13.8% (820 ranks) worse than the NZ median. High (Q5) levels of crime deprivation were concentrated in urban areas such as Napier and Hastings.

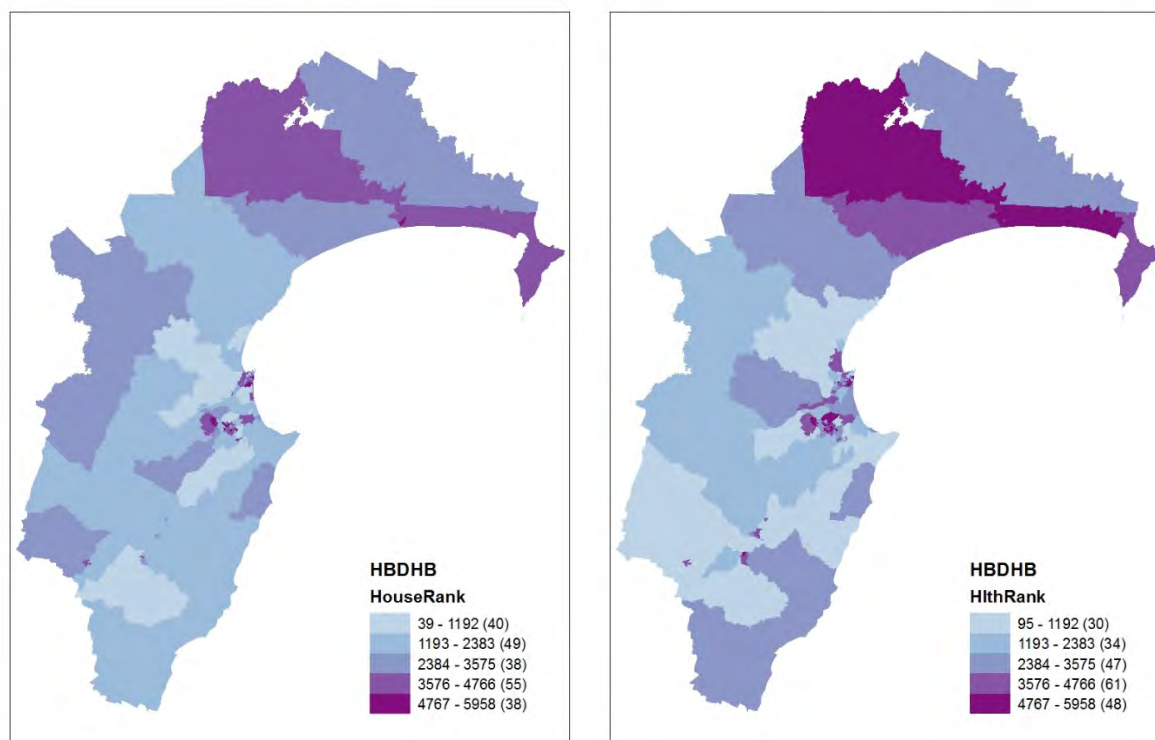


Figure 5. Distribution of housing and health deprivation in the HBDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%). In the HBDHB, 17.3% (38/220) of data zones were in the most deprived 20% in NZ, while 18.2% (40/220) of data zones were in the least deprived 20%. The median housing deprivation rank in the HBDHB was 2941, 0.6% (38 ranks) better than the NZ median. High (Q5) levels of housing deprivation occurred in the east of the HBDHB, including Napier and Hastings, and there were three Q5 data zones in Wairoa.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the HBDHB, 21.8% (48/220) of data zones were among the 20% most health deprived in NZ, while 13.6% (30/220) were among the least deprived 20%. The median health deprivation rank in the HBDHB was 3540, 9.4% (561 ranks) worse than the NZ median. High (Q5) levels of health deprivation occurred in the northern part of the DHB in Putere, Wairoa and Nuhaka, and there were 12 data zones with Q5 health deprivation in Napier and Hastings.

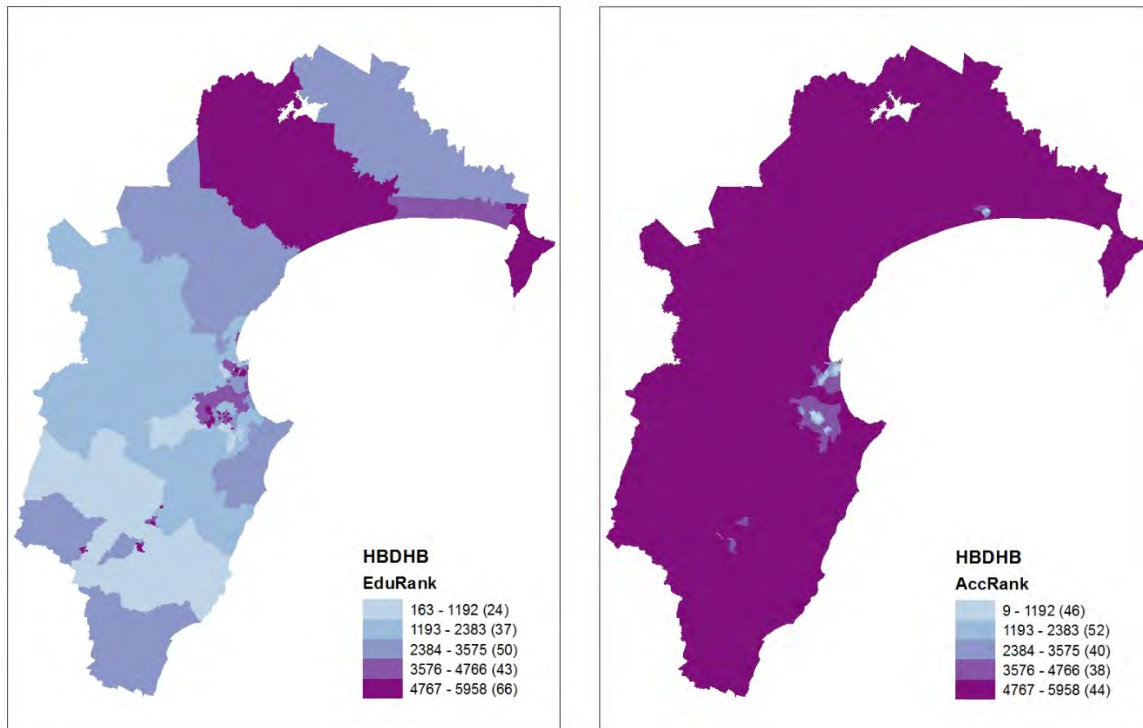


Figure 6. Distribution of education and access deprivation in the HBDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the HBDHB, 30% (66/220) of data zones were among NZ's 20% most education deprived, and only 10.9% (24/220) were in the least deprived 20%. The median education deprivation rank in the HBDHB was 3542, 9.4% (563 ranks) worse than the NZ median. These high (Q5) levels of education deprivation occurred throughout the HBDHB: in the north in Putere, Wairoa and Mahia, in the east in Napier and Hastings, and in the south in Otane, Waipawa and Waipukurau.

The Access Domain measures the distance from the population weighted centre of each data zone to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the HBDHB, 20% (44/220) of data zones were among NZ's 20% most access deprived, while 20.9% (46/220) were in NZ's 20% least deprived. The median access deprivation rank in the HBDHB was 2722, 4.3% (227 ranks) better than the NZ median. High (Q5) levels of access deprivation occurred throughout rural parts of the DHB. Urban centres like Napier, Hastings and Wairoa had good access to services, while Waipawa and Waipukurau had Q4 access deprivation.

Age profile of the Hawke's Bay DHB

According to the 2013 census, the HBDHB had a total data zone population of 151,080 people living in 220 data zones, with a mean of 687 people each (range: 498 to 999).

| Mean data zone proportions for five age groups in the HBDHB | | | | | |
|---|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Hawke's Bay DHB | 21.8% | 11.9% | 22.4% | 27.1% | 16.8% |
| New Zealand ¹² | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 1.4% | -1.9% | -3.2% | 1.3% | 2.5% |

Table 2. Mean data zone proportions for five age groups in the HBDHB

Table 2 shows that the age profile of the HBDHB differs most from the national age profile in that it has 3.2% fewer people aged 25-44 and 2.5% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

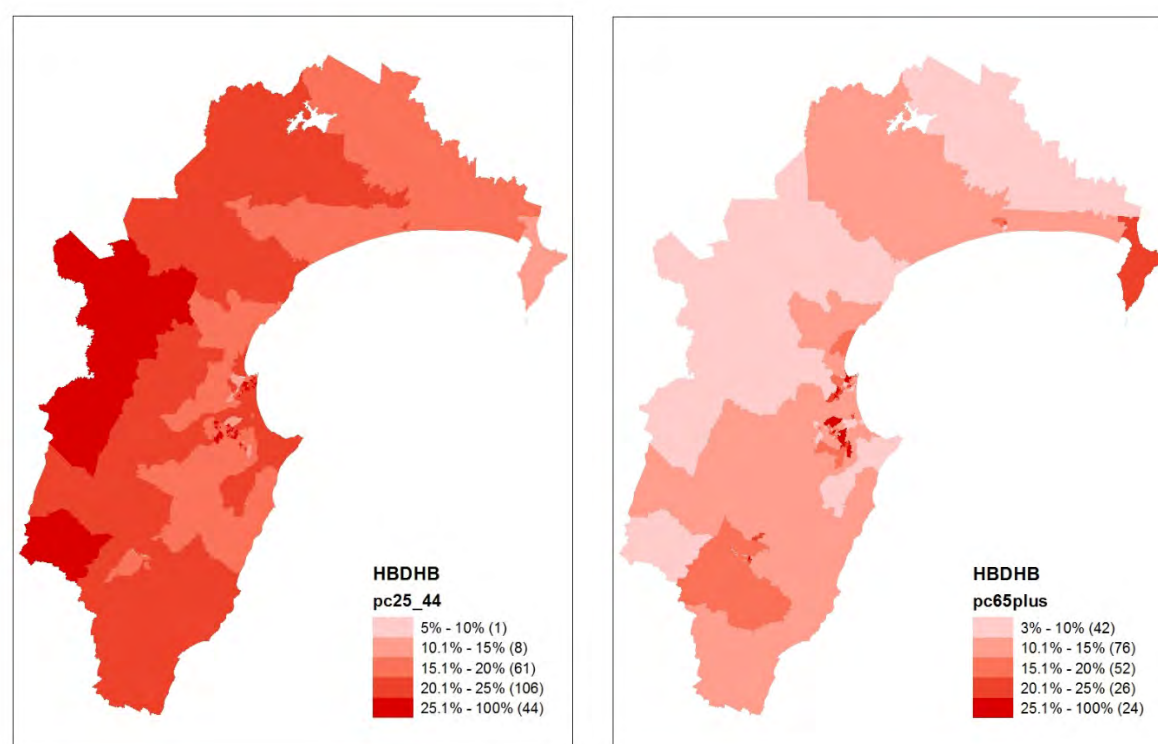


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the HBDHB

Ethnicity profile of the Hawke's Bay DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the HBDHB in 2013 ranged from 2.7% to 75%. The overall

¹² Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

proportion of Māori in the HBDHB was 24.3%, significantly greater than the national proportion of 14.9%. The proportion of Māori per data zone was greatest in northern rural parts of the HBDHB and in urban areas such as Flaxmere and Camberley. A data zone in Wairoa had the greatest proportion of Māori (75%).

The proportion of Pacific ethnicity living in data zones within the HBDHB in 2013 ranged from 0.0% to 37.3% for a data zone in Hastings. The overall proportion of Pacific ethnicity in the HBDHB was 4.3%, which was very low compared to the national proportion of 7.3%.

The proportion of New Zealand European and Other ethnicities (NZE) in HBDHB data zones ranged from 21.6% to 99.7%. The overall proportion of NZEO in the CMDHB was 82.8%, slightly lower than the national proportion of 87.5%. The lowest proportions of NZEO (<40%) lived in Hastings.

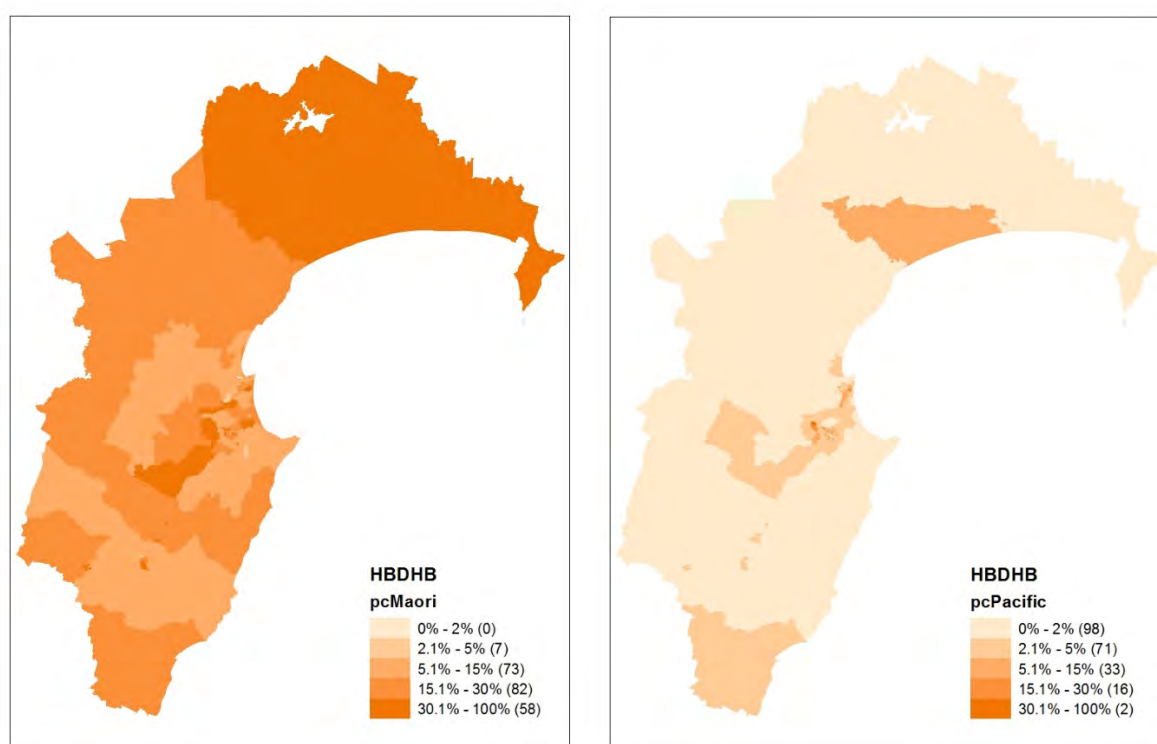
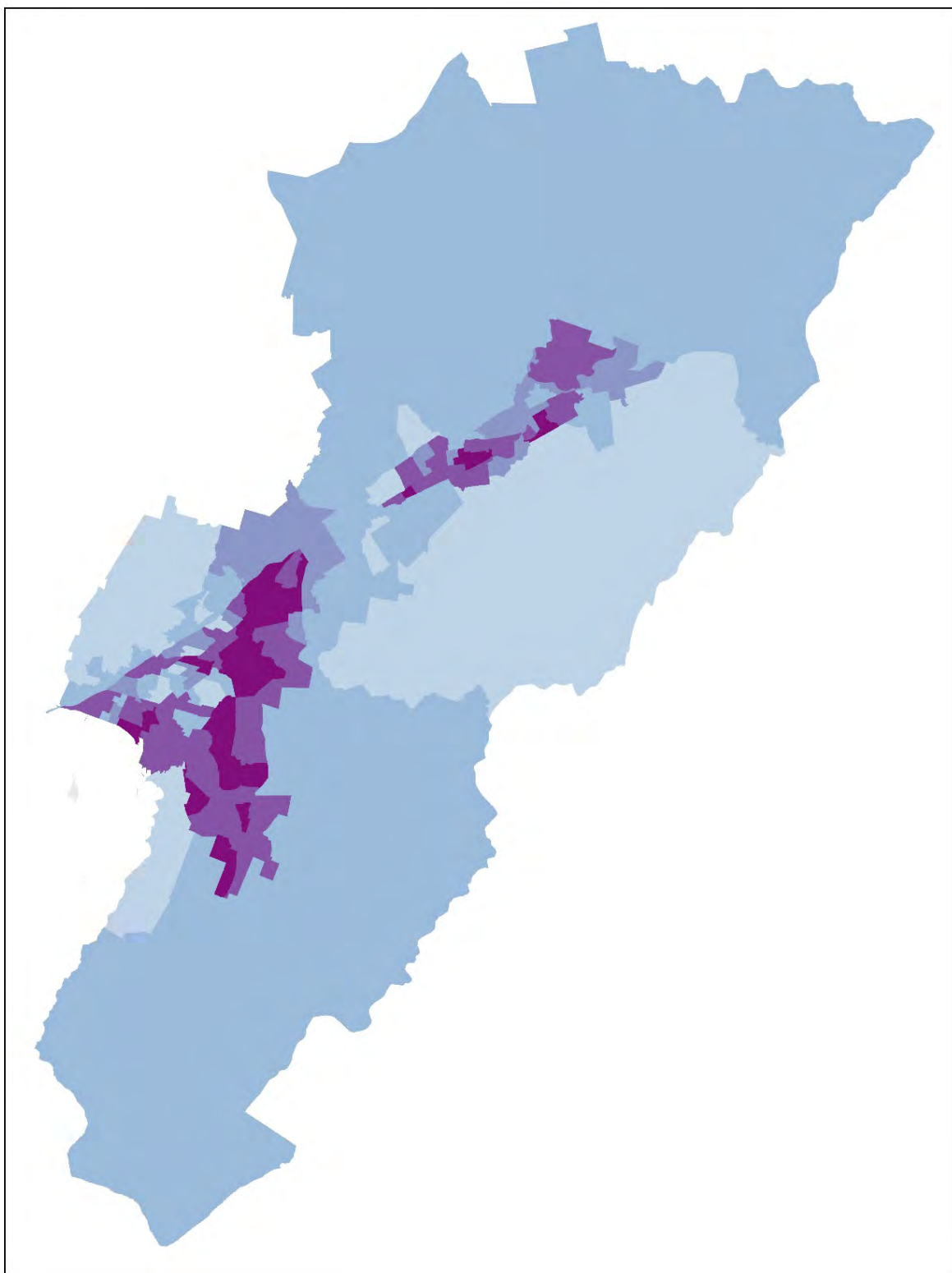


Figure 8. Distribution of Māori and Pacific people in the HBDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Hutt Valley DHB



Hutt Valley DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Hutt Valley DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level, using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

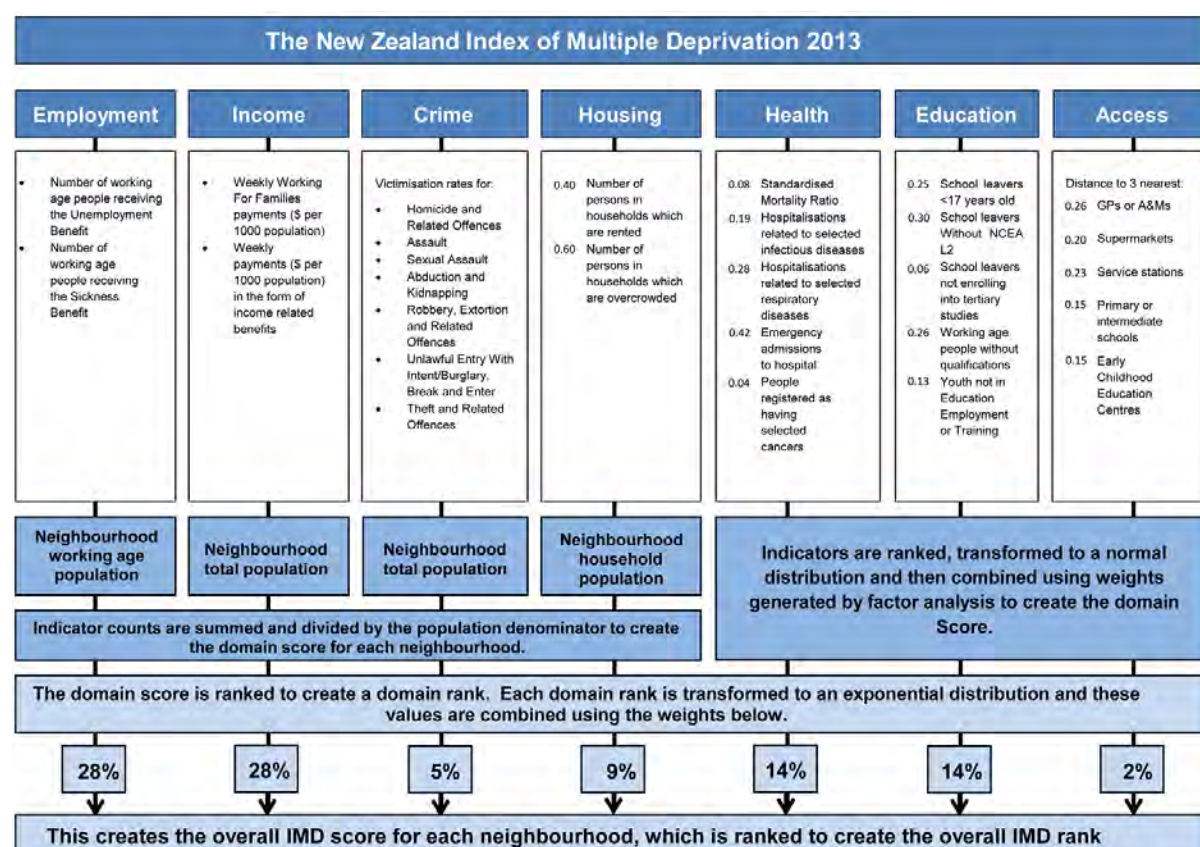


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Hutt Valley DHB (HVDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same as all of NZ, we would see 20% of the HVDHB's 197 data zones in each quintile. However, Figure 2 shows this was not the case. The proportion of data zones with Q5 deprivation was greater than 20% for overall (IMD) deprivation, employment, crime and health, and the proportion with Q4 deprivation was greater than 20% for all domains. The HVDHB has high levels of overall IMD deprivation, with 50.3% (99/197) of its data zones in Q4 or Q5.

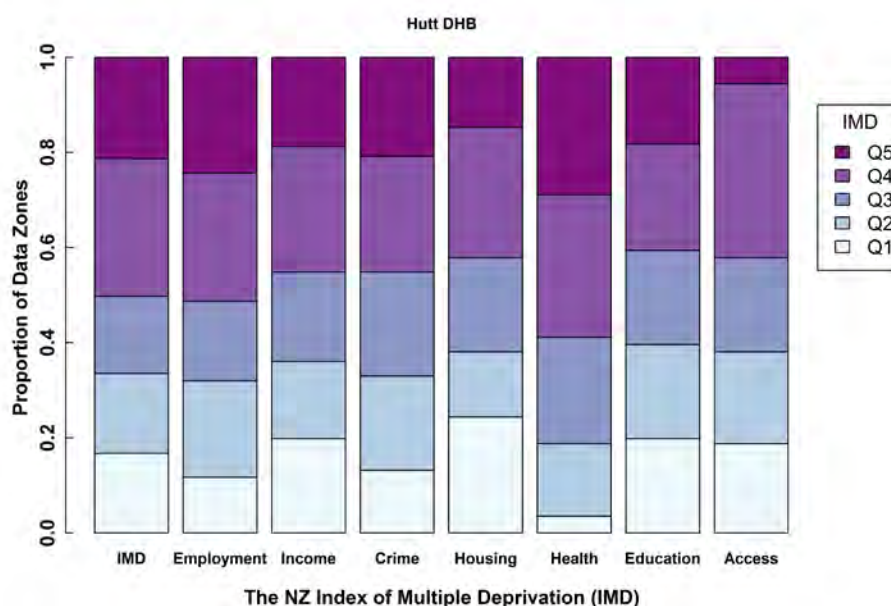


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the HVDHB

Table 1 shows summary statistics by domain for the 42 HVDHB data zones that were among NZ's 20% most deprived, and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Employment (5396), Health (5332), Income (5281), Education (5140) and Housing (5035) were contributing to high overall IMD deprivation in these 42 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ¹³ deprivation ranks by domain for 42 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4787 | 3700 | 4285 | 1611 | 3372 | 3974 | 2391 | 211 |
| Max | 5814 | 5840 | 5809 | 5933 | 5676 | 5887 | 5904 | 4589 |
| Median | 5350 | 5396 | 5281 | 4296 | 5035 | 5332 | 5140 | 2540 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 42 data zones in the HVDHB with Q5 IMD deprivation

¹³ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

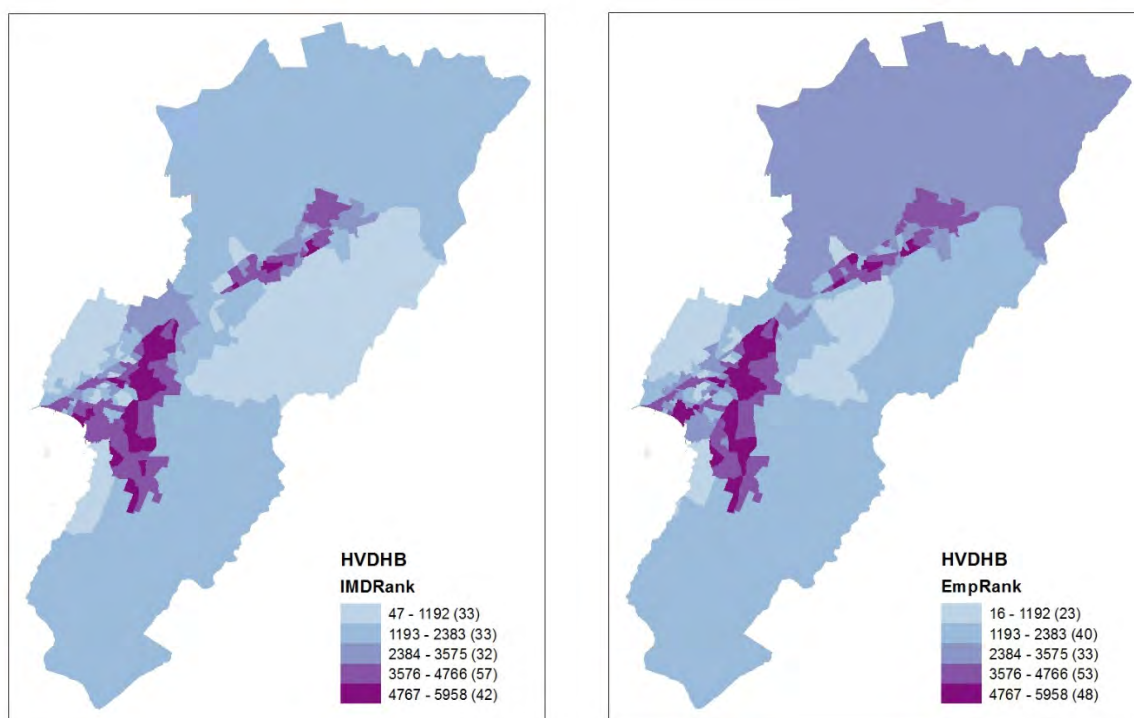


Figure 3. Distribution of overall IMD and employment deprivation in the HVDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows moderate levels of Q5 deprivation in the HVDHB. 21.3% (42/197) of its data zones were among the most deprived 20% in NZ, while 16.8% (33/197) were among the least deprived 20% (Q1). The median IMD rank in the HVDHB was 3599, 10.4% (620 ranks) worse than the NZ median of 2979. Most of the Q5 data zones were concentrated in Lower Hutt, and there were five Q5 data zones in Upper Hutt. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the HVDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the HVDHB, 24.4% (48/197) of data zones were among the 20% most deprived in NZ for the Employment Domain, while only 11.7% (23/197) of data zones were among the least deprived 20%. The median employment deprivation rank in the HVDHB was 3700, 12.1% (721 ranks) worse than the NZ median of 2979. These high levels of employment deprivation closely followed the pattern of overall IMD deprivation occurring throughout the central and south-western part of the DHB.

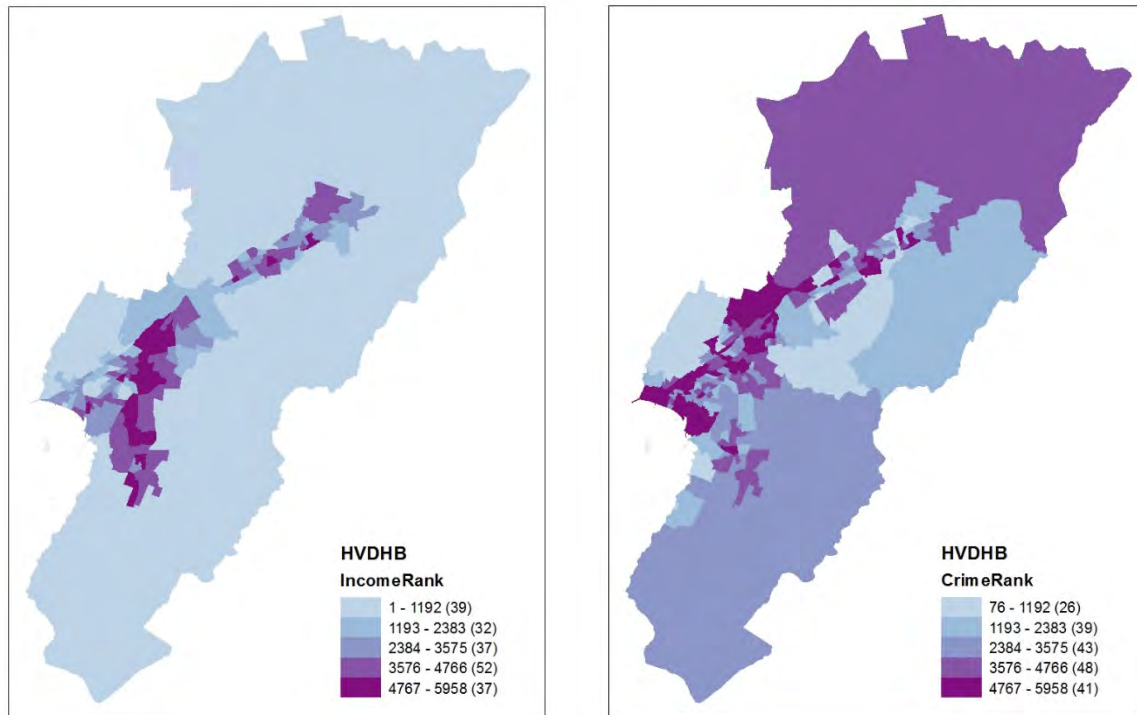


Figure 4. Distribution of income and crime deprivation in the HVDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the HVDHB, 18.8% (37/197) of data zones were among NZ's 20% most income deprived, and 19.8% (39/197) of data zones were among the 20% least income deprived. The median income deprivation rank in the HVDHB was 3251, 4.6% (272 ranks) worse than the NZ median. High (Q5) levels of income deprivation were concentrated in the urban areas of the DHB, mainly in Lower Hutt, but also in Upper Hutt.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the HVDHB, 20.8% (41/197) of data zones were among NZ's 20% most deprived for the Crime Domain, while only 13.2% (26/197) were among NZ's 20% least deprived. The median crime deprivation rank in the HVDHB was 3262, 4.7% (283 ranks) worse than the NZ median. High (Q5) rates of crime victimization mainly occurred in Lower Hutt, but there were nine Q5 data zones in Upper Hutt.

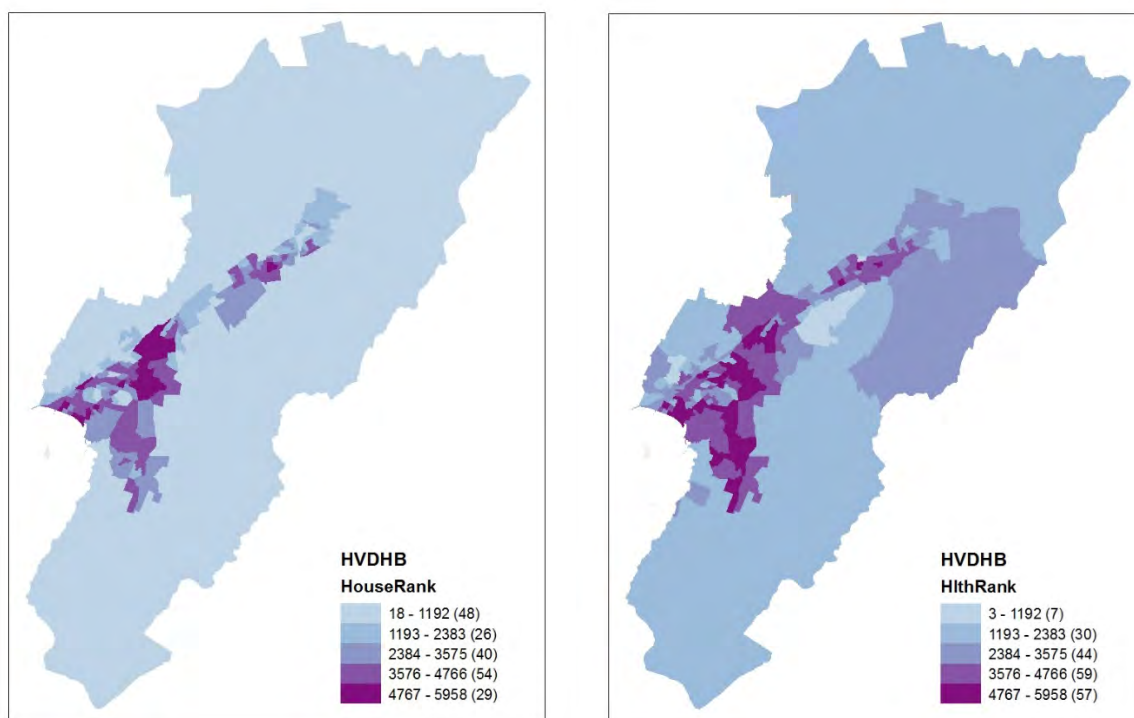


Figure 5. Distribution of housing and health deprivation in the HVDHB.

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the HVDHB, only 14.7% (29/197) of data zones were among the 20% most deprived in NZ, while 24.4% (48/197) of data zones were among the 20% least deprived. The median housing deprivation rank in the HVDHB was 3171, 3.2% (192 ranks) worse than the NZ median. High (Q5) levels of housing deprivation occurred in Lower Hutt in Taitā, Naenae and Petone.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the HVDHB, 28.9% (57/197) of data zones were among the 20% most health deprived in NZ, while only 3.6% (7/197) were among the least deprived 20%. The median health deprivation rank in the HVDHB was 3926, 15.9% (947 ranks) worse than the NZ median. Patterns for high (Q5) levels of health deprivation resembled the other domains, with a high concentration of Q5 data zones in Wainuiomata, Moera, Waiwhetū and Taitā.

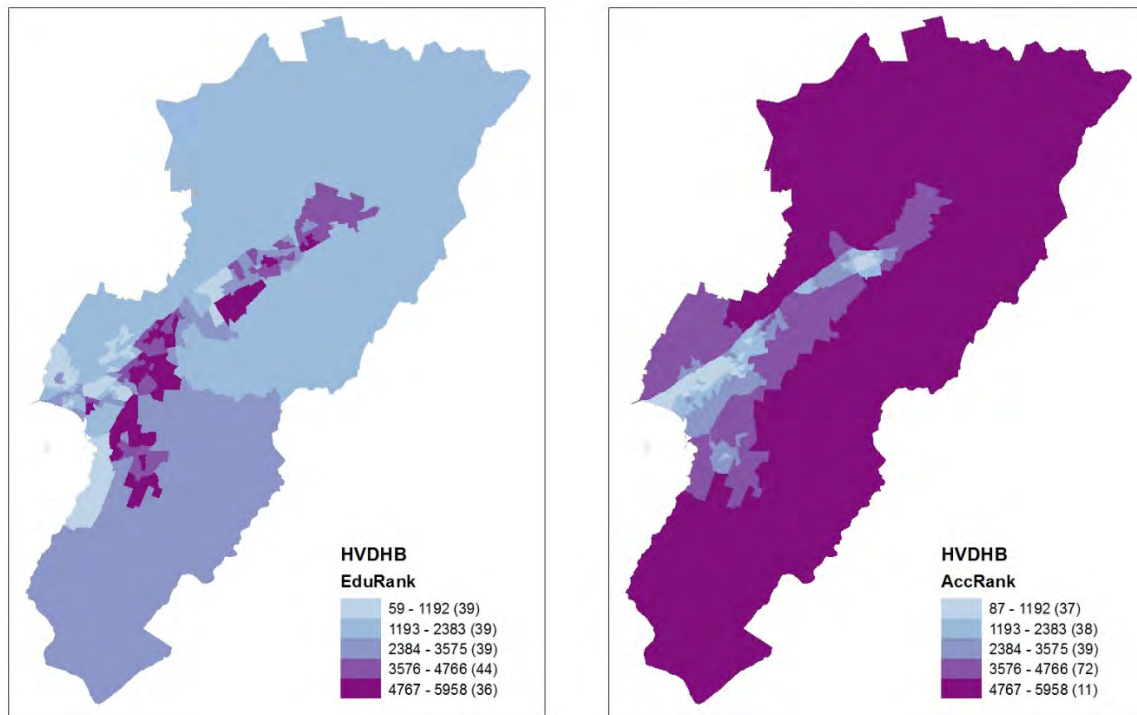


Figure 6. Distribution of education and access deprivation in the HVDHB.

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the HVDHB, 18.3% (36/197) of data zones were among NZ's 20% most education deprived, and 19.8% (39/197) were among the least deprived 20%. The median education deprivation rank in the HVDHB was 3158, 3.0% (179 ranks) worse than the NZ median. High (Q5) levels of education deprivation occurred throughout the south-western part of the DHB in Lower Hutt, and there were five data zones with Q5 education deprivation in Upper Hutt.

The Access Domain measures the distance from the population weighted centre of each data zone to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the HVDHB, only 5.6% (11/197) of data zones were among NZ's 20% most access deprived, while 18.8% (37/197) were among NZ's 20% least deprived. The median access deprivation rank in the HVDHB was 2972, 0.1% (seven ranks) better than the NZ median. There were only 11 data zones with Q5 access deprivation, and these were all located in rural parts of the DHB.

Age profile of the Hutt Valley DHB

In 2013 the HVDHB had a total population of 138,357 people living in 197 data zones, with a mean of 702 people each (range: 510 to 990).

| Mean data zone proportions for five age groups in the HVDHB | | | | | |
|---|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Hutt Valley DHB | 21.0% | 13.0% | 26.5% | 26.1% | 13.3% |
| New Zealand ¹⁴ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 0.6% | -0.8% | 0.9% | 0.3% | -1.0% |

Table 2. Mean data zone proportions for five age groups in the HVDHB

Table 2 shows that the age profile of the HVDHB differs most from the national age profile in that it has 0.9% more people aged 25-44 and 1.0% fewer people aged 65+. Figure 7 shows the distribution of people in these two age groups.

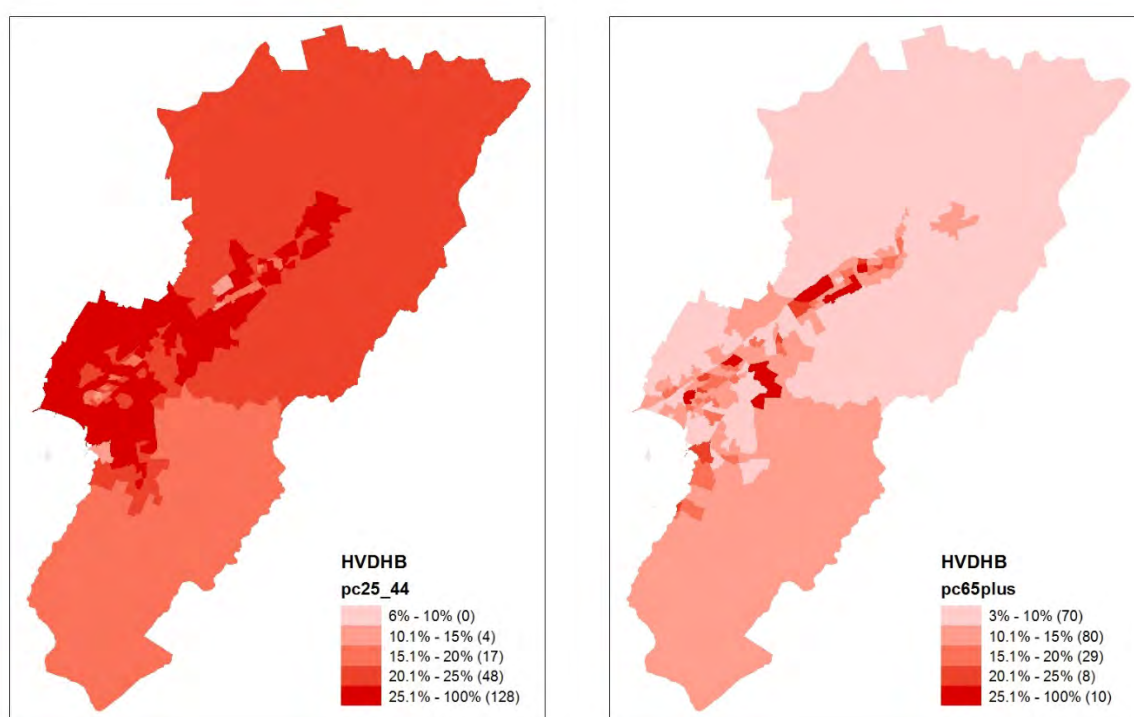


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the HVDHB.

Ethnicity profile of the Hutt Valley DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the HVDHB in 2013 ranged from 2.7% to 44.0%. The overall proportion of Māori was 16.1%, slightly greater than the national proportion of 14.9%. The proportion of Māori per data zone was greatest in the south-western

¹⁴ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

part of the DHB. A data zone in Upper Hutt had the greatest proportion of Māori (44.0%), followed by one in Lower Hutt (42.0%).

The proportion of Pacific ethnicity ranged from 0.0% to 44.1%. The overall proportion of Pacific ethnicity in the HVDHB was 9.2%, which is slightly higher than the national proportion of 7.3%. The proportion of Pacific per data zone was greatest in the south-western part of the DHB in the area between Upper Hutt and Lower Hutt.

The proportion of New Zealand European and Other ethnicities (NZE0) in the HVDHB ranged from 43.3% to 99.6%. The overall proportion of NZEO was 86.4%, slightly lower than the national proportion of 87.5%. The lowest proportions of NZEO (<60%) lived in data zones located in Lower Hutt.

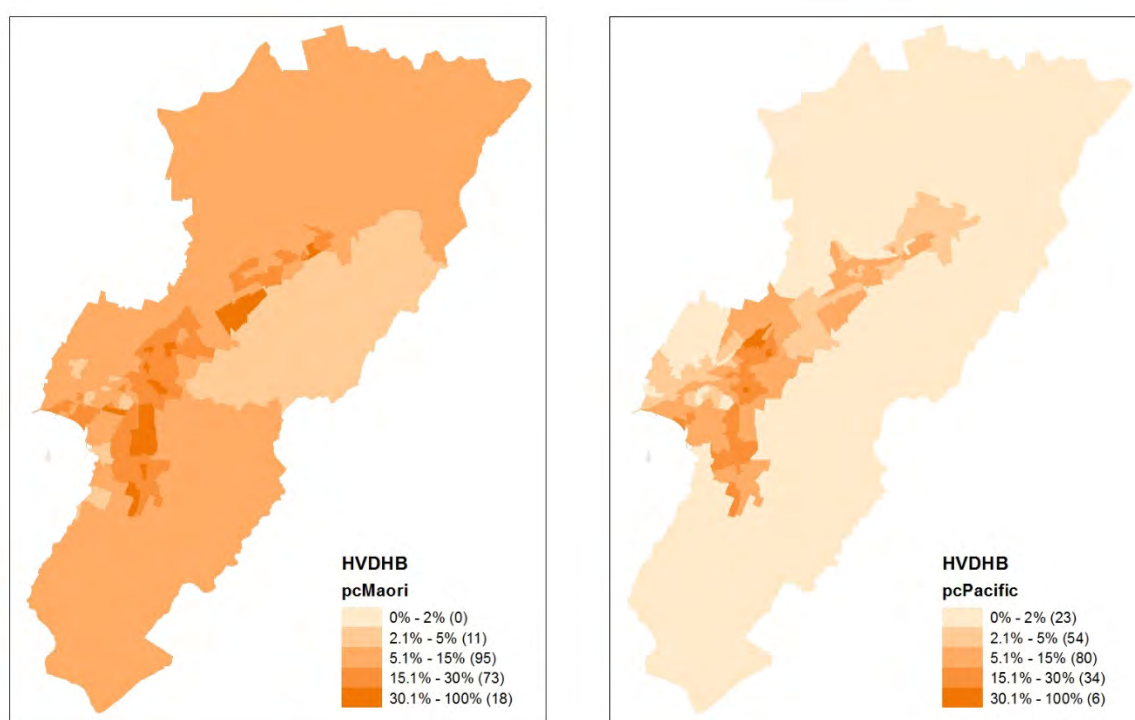
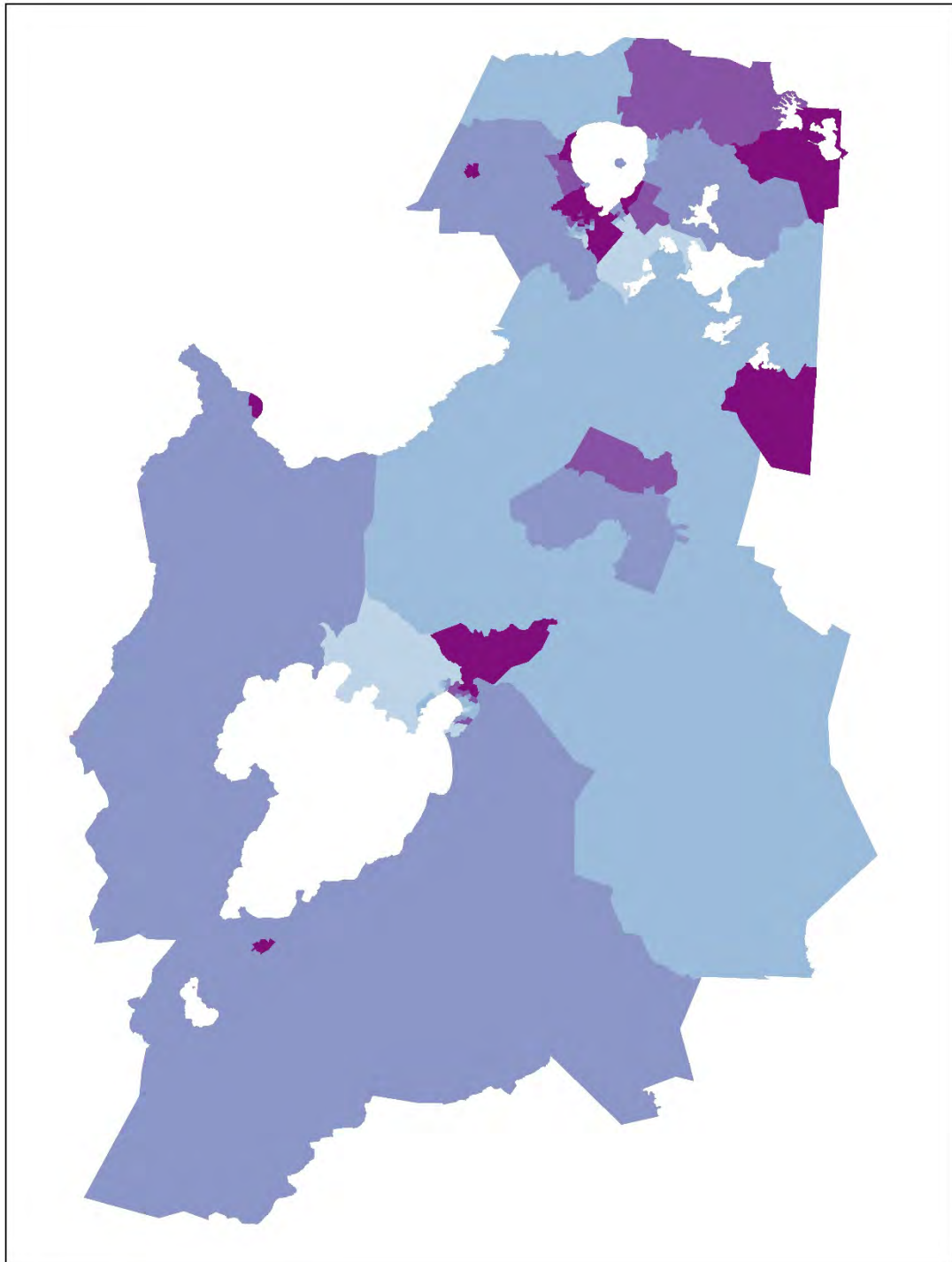


Figure 8. Distribution of Māori and Pacific people in the HVDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Lakes DHB



Lakes DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Lakes DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

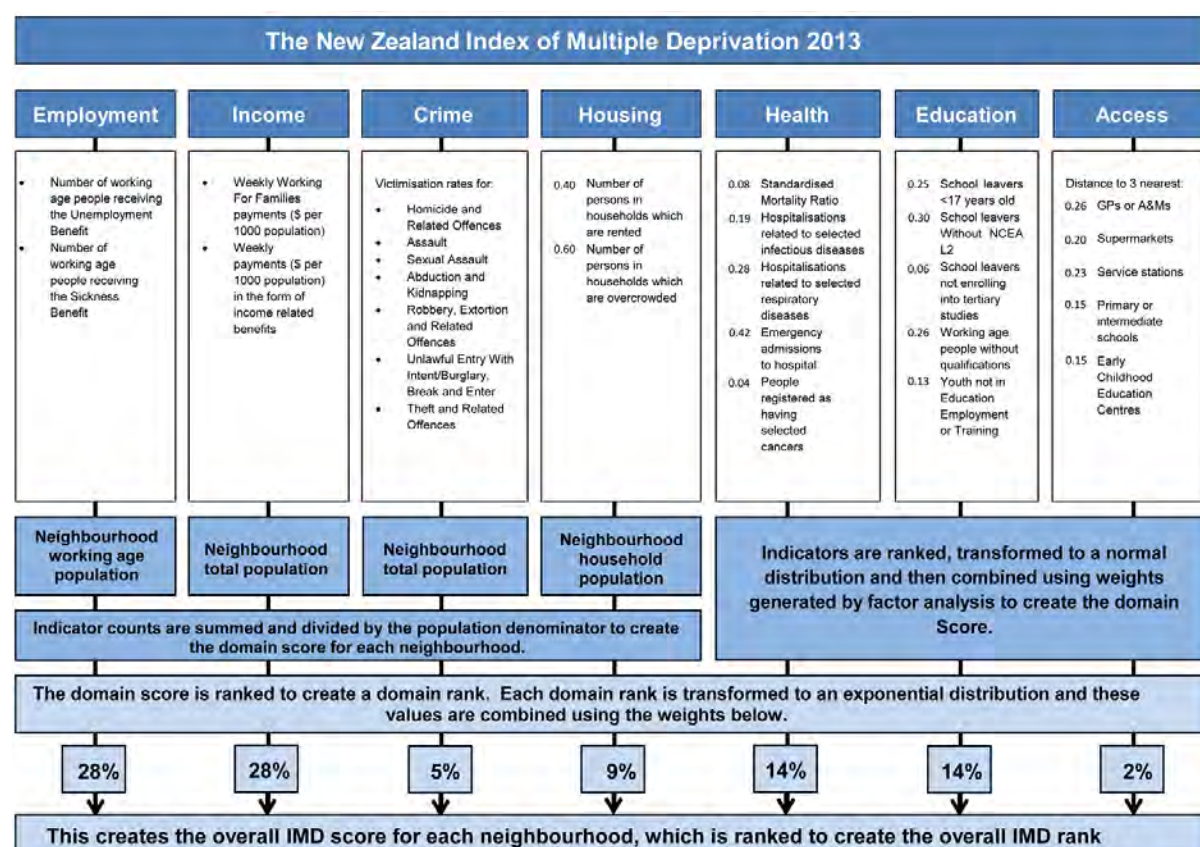


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Lakes DHB (LDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the LDHB were the same as for all of NZ, we would see 20% of the LDHB's 140 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was significantly greater than 20% for overall (IMD) deprivation and for all domains. The proportion of data zones with Q4 deprivation was also greater than 20%, except for employment and income. The LDHB has high levels of overall IMD deprivation, with 54.3% (76/140) of its data zones in Q4 or Q5.

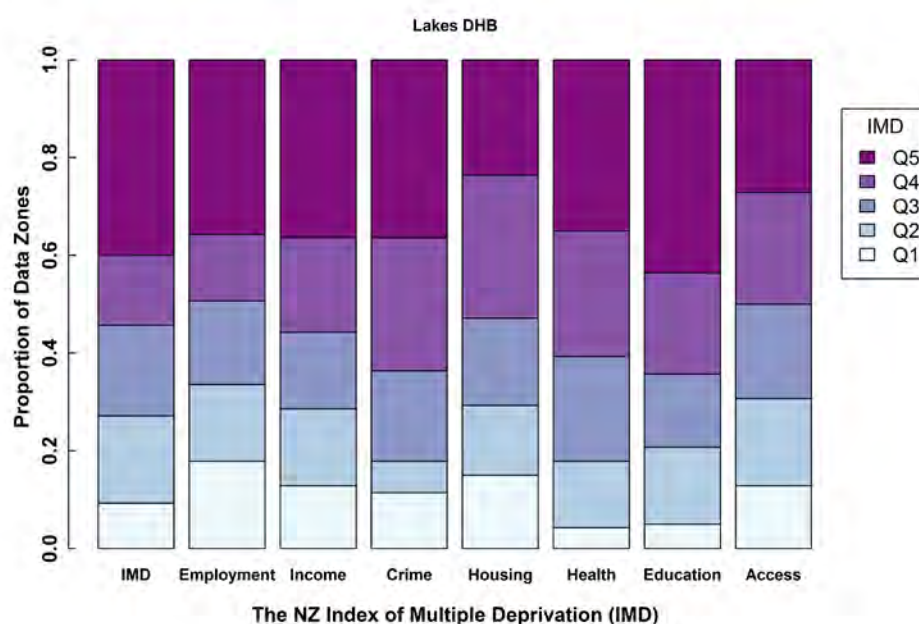


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the LDHB

Table 1 shows summary statistics by domain for the 56 LDHB data zones that were among NZ's 20% most deprived for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Education (5512), Health (5474), Income (5416), Employment (5382), Crime (5192) and Housing (4852) were contributing to high overall IMD deprivation in these 56 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ¹⁵ deprivation ranks by domain for 56 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4792 | 3954 | 3583 | 2990 | 2819 | 3603 | 3887 | 15 |
| Max | 5958 | 5949 | 5955 | 5939 | 5883 | 5941 | 5956 | 5835 |
| Median | 5399 | 5382 | 5416 | 5192 | 4852 | 5474 | 5512 | 2450 |

Table 1. Minimum, maximum, median and mean deprivation ranks by domain for 56 data zones in the LDHB with Q5 IMD deprivation

¹⁵ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

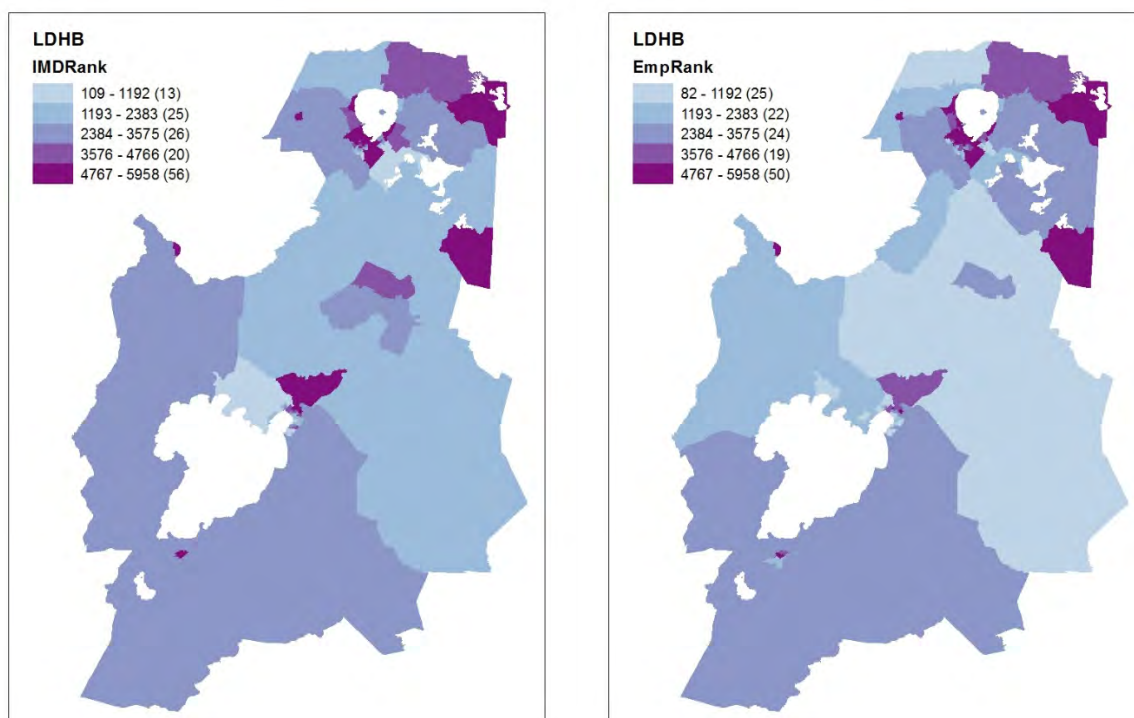


Figure 3. Distribution of overall IMD and employment deprivation in the LDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall (IMD) on the left of Figure 3 shows high levels of Q5 deprivation in the LDHB. 40% (56/140) of its data zones were among the most deprived 20% in NZ (Q5), while only 9.3% (13/140) were in the least deprived 20%. The median IMD rank in the LDHB was 4252, 21.4% (1273 ranks) worse than the NZ median of 2979. Most of the Q5 data zones were concentrated in the northern part of the DHB in the areas surrounding Lake Rotorua, but they also occurred in Tauhara, Turangi and Tarukenga. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at [IMD website](#) to explore the LDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the LDHB, 35.7% (50/140) of data zones were among the 20% most deprived in NZ for the Employment Domain, while 17.9% (25/140) of data zones were in the least deprived 20%. The median employment deprivation rank in the LDHB was 3555, 9.7% (576 ranks) worse than the NZ median. Q5 employment deprivation followed the general pattern of overall IMD deprivation, but with six additional Q5 data zones in Rotorua, Te Haehaenga and Mamaku.

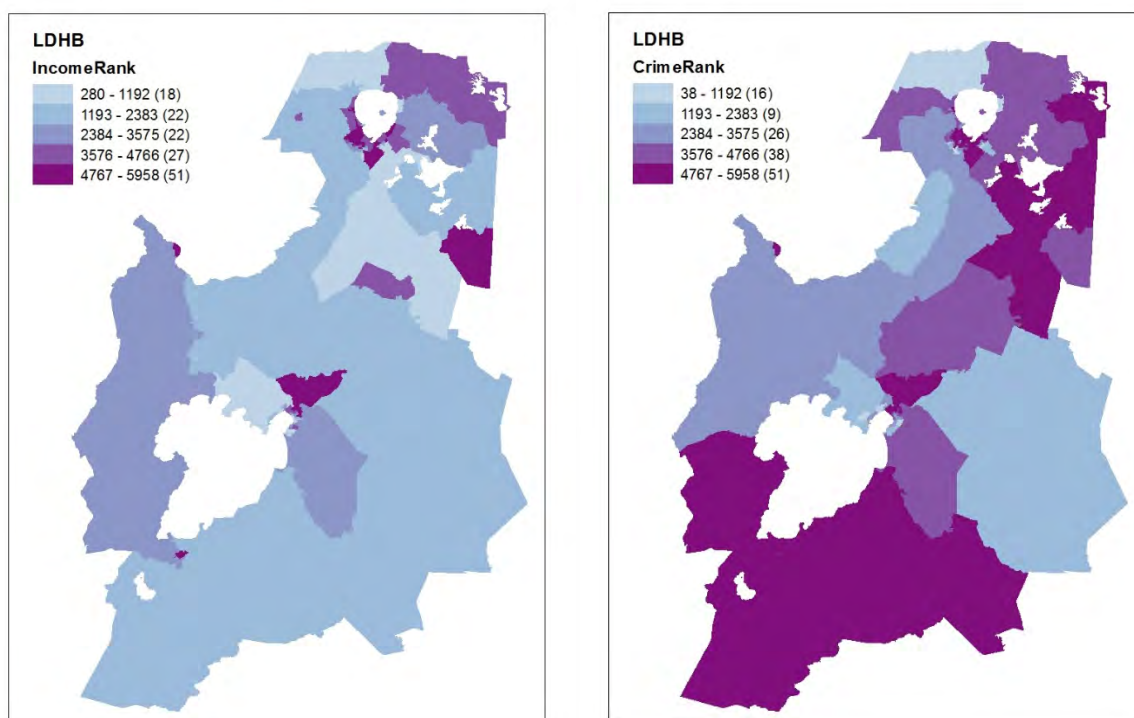


Figure 4. Distribution of income and crime deprivation in the LDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the LDHB, 36.4% (51/140) of data zones were among NZ's 20% most income deprived, while only 12.9% (18/140) of data zones were among the 20% least income deprived. The median income deprivation rank in the LDHB was 4095, 18.7% (1116 ranks) worse than the NZ median. High (Q5) levels of income deprivation closely followed the pattern of Q5 overall deprivation, but there were slightly fewer Q5 income deprived data zones in Awahou and Hannahs Bay.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the LDHB, 36.4% (51/140) of data zones were in the most deprived 20% for the Crime Domain, while only 11.4% (16/140) were in the least deprived 20%. The median crime deprivation rank in the LDHB was 4262, 21.5% (1283 ranks) worse than the NZ median. High (Q5) crime deprivation extends over a wider area than Q5 overall deprivation, even though it has a similar number of Q5 data zones (51 for Crime versus 56 for IMD). It extends to Te Haehaenga, Rotomahana, Waiotapu and in southern rural areas such as Te Raina, Rangipo, Motuoapa and Wharetoto.

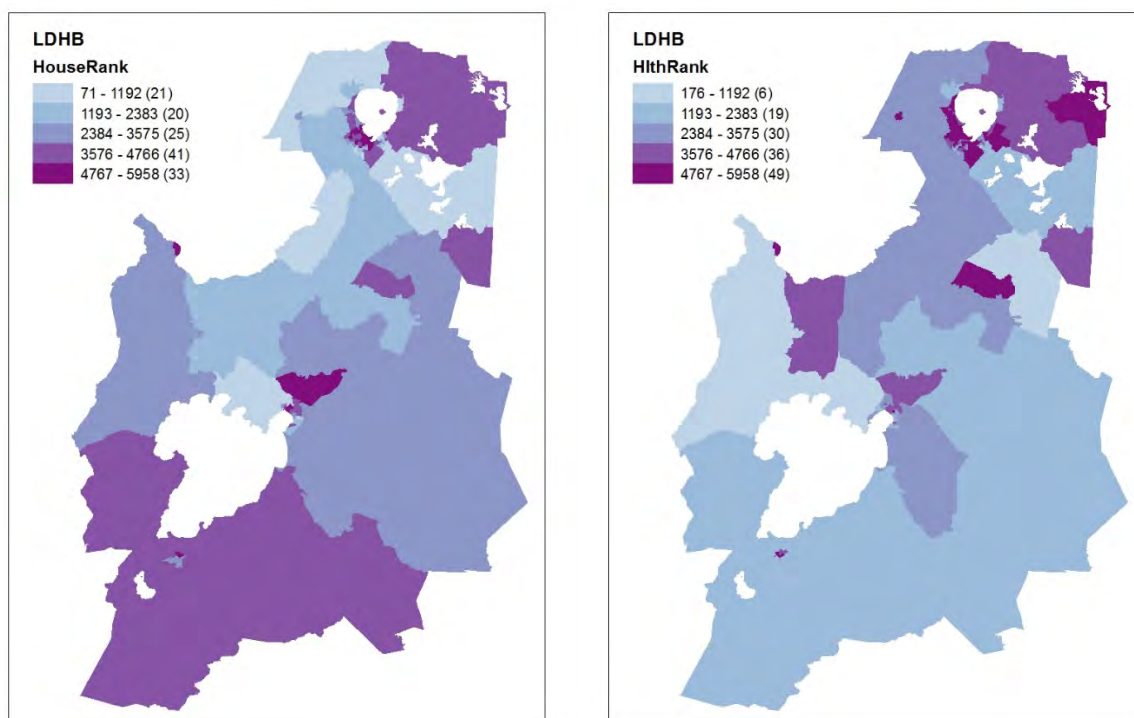


Figure 5. Distribution of housing and health deprivation in the LDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the LDHB, 23.6% (33/140) of data zones were among the 20% most deprived in NZ, while 15% (21/140) were among the least deprived 20%. The median housing deprivation rank in the LDHB was 3668, 11.6% (689 ranks) worse than the NZ median. High (Q5) levels of housing deprivation were concentrated in areas next to Lake Rotorua such as Koutu, Fairy Springs, Western Heights, Fordlands and Fenton Park. There were also Q5 data zones located in Turangi, Wairakei, Taupo and Mangakino.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the LDHB, 35% (49/140) of data zones were among the 20% most health deprived in NZ, while only 4.3% (6/140) were among the least deprived 20%. The median health deprivation rank in the LDHB was 4157, 19.8% (1178 ranks) worse than the NZ median. The number of data zone with Q5 health deprivation is close to the number with Q5 overall deprivation, but there are a few more in Ngongotaha and a few less in Tauhara.

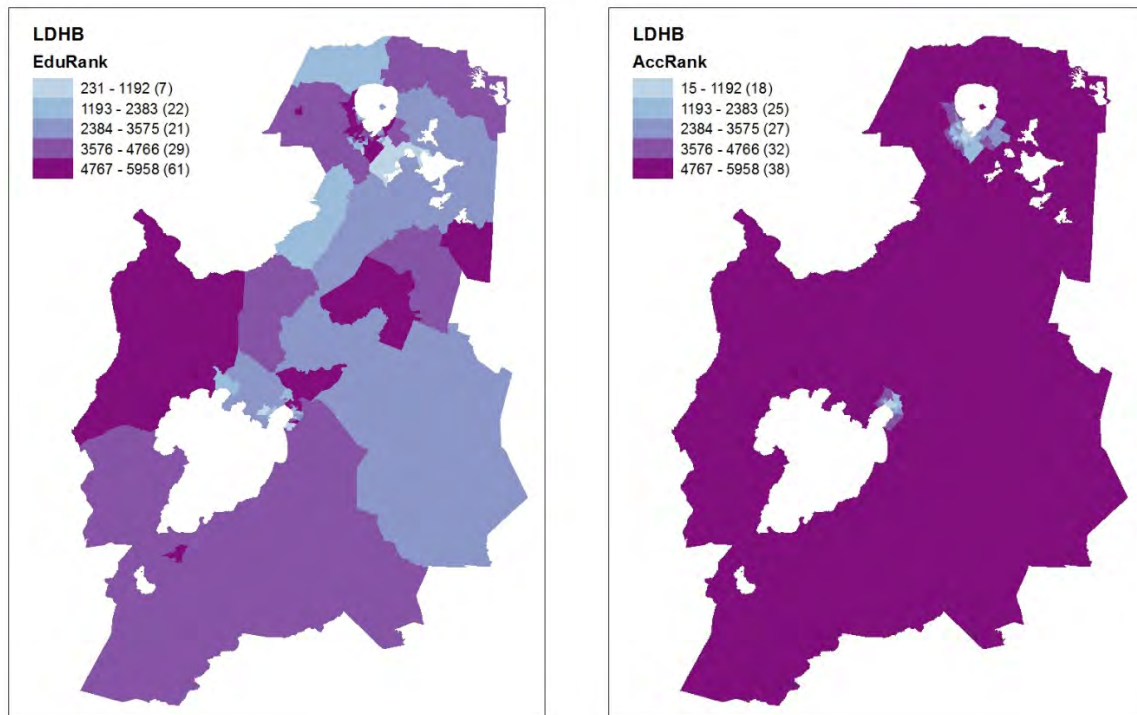


Figure 6. Distribution of education and access deprivation in the LDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the LDHB, 43.6% (61/140) of data zones were among NZ's 20% most education deprived, while only 5.0% (7/140) were in the least deprived 20%. The median education deprivation rank in the LDHB was 4431, 24.4% (1452 ranks) worse than the NZ median. Q5 levels of education deprivation followed a similar pattern to overall deprivation, but there were additional Q5 education deprived data zones located in rural areas in the west and centre of the DHB in Arataki, Tihoi, Waihaha, Mokai, Reporoa and Mihi.

The Access Domain measures the distance from the population weighted centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the LDHB, 27.1% (38/140) of data zones were among NZ's 20% most access deprived, while 12.9% (18/140) were in NZ's 20% least deprived. The median access deprivation rank in the LDHB was 3607, 10.5% (628 ranks) worse than the NZ median. High (Q5) levels of access deprivation occurred in rural parts of the LDHB.

Age profile of the Lakes DHB

According to the 2013 census, the LDHB had a total population of 98,199 people living in 140 data zones, with a mean of 701 people each (range: 495 to 999).

| Mean data zone proportions for five age groups in the LDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Lakes DHB | 22.6% | 12.4% | 24.0% | 26.2% | 14.8% |
| New Zealand ¹⁶ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 2.2% | -1.4% | -1.6% | 0.4% | 0.5% |

Table 2. Mean data zone proportions for five age groups in the LDHB

Table 2 shows that the age profile of the LDHB differs most from the national age profile in that it has 2.2% more children aged 0-14 and 1.6% fewer people aged 25-44. Figure 7 shows the distribution of people in these two age groups.

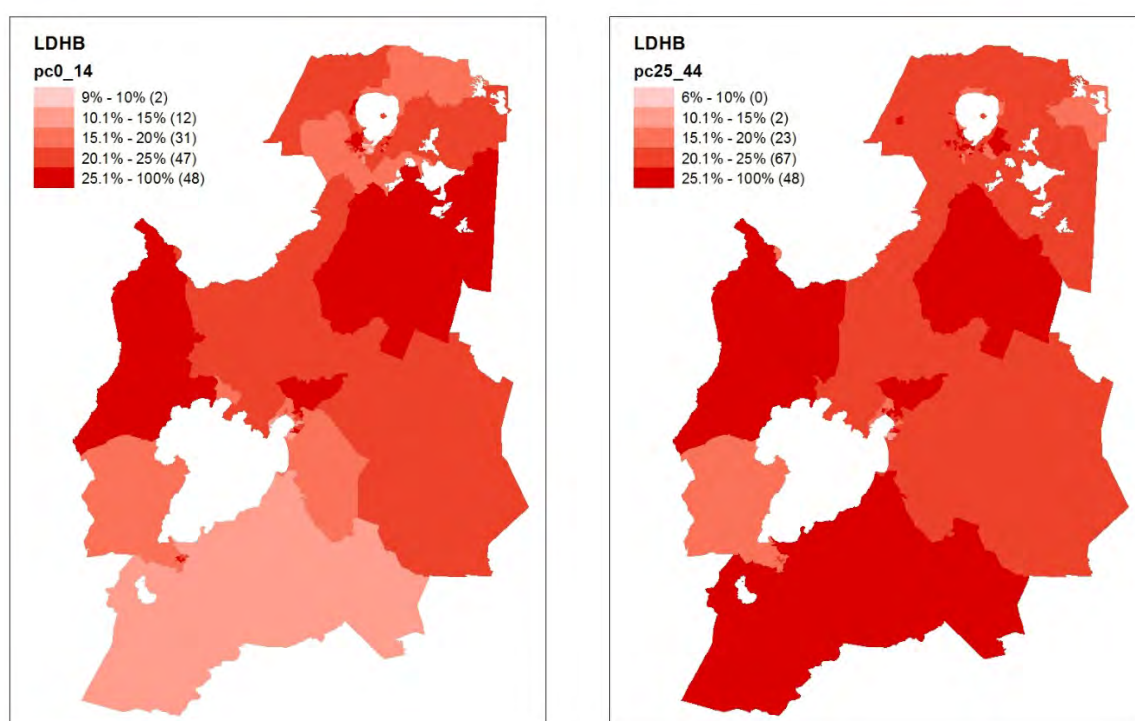


Figure 7. Distribution of children aged 0-14 and people aged 25-44 in the LDHB

Ethnicity profile of the Lakes DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the LDHB in 2013 ranged from 4.9% to 76.7%. The overall proportion of Māori was 35.4%, which was significantly greater than the national

¹⁶ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

proportion of 14.9%. The proportion of Māori per data zone was greatest in a data zone located in Fordlands (76.7%), followed by Koutu (74.4%) and Turangi (73.1%).

The proportion of Pacific ethnicity living in data zones within the LDHB ranged from 0.0% to 27.4%. The overall proportion of Pacific ethnicity was 4.3%, much lower than the national proportion of 7.3%. The data zones with the highest proportions of Pacific people were located in Rotorua (27.4%, 16.0% and 15.6%).

The proportion of New Zealand European and Other ethnicities (NZEO) in the LDHB ranged from 19.1% to 98.1%. The overall proportion was 76.5%, which was significantly lower than the national proportion of 87.5%. The lowest proportions of NZEO (<40%) lived in Rotorua and Turangi.

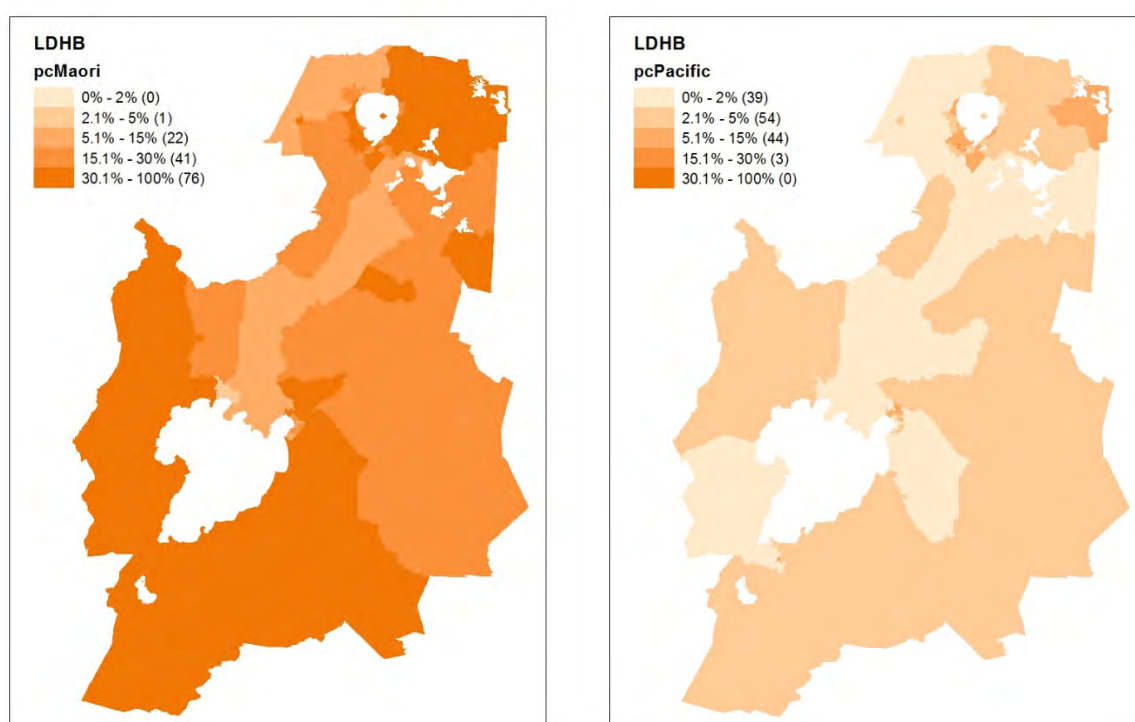
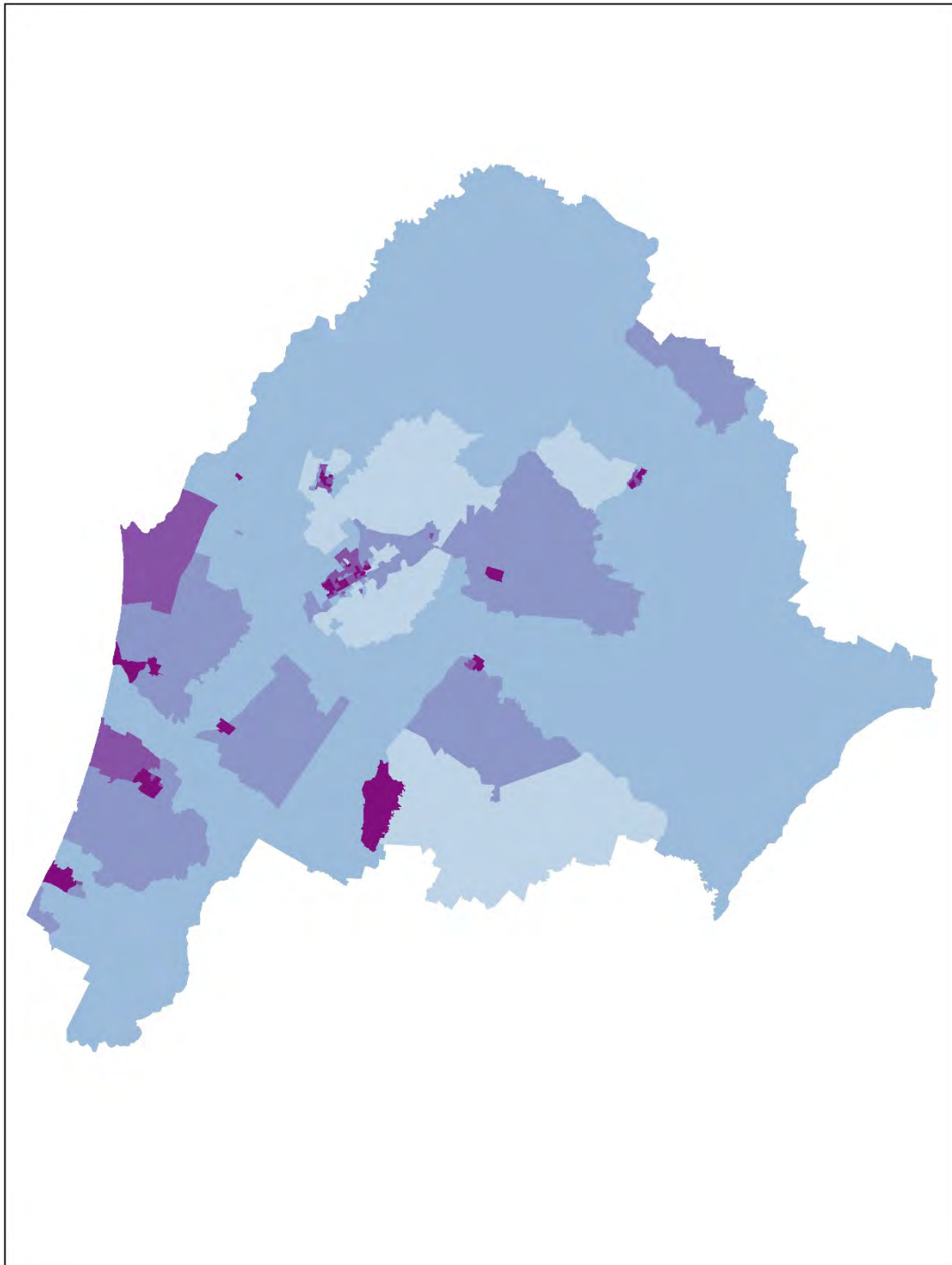


Figure 8. Distribution of Māori and Pacific people in the LDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

MidCentral DHB



MidCentral DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the MidCentral DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, data zones can be just a few streets long and wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

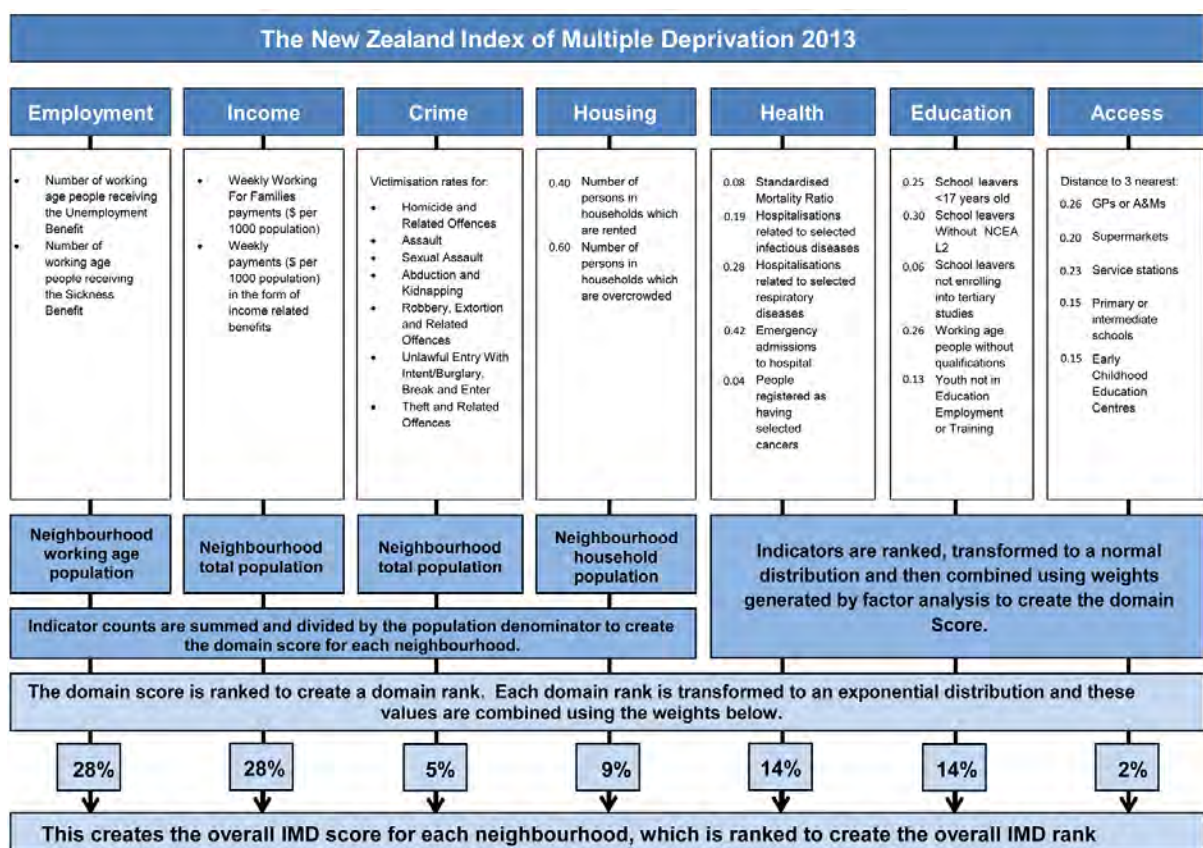


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the MidCentral DHB (MCDHB) that belong to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the MCDHB were the same as all of NZ, we would see 20% of the MCDHB's 236 data zones in each quintile. However, Figure 2 shows this was not the case. The proportion of data zones with Q5 deprivation was greater than 20% for overall (IMD) deprivation and for all domains except Housing and Health. The proportion of data zones with Q4 deprivation was also greater than 20% for all domains except Crime and Access. The MCDHB had high levels of overall IMD deprivation, with 50.8% (120/236) of its data zones either in Q4 or Q5.

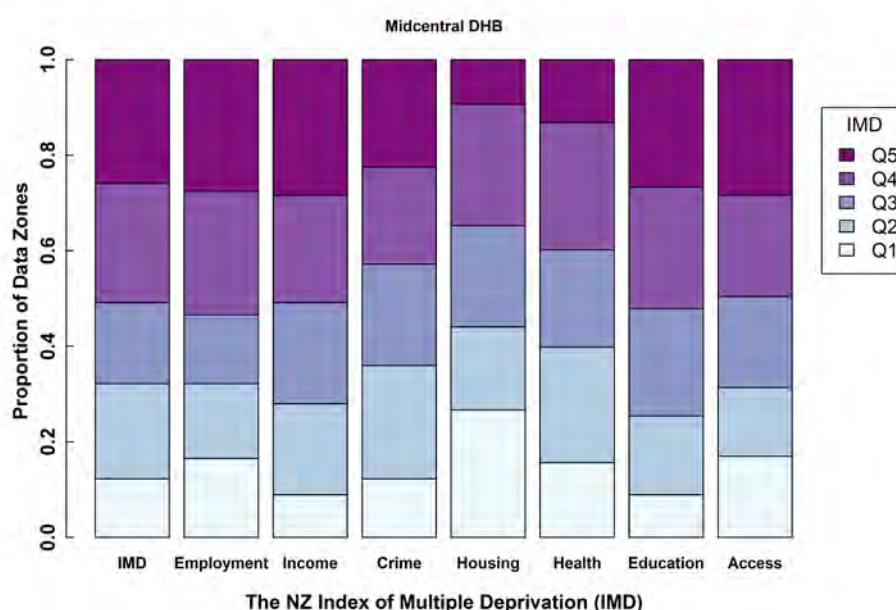


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the MCDHB

Table 1 shows summary statistics by domain for the 61 MCDHB data zones that were among NZ's 20% most deprived, and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Employment (5394), Education (5295), Income (5293) were contributing to high overall IMD deprivation in these data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ¹⁷ deprivation ranks by domain for 61 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4773 | 3478 | 4228 | 1939 | 1867 | 1400 | 2937 | 164 |
| Max | 5918 | 5944 | 5937 | 5947 | 5705 | 5957 | 5954 | 5809 |
| Median | 5171 | 5394 | 5293 | 4504 | 4160 | 4691 | 5295 | 2799 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 61 data zones in the MCDHB with Q5 IMD deprivation

¹⁷ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

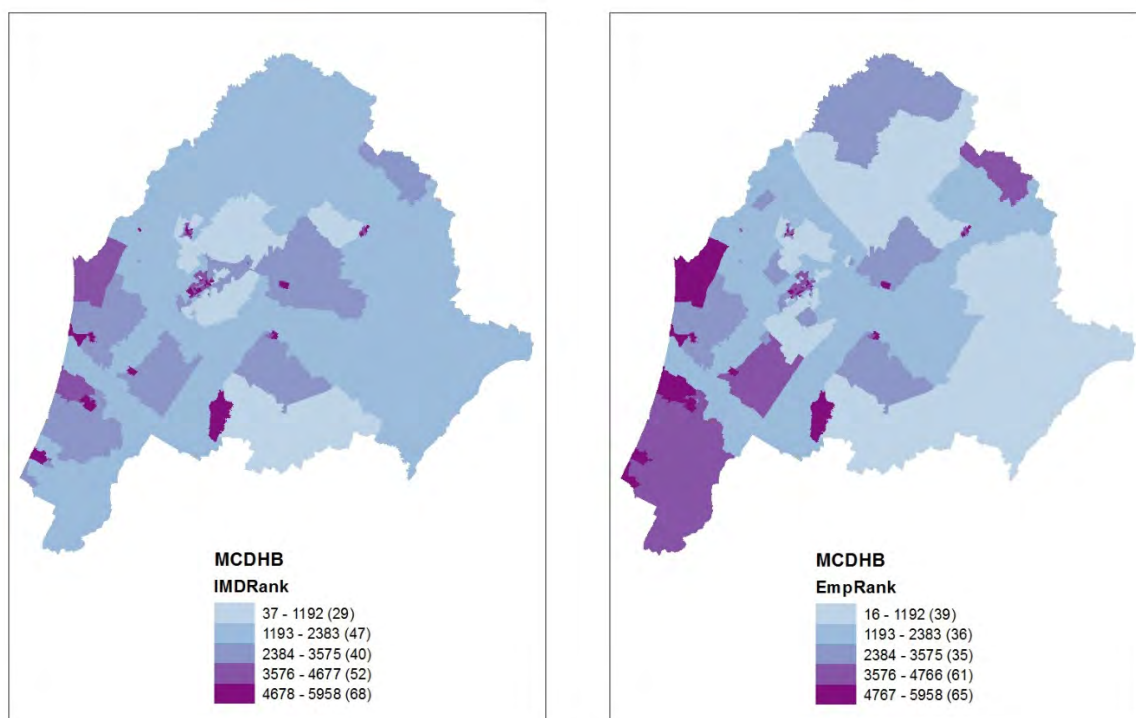


Figure 3. Distribution of overall IMD and employment deprivation in the MCDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall (IMD) deprivation on the left of Figure 3 shows high levels of Q5 deprivation in the MCDHB. 25.8% (61/236) of its data zones were among the most deprived 20% in NZ (Q5), while only 12.3% (29/236) were in the least deprived 20%. The median IMD rank in the MCDHB was 3621, 10.8% (624 ranks) worse than the NZ median of 2979. Most of the Q5 data zones were concentrated in central Palmerston North, but many occurred in small towns such as Otaki, Levin, Foxton, Feilding, Dannevirke, Pahiatua and Eketahuna. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at [IMD website](#) to explore the MCDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the MCDHB, 27.5% (65/236) of data zones were among the 20% most deprived in NZ for the Employment Domain, while only 16.5% (39/236) were in the least deprived 20%. The median employment deprivation rank in the MCDHB was 3745, 12.9% (766 ranks) worse than the NZ median. Q5 employment deprivation followed the general pattern of overall IMD deprivation, but with five more Q5 data zones in places like Himatangi Beach, Foxton Beach, Hokio Beach and Te Horo Beach.

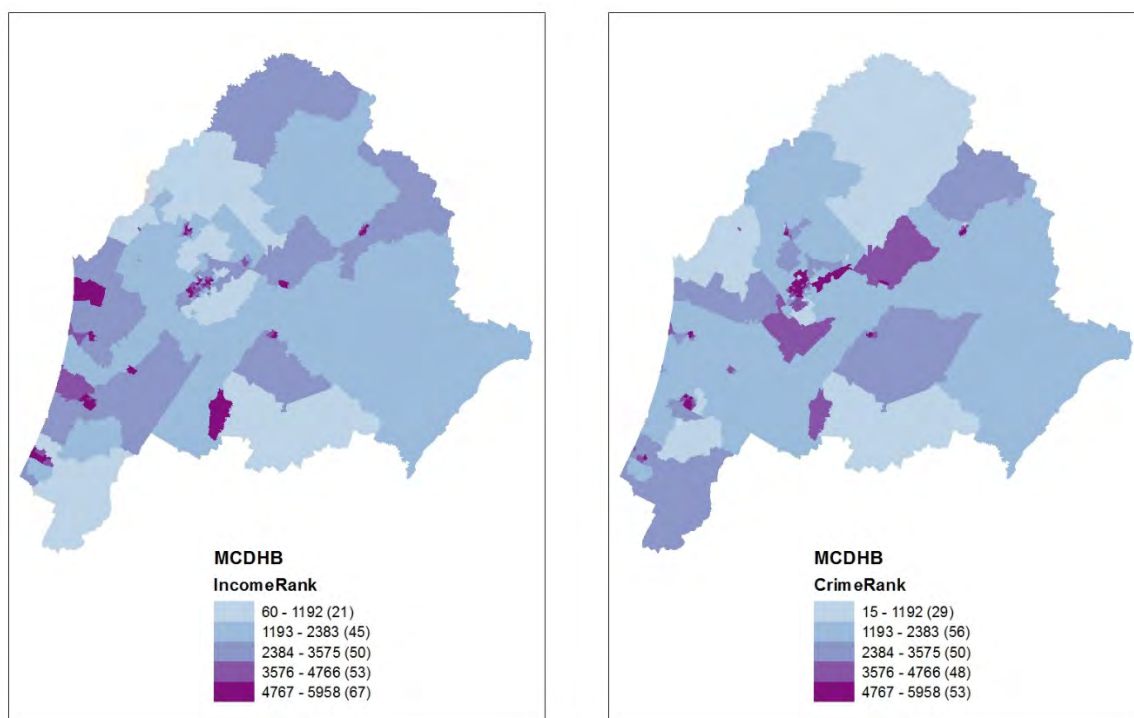


Figure 4. Distribution of income and crime deprivation in the MCDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the MCDHB, 28.4% (67/236) of data zones were among NZ's 20% most income deprived, while only 8.9% (21/236) were among the 20% least income deprived. The median income deprivation rank in the MCDHB was 3674, 11.7% (695 ranks) worse than the NZ median. High (Q5) levels of income deprivation closely followed the pattern of Q5 overall deprivation, but there were additional Q5 income deprived data zones in Dannevirke and Himatangi Beach.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the MCDHB, 22.5% (53/236) of data zones were in the most deprived 20% for the Crime Domain, while only 12.3% (29/236) were in the Least Deprived 20%. The median crime deprivation rank in the MCDHB was 3203, 3.8% (224 ranks) worse than the NZ median. On the map, high (Q5) crime deprivation extends over a smaller area than Q5 overall deprivation, and it has eight fewer Q5 data zones. There is a concentration of Q5 crime deprivation in Palmerston North.

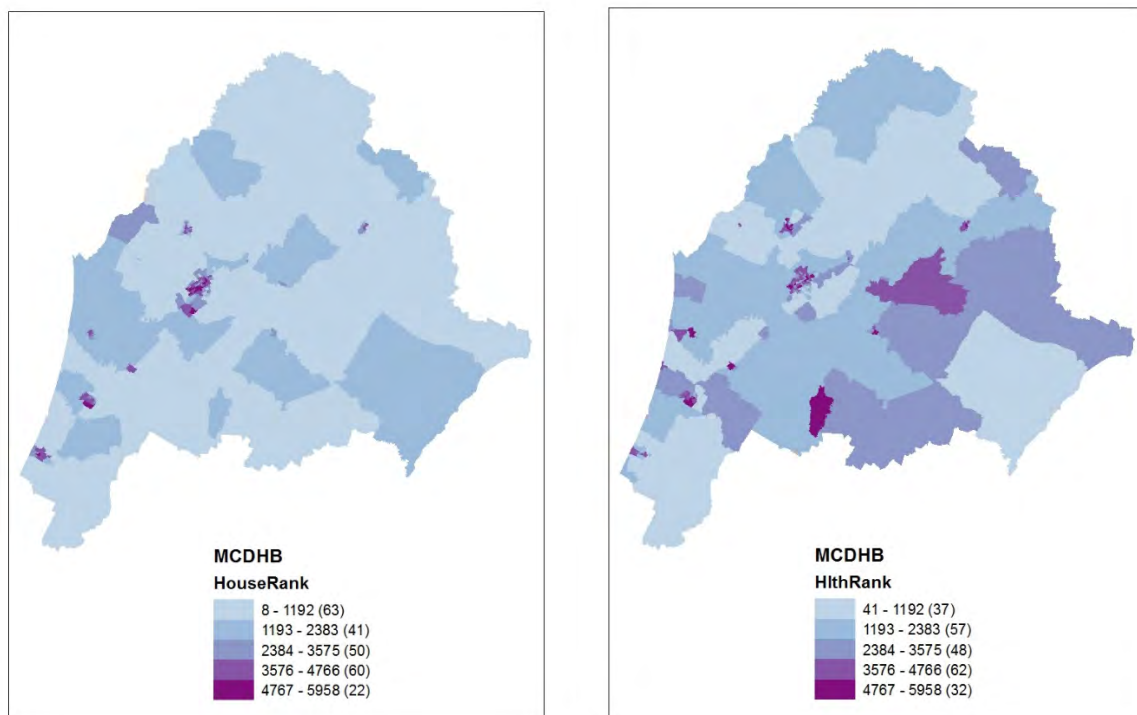


Figure 5. Distribution of housing and health deprivation in the MCDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the MCDHB, only 9.3% (22/236) of data zones were among the 20% most housing deprived in NZ, while 26.7% (63/236) were among the least deprived 20%. The median housing deprivation rank in the MCDHB was 2783, 3.3% (196 ranks) better than the NZ median. High (Q5) levels of housing deprivation are concentrated in Palmerston North, with some in Levin and Otaki.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the MCDHB, 13.1% (31/236) of data zones were among the 20% most health deprived in NZ, and 15.7% (37/236) were among the least deprived 20%. The median health deprivation rank in the MCDHB was 3203, only 3.8% (224 ranks) worse than the NZ median. There are significantly fewer Q5 health deprived data zones in Palmerston North than for overall deprivation.

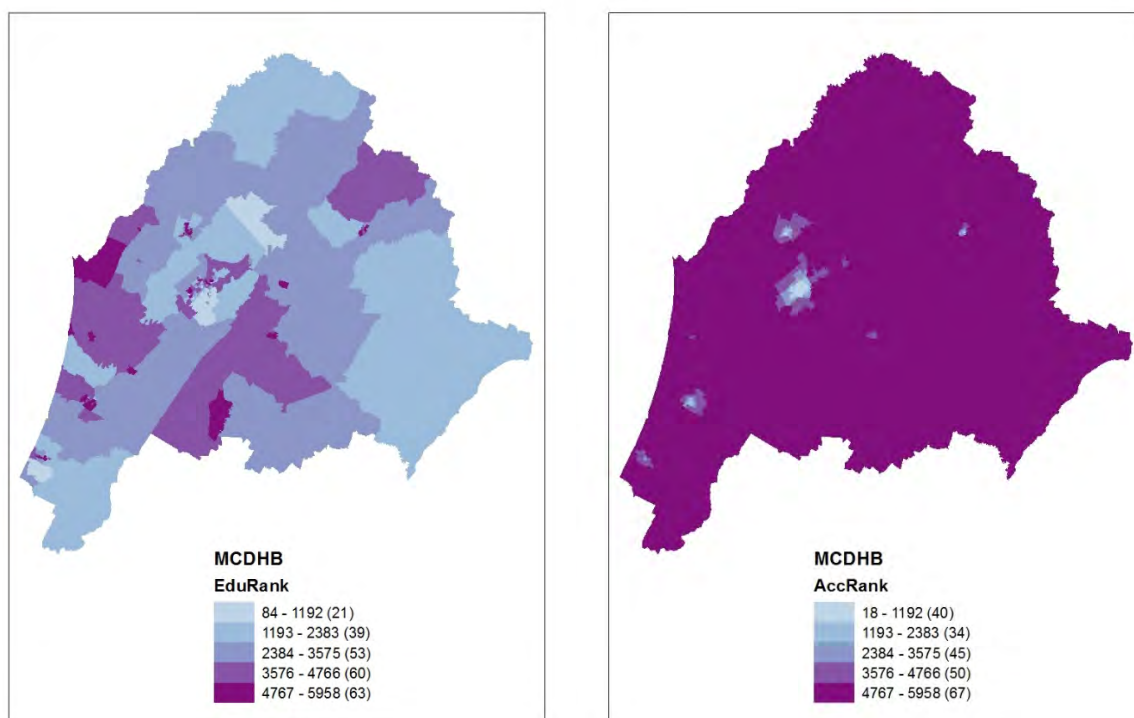


Figure 6. Distribution of education and access deprivation in the MCDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the MCDHB, 26.7% (63/236) of data zones were among NZ's 20% most education deprived, while only 8.9% (21/236) were in the least deprived 20%. The median education deprivation rank in the MCDHB was 3722, 12.5% (743 ranks) worse than the NZ median. Patterns of Q5 levels of education deprivation were very similar to the overall IMD, with Q5 data zones concentrated in Palmerston North and smaller towns across the DHB.

The Access Domain measures the distance from the population weighted centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the MCDHB, 28.4% (67/236) of data zones were among NZ's 20% most access deprived, while 16.9% (40/236) were in NZ's 20% least deprived. The median access deprivation rank in the MCDHB was 3548, 9.6% (569 ranks) worse than the NZ median. High (Q5) levels of access deprivation occurred in rural parts of the MCDHB outside the main urban areas of Palmerston North and the towns of Dannevirke, Feilding and Levin.

Age profile of the MidCentral DHB

In 2013 the MCDHB had a total population of 162,528 people living in 236 data zones, with a mean of 689 people each (range: 501 to 996).

| Mean data zone proportions for five age groups in the MCDHB | | | | | |
|---|-------|-------|-------|--------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| MidCentral DHB | 20.2% | 14.6% | 23.1% | 25.6 % | 16.6% |
| New Zealand ¹⁸ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -0.2 | 0.8 | -2.5 | -0.2 | 2.3 |

Table 2. Mean data zone proportions for five age groups in the MCDHB

Table 2 shows that the age profile of the MCDHB differs most from the national age profile in that it has 2.5% fewer people aged 25-44 and 2.3% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

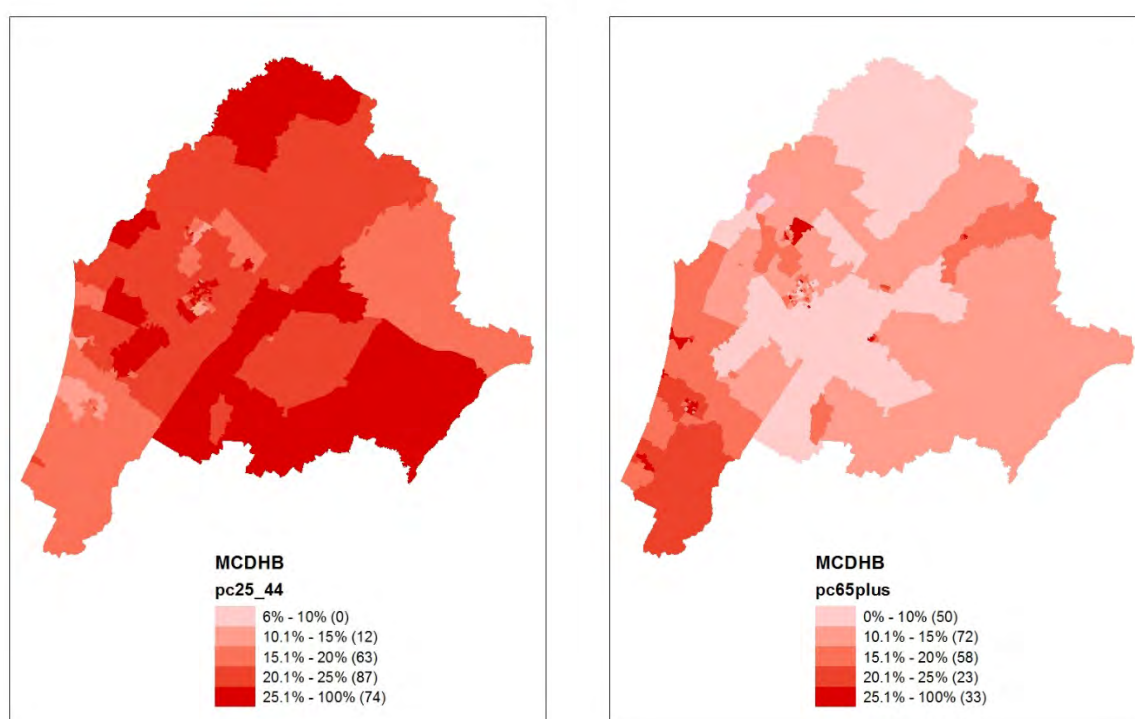


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the MCDHB

Ethnicity profile of the MidCentral DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the MCDHB in 2013 ranged from 3.7% to 53.1%. The overall proportion of Māori was 18.3%, which was higher than the national proportion of

¹⁸ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

14.9%. The proportion of Māori per data zone was greatest in a data zone located in Linton Camp (53.1%), followed by one in Westbrook (50.0%).

The proportion of Pacific ethnicity living in data zones within the MCDHB ranged from 0.0% to 20.5%. The overall proportion was 3.7% which was much lower than the national proportion of 7.3%. The greatest proportions of Pacific ethnicity are located in Westbrook (20.5%), Highbury and West End.

The proportion of New Zealand European and Other ethnicities (NZE0) in the MCDHB ranged from 53.6% to 99.5%. The overall proportion of NZEO was 89.8%, slightly higher than the national proportion of 87.5%. The lowest proportions of NZEO (<60%) lived in Westbrook.

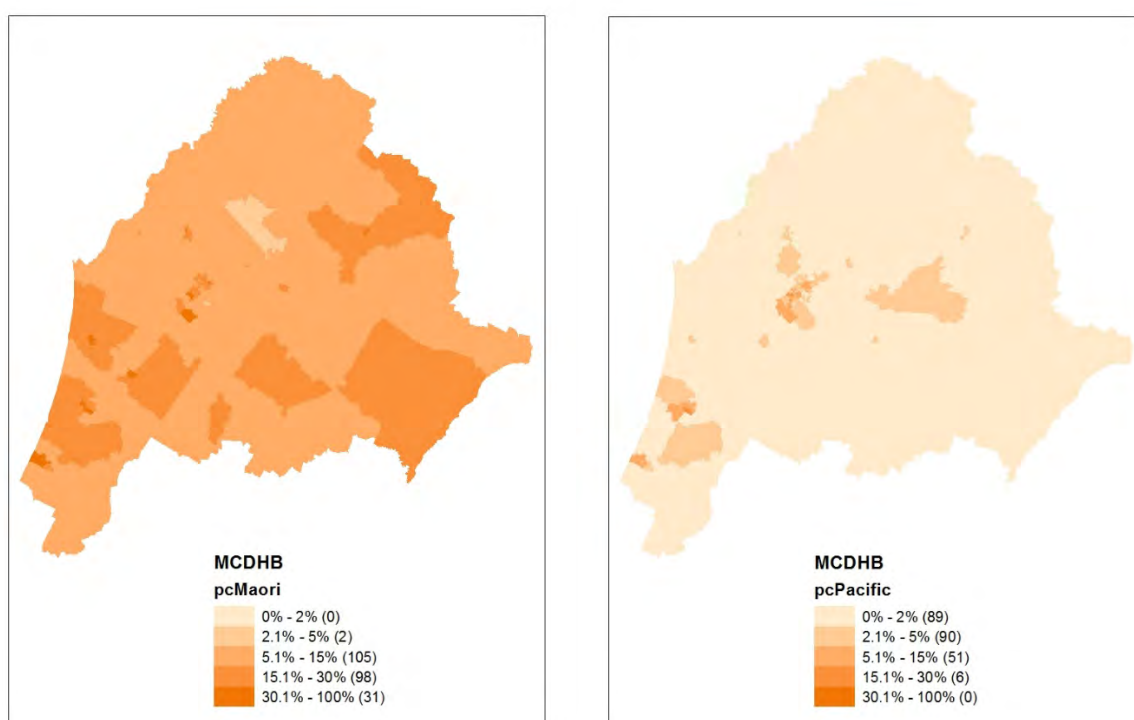
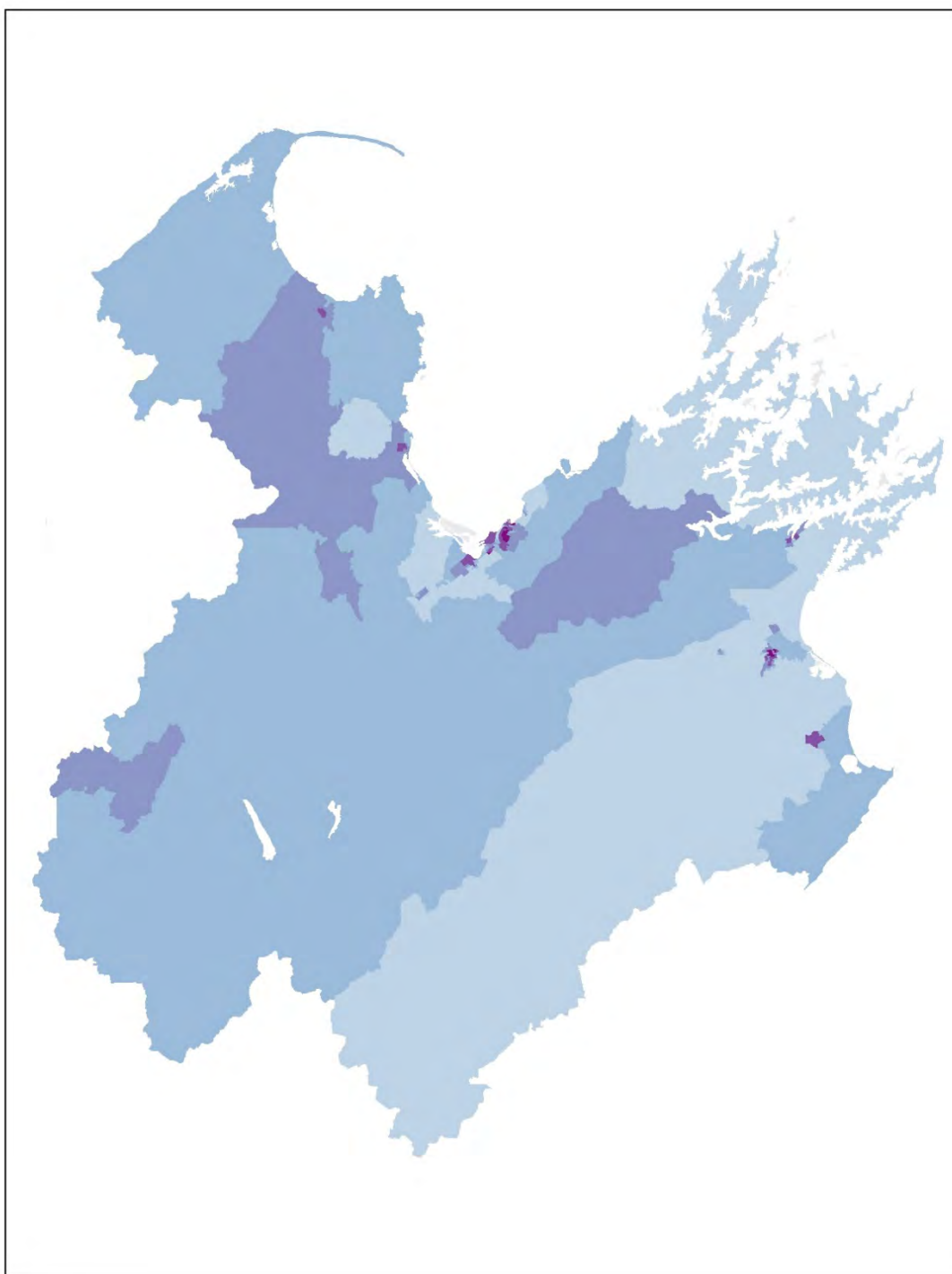


Figure 8. Distribution of Māori and Pacific people in the MCDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Nelson Marlborough DHB



Nelson Marlborough DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Nelson Marlborough DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, data zones can be just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

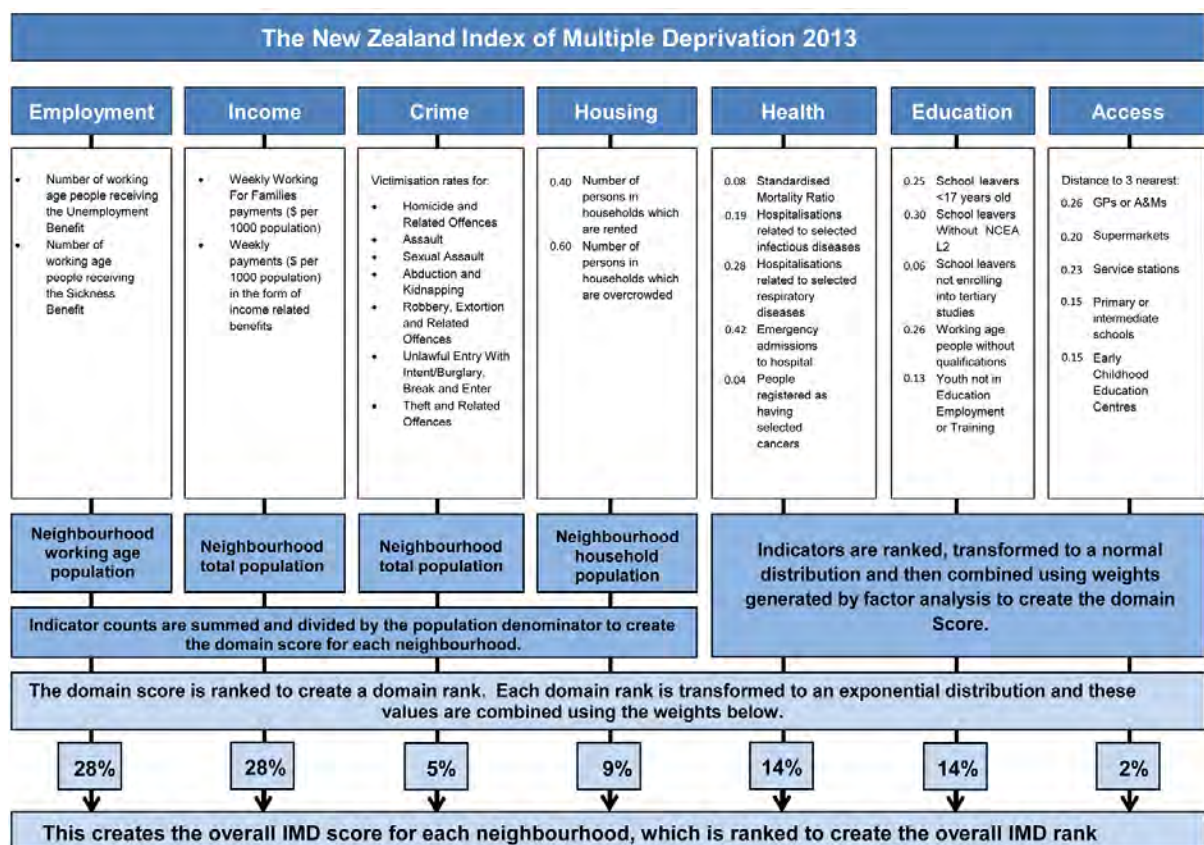


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Nelson Marlborough DHB (NMDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the NMDHB were the same as for all of NZ, we would see 20% of the NMDHB's 196 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was much lower than 20% for overall IMD deprivation and for all domains except Access. Q4 deprivation was also lower than average, except for the Income, Education and Access Domains. The NMDHB had relatively low levels of overall IMD deprivation, with only 23.5% (46/196) of its data zones in Q4 or Q5.

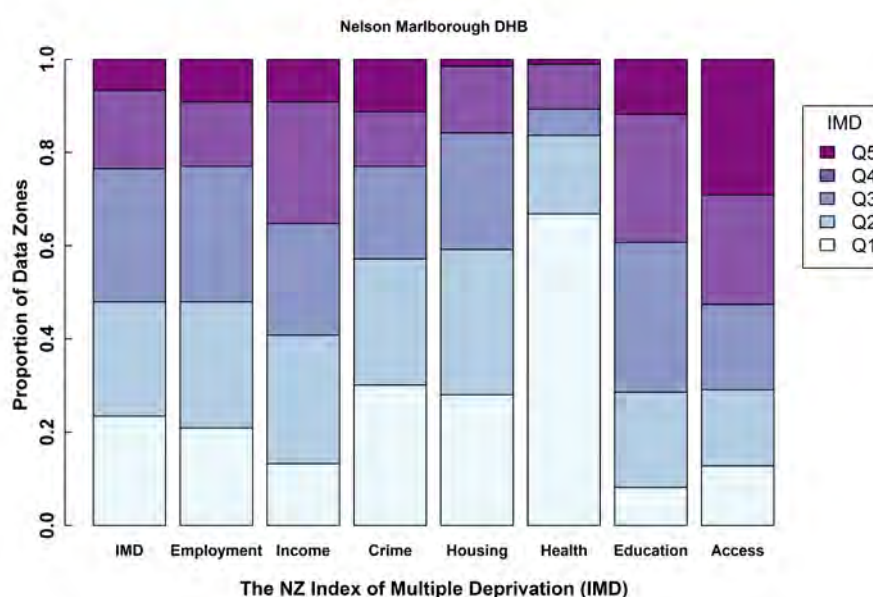


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the NMDHB

Table 1 shows summary statistics by domain for 13 NMDHB data zones that were among NZ's 20% most deprived and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Income (5275), Employment (5182), Education (5028) and Crime (4788) contributed to high overall IMD deprivation in these 13 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ¹⁹ deprivation ranks by domain for 13 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4793 | 4198 | 4335 | 2936 | 2974 | 626 | 2680 | 29 |
| Max | 5384 | 5714 | 5674 | 5920 | 4840 | 5606 | 5589 | 2905 |
| Median | 4845 | 5182 | 5275 | 4788 | 4467 | 1630 | 5028 | 1253 |

Table 1. Minimum, maximum and median deprivation ranks by domain for the 13 data zones in the NMDHB with Q5 IMD deprivation

¹⁹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

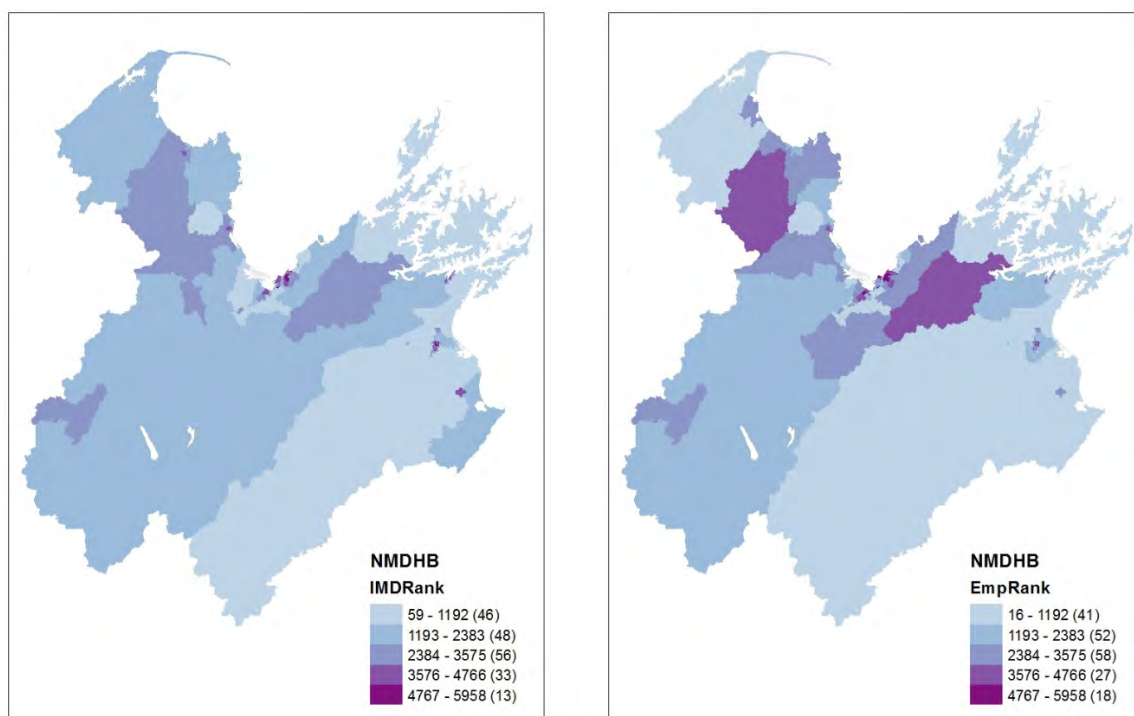


Figure 3. Distribution of overall IMD and employment deprivation in the NMDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows low levels of Q5 deprivation in the NMDHB. Only 6.6% (13/196) of data zones were among the most deprived 20% in NZ (Q5), while 23.5% (46/196) of data zones were in the least deprived 20% in NZ (Q1). The median IMD rank in the NMDHB was 2481, 8.4% (498 ranks) better than the NZ median of 2979. The majority (11/13) of Q5 data zones were in Nelson South and Toi Toi, while one was in Stoke and another in The Wood. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the NMDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the NMDHB, only 9.2% (18/196) of data zones were in the 20% most deprived in NZ for the Employment Domain. In contrast, 20.9% (41/196) of data zones were in the least deprived 20%. The median employment deprivation rank in the NMDHB was 2477, 8.4% (502 ranks) better than the NZ median of 2979. The distribution of Q5 employment deprivation followed a similar pattern to overall IMD deprivation, except that it had five more Q5 data zones.

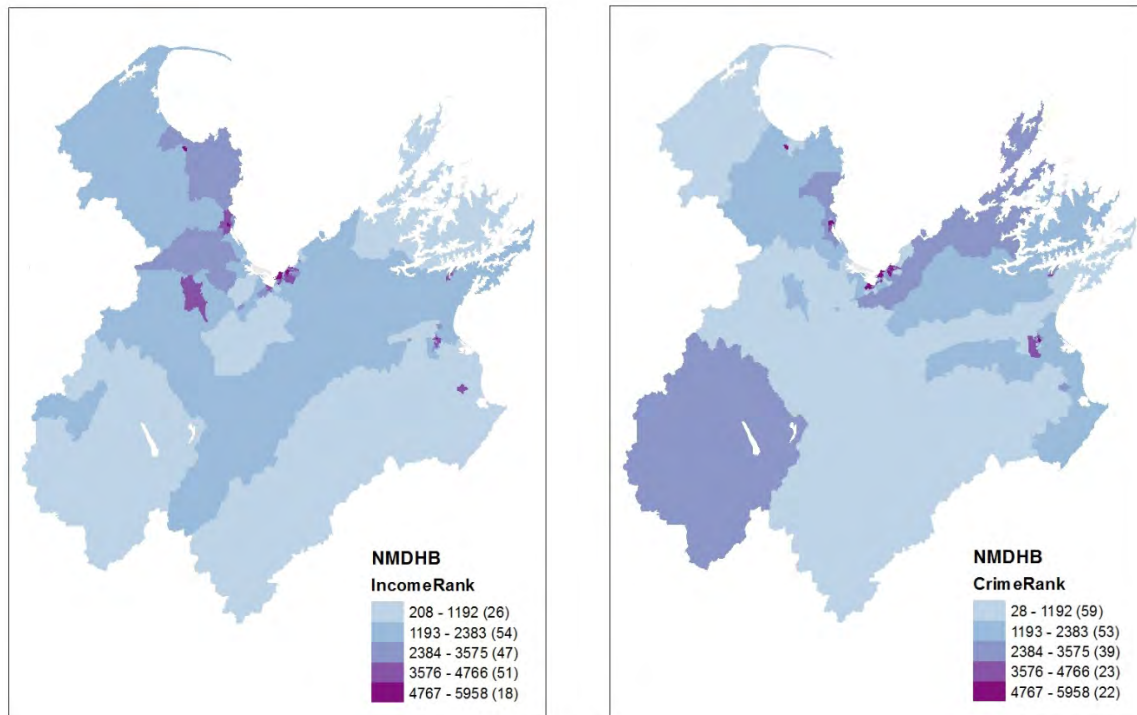


Figure 4. Distribution of income and crime deprivation in the NMDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the NMDHB, only 9.2% (18/196) of data zones were among NZ's 20% most income deprived, while 13.3% (26/196) were among the 20% least income deprived. The median income deprivation rank in the NMDHB was 2969, 0.2% (10 ranks) better than the NZ median. The distribution of Q5 data zones followed a similar pattern to overall (IMD) deprivation. There were no Q5 income deprived data zones in rural parts of the NMDHB.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the NMDHB, only 11.2% (22/196) of data zones were among NZ's 20% most deprived for the Crime Domain, while 30.1% (59/196) were among NZ's 20% least deprived. The median crime deprivation rank in the NMDHB was 2091, 14.9% (889 ranks) better than the NZ median. High (Q5) rates of crime victimization occurred in urban areas including Nelson, Richmond, Annesbrook and Motueka.

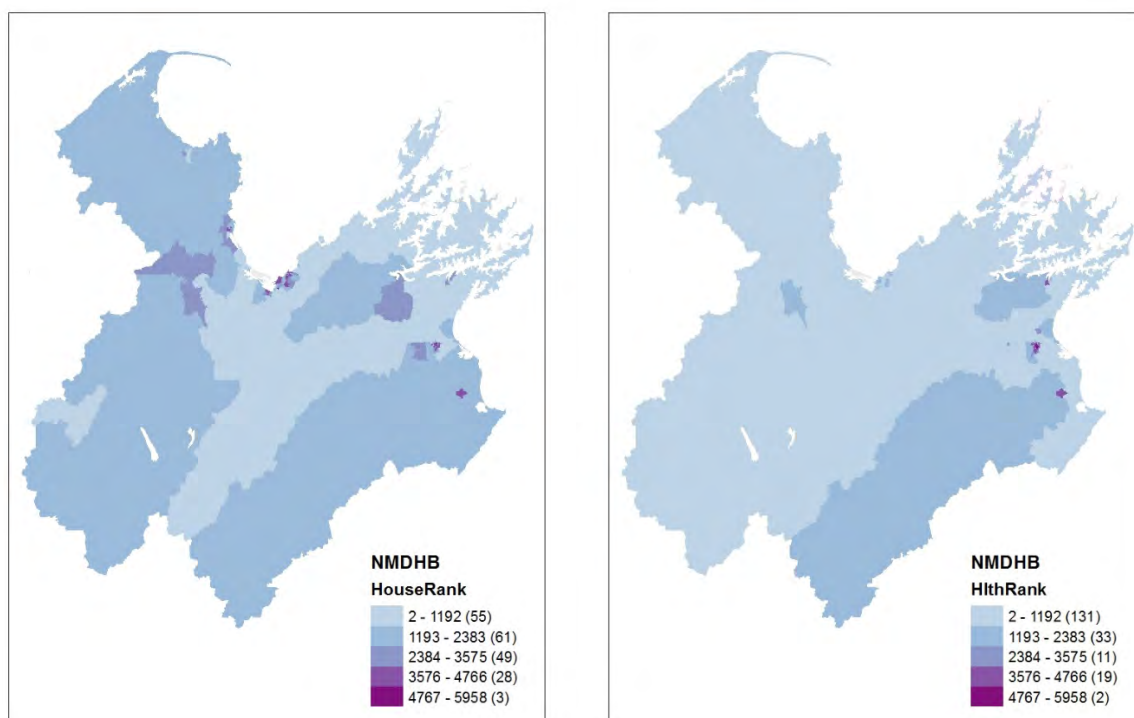


Figure 5. Distribution of housing and health deprivation in the NMDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%) in 2013. In the NMDHB, only 1.5% (3/196) of data zones were among the 20% most deprived in NZ while 28.1% (55/196) of data zones were among the 20% least deprived. The median housing deprivation rank in the NMDHB was 2008, 16.3% (971 ranks) better than the NZ median. The three data zones that had Q5 housing deprivation were located in Nelson South, Stoke and Blenheim.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the NMDHB, only 1.0% (2/196) of data zones were among the 20% most health deprived in NZ, while 66.8% (131/196) were among the least deprived 20%. The median health deprivation rank in the NMDHB was 665, 38.8% (2314 ranks) better than the NZ median, showing that there are very low levels of health deprivation in the NMDHB. The two data zones with Q5 health deprivation were located in Blenheim.

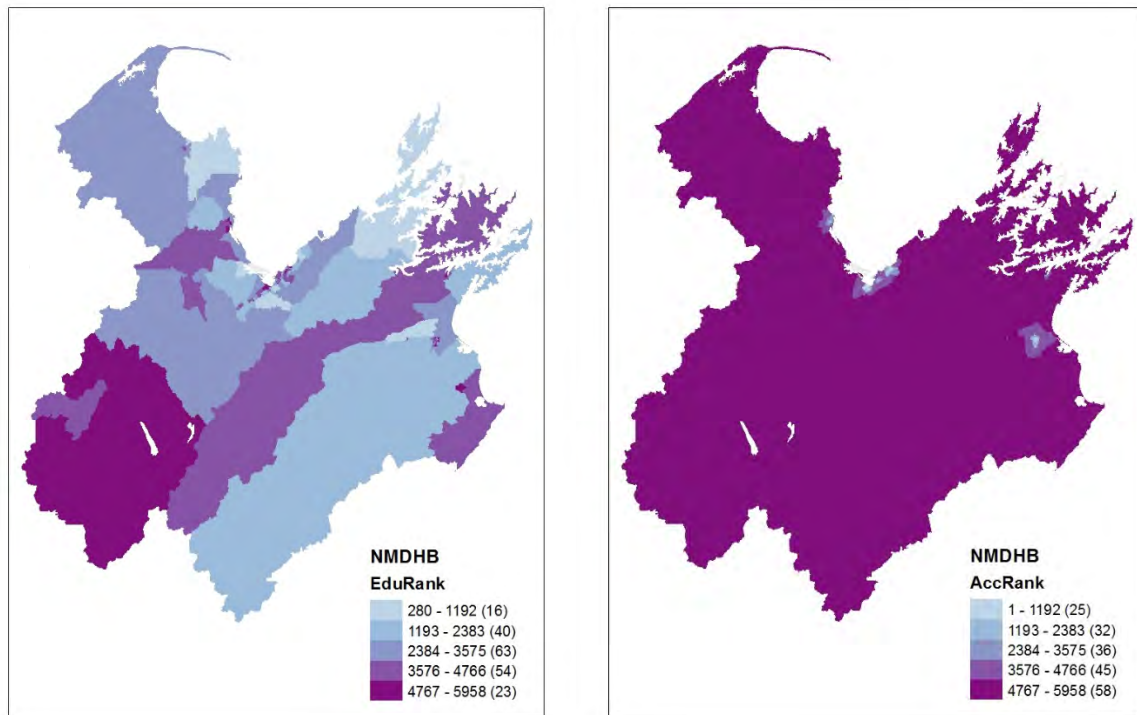


Figure 6. Distribution of education and access deprivation in the NMDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the NMDHB, 11.7% (23/196) of data zones were among NZ's 20% most education deprived, and 8.2% (16/196) were in the least deprived 20%. The median education deprivation rank in the NMDHB was 3202, 3.7% (223 ranks) worse than the NZ median. Data zones with Q5 education deprivation were distributed primarily in Nelson, Richmond, Motueka and Blenheim, but there was one each in Seddon and Picton. There was also a large rural data zone with Q5 education deprivation that included Tutaki, Burnbrae and Matakitaiki.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the NMDHB, 29.1% (57/196) of data zones were among NZ's 20% most access deprived, while 12.8% (25/196) were in NZ's 20% least deprived. The median access deprivation rank in the NMDHB was 3690, 11.9% (711 ranks) worse than the NZ median. Predictably, the entire rural part of the NMDHB was Q5 access deprived. Access to services was good in and around Motueka, Nelson and Blenheim.

Age profile of the Nelson Marlborough DHB

According to the 2013 census, the NMDHB had a total population of 136,974 people living in 196 data zones, with a mean of 699 people each (range: 501 to 951).

| Mean data zone proportions for five age groups in the NMDHB | | | | | |
|---|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Nelson Marlborough DHB | 19.0% | 10.2% | 22.6% | 29.6% | 18.6% |
| New Zealand ²⁰ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -1.4 | -3.6 | -3.0 | 3.8 | 4.3 |

Table 2. Mean data zone proportions for five age groups in the NMDHB

Table 2 shows that the age profile of the NMDHB differs most from the national age profile in that it has 3.6% fewer people aged 15-24 and 4.3% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

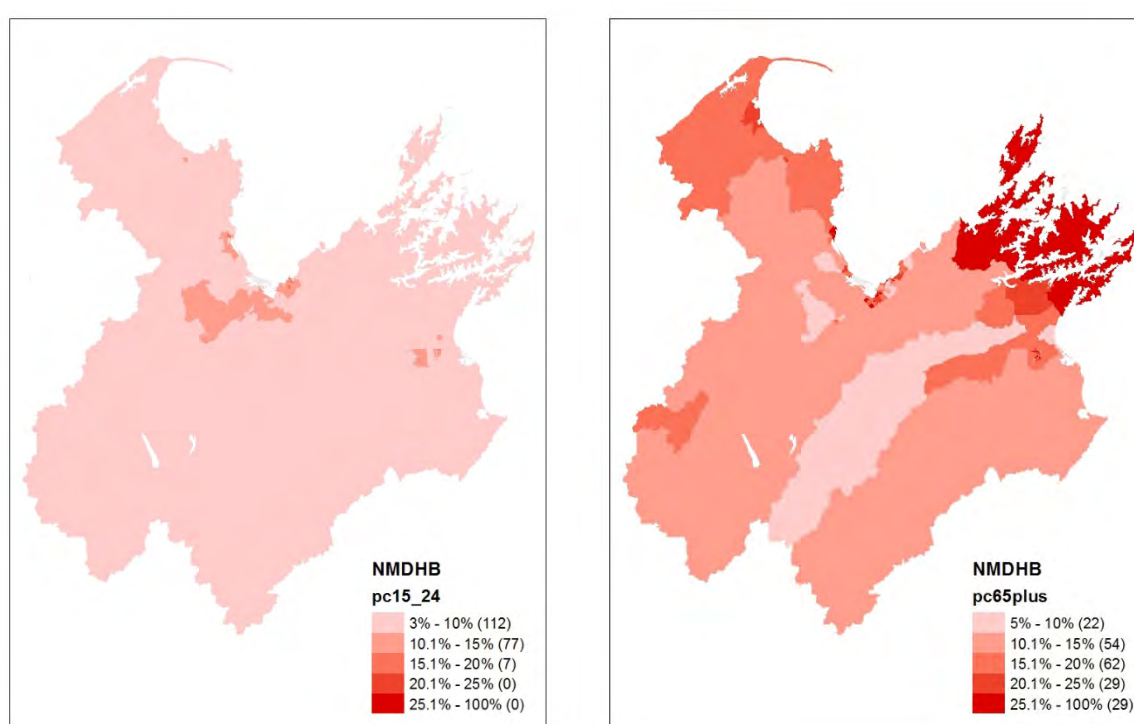


Figure 7. Distribution of people aged 15-24 and people aged 65+ in the NMDHB

Ethnicity profile of the Nelson Marlborough DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the NMDHB ranged from 1.6% to 24.9%. The overall proportion

²⁰ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

of Māori in the NMDHB was 9.4%, much lower than the national proportion of 14.9%. The proportion of Māori per data zone was greatest in a data zone located in Blenheim (24.9%), followed by Picton (24.7%) and Karaka (23.1%).

The proportion of Pacific ethnicity living in data zones within the NMDHB in 2013 ranged from 0.0% to 8.9%. The overall proportion of Pacific ethnicity was 1.5%, much lower than the national proportion of 7.3%. The proportion of Pacific people was greatest in a data zone located in Blenheim (8.9%), followed by Stepneyville (7.8%).

The percentage of New Zealand European and Other ethnicities (NZEO) living in data zones within the NMDHB ranged from 80.9% to 100.0%. The overall proportion of NZEO was 95.6%, which is greater than the national proportion of 87.5%. The lowest proportions of NZEO (<90%) lived in Motueka, Nelson, Picton, Blenheim and Seddon.

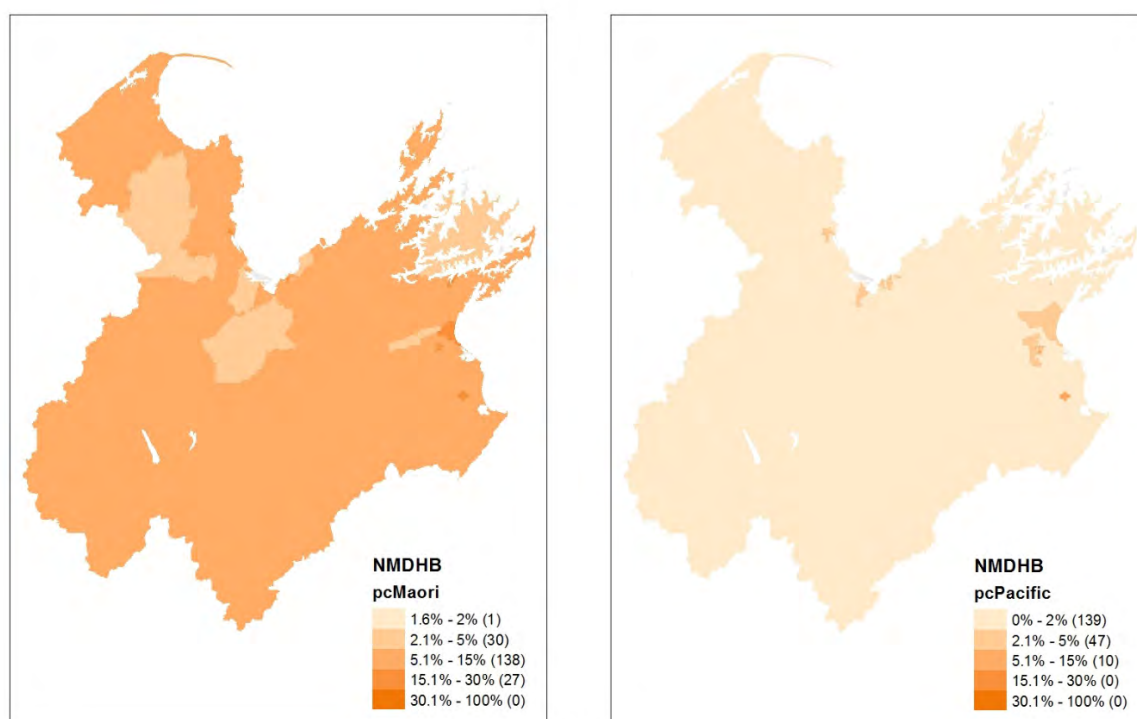
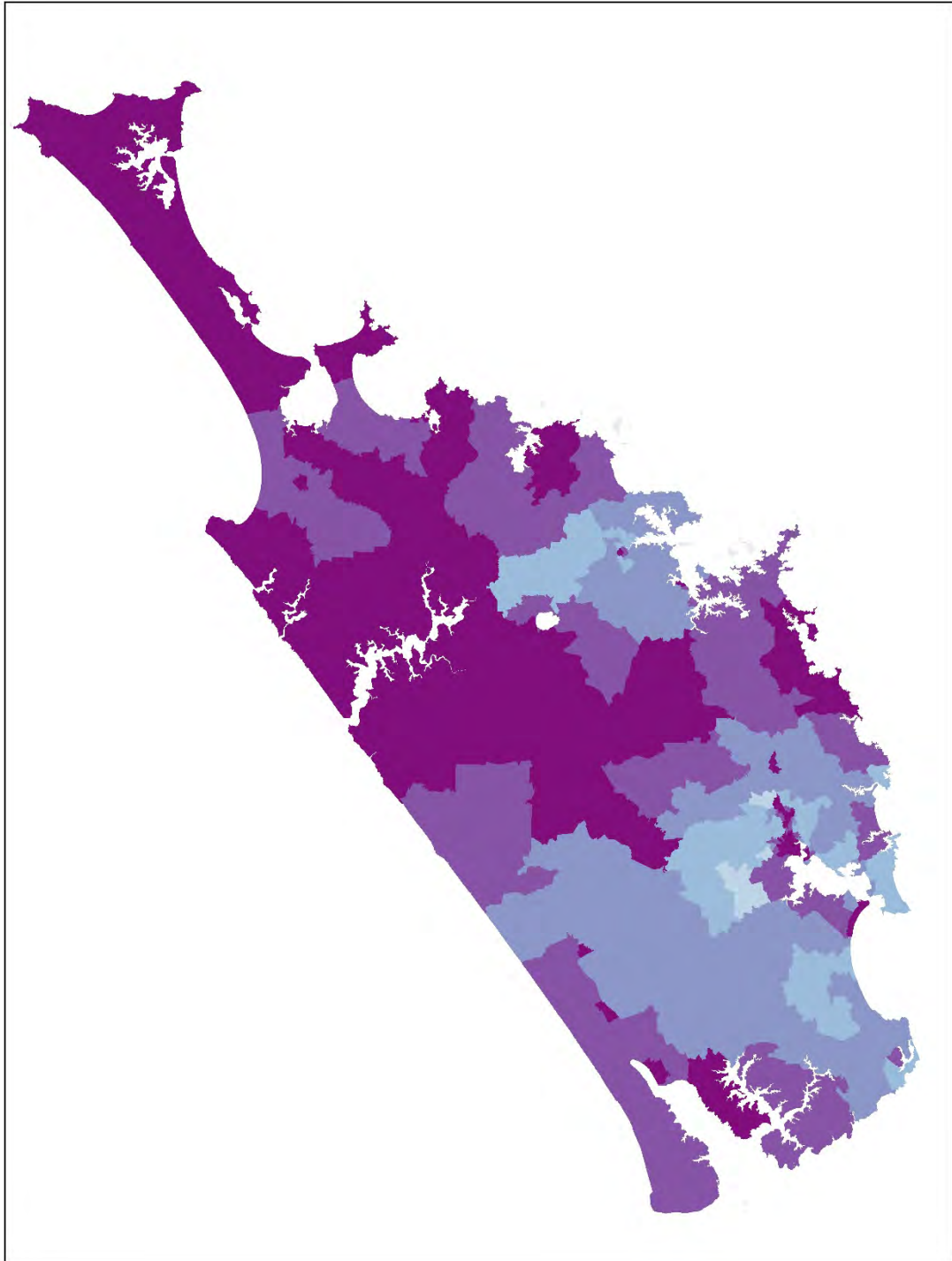


Figure 8. Distribution of Māori and Pacific people in the NMDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Northland DHB



Northland DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Northland DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

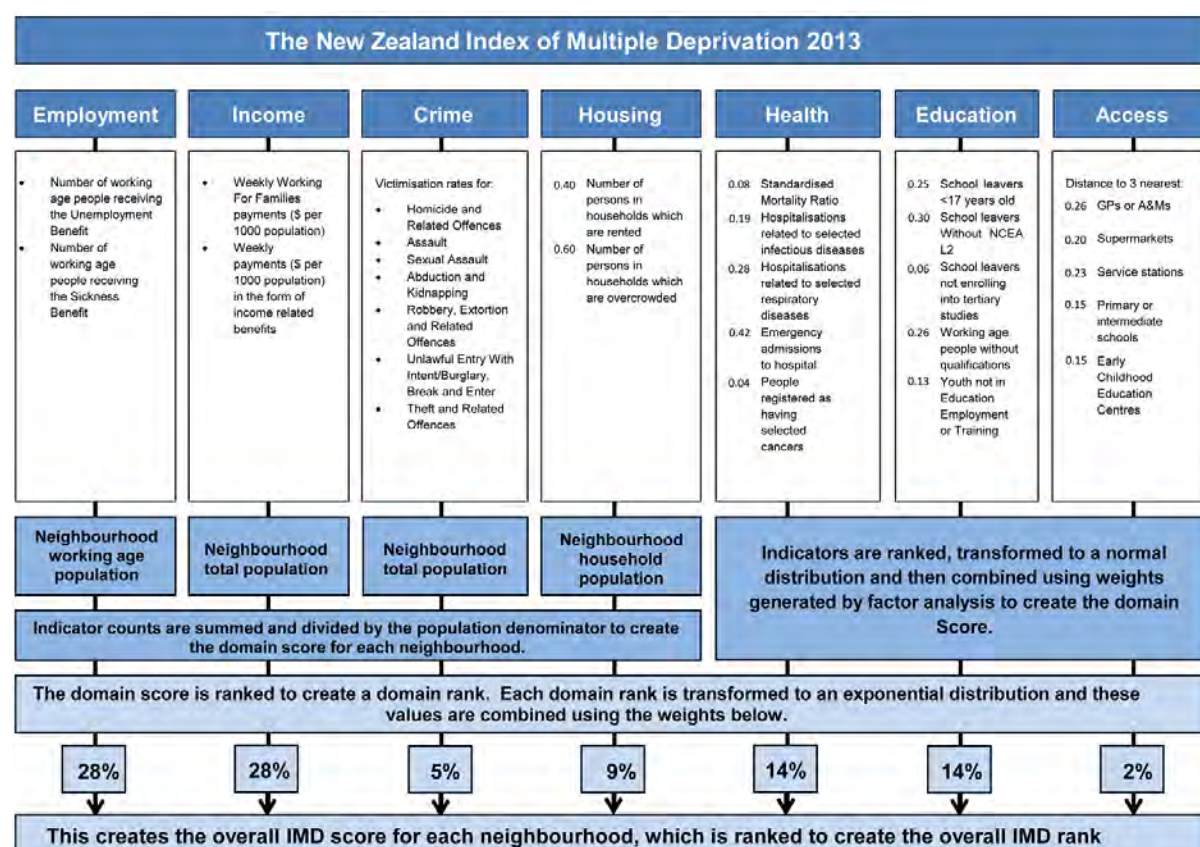


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Fig 2 shows the proportion of data zones in the Northland DHB (NDHB) that belonged to each deprivation quintile for the overall IMD and seven domains in 2013. If the deprivation circumstances were the same as for all of NZ, we would see 20% of the NDHB's 225 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was significantly greater than 20% for overall (IMD) deprivation and for all domains except Housing. The proportion of data zones with Q4 deprivation was also greater than 20%, except for the Crime Domain. The NDHB has high levels of overall IMD deprivation, with 65.3% (147/225) of its data zones either in Q4 or Q5.

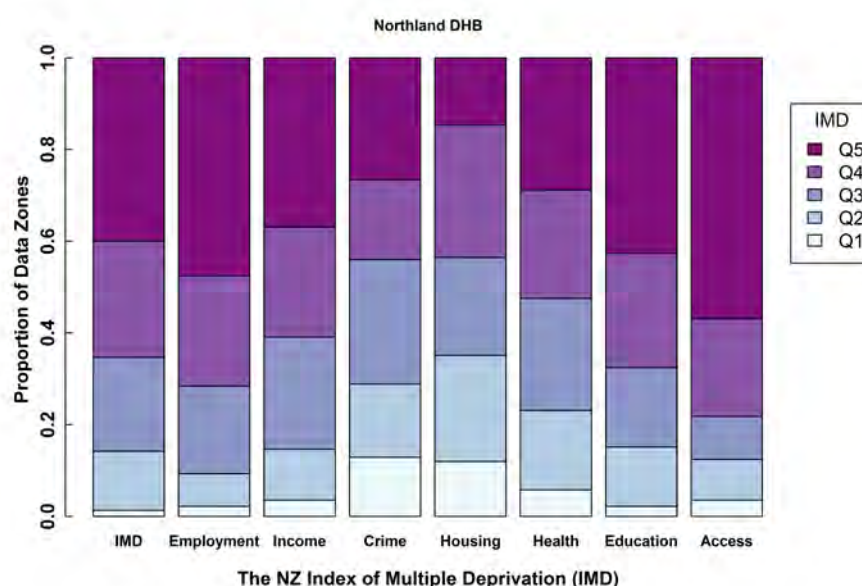


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the NDHB

Table 1 shows summary statistics by domain for 90 NDHB data zones that were among NZ's 20% most deprived (Q5) data zones for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Employment (5670), Education (5429), Income (5386), Health (5135) and Crime (5017) were contributing to high overall IMD deprivation in these 90 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ²¹ deprivation ranks by domain for 90 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4772 | 4542 | 2894 | 1397 | 2190 | 1934 | 3532 | 127 |
| Max | 5956 | 5956 | 5945 | 5950 | 5669 | 5944 | 5953 | 5879 |
| Median | 5442 | 5670 | 5386 | 5017 | 4584 | 5135 | 5429 | 4369 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 90 data zones in the NDHB with Q5 IMD deprivation

²¹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

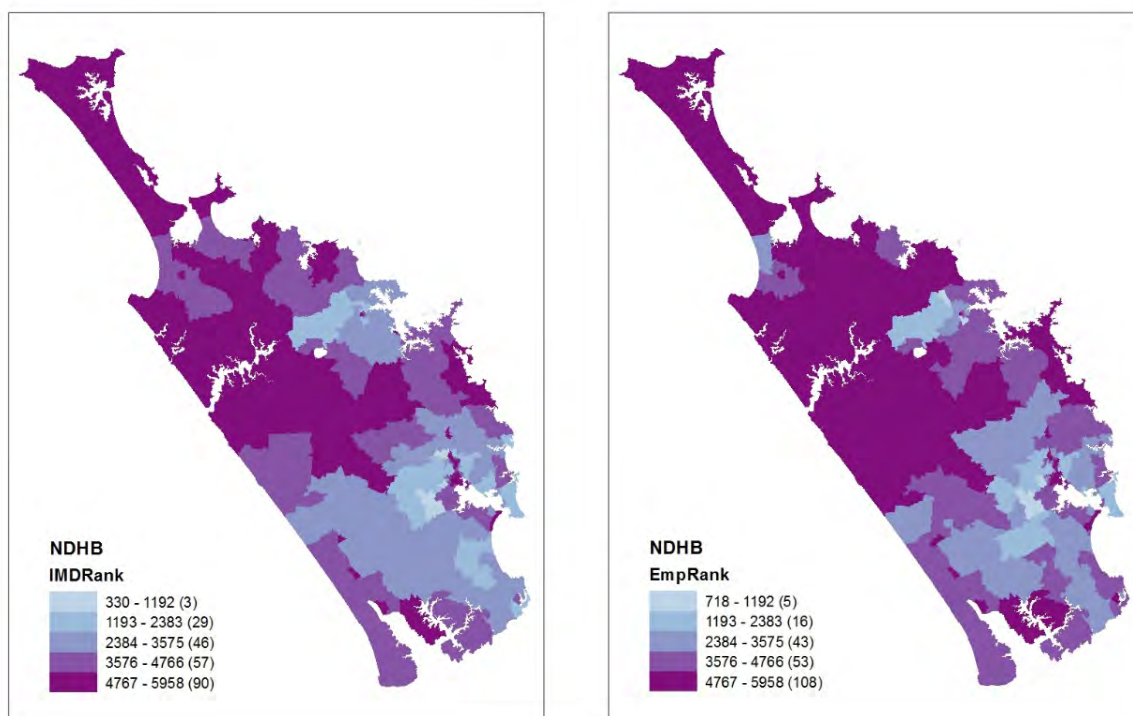


Figure 3. Distribution of overall IMD and employment deprivation in the NDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows high levels of Q5 deprivation in the NDHB. 40.0% (90/225) of its data zones were among the most deprived 20% in NZ (Q5), while only 1.3% (3/225) were among the least deprived 20% (Q1). The median IMD in the NDHB rank was 4351, 23.0% (1372 ranks) worse than the NZ median of 2979. Most of the Q5 data zones were concentrated in the northern part of the NDHB, but 36 of them were located in and around Whangarei. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the NDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the NDHB, 48.0% (108/225) of data zones were among the 20% most deprived in NZ for the Employment Domain, while only 2.2% (5/225) were among the least deprived 20%. The median employment deprivation rank in the NDHB was 4664, 28.3% (1685 ranks) worse than the NZ median of 2979. These high levels of employment deprivation closely followed the pattern of overall IMD deprivation, with (Q5) employment deprivation throughout the north and west of the DHB and in 41 Q5 data zones in the Whangarei area.

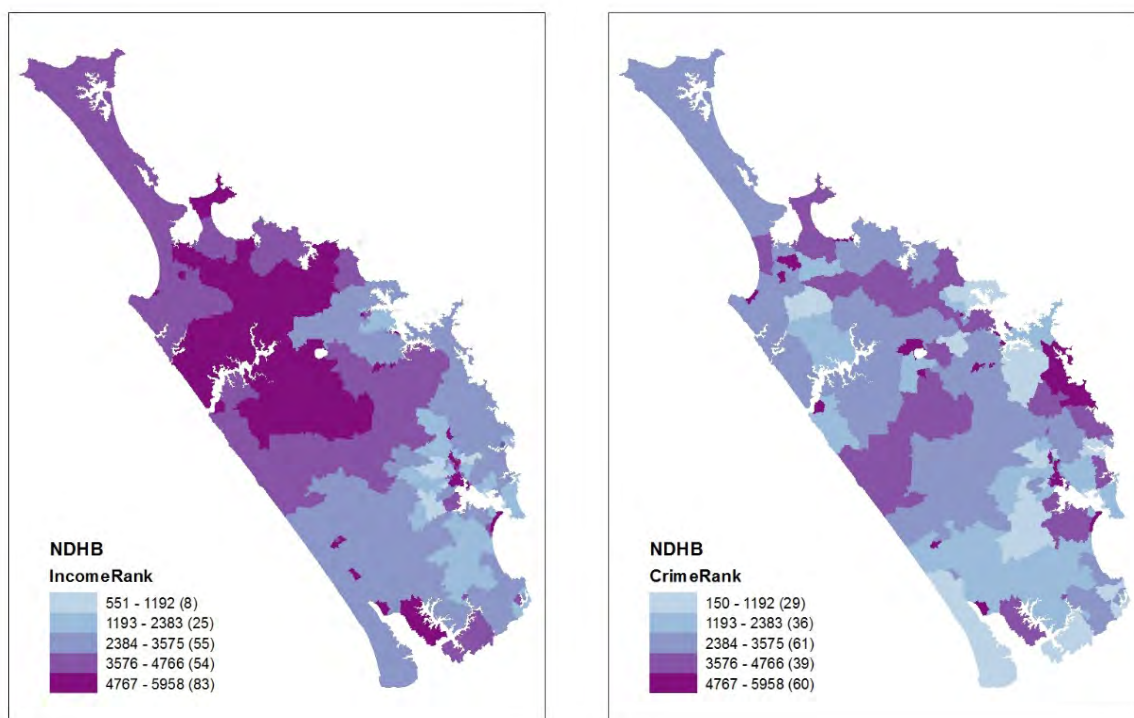


Figure 4. Distribution of income and crime deprivation in the NDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the NDHB, 36.9% (83/225) of data zones were among NZ's 20% most income deprived, while only 3.6% (8/225) of data zones were among the 20% least income deprived. The median income deprivation rank in the NDHB was 3978, 16.8% (999 ranks) worse than the NZ median. High (Q5) levels of income deprivation were concentrated in rural areas around the Hokianga and Kaipara Harbours and in most urban areas, including 36 data zones in and around Whangarei.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the NDHB, 26.7% (60/225) of data zones were among NZ's 20% most deprived for the Crime Domain, while 12.9% (29/225) were among NZ's 20% least deprived. The median crime deprivation rank in the NDHB was 3323, 5.8% (344 ranks) worse than the NZ median. High (Q5) rates of crime victimisation occurred in most medium to large sized towns in the NDHB and in 27 data zones in and around Whangarei.

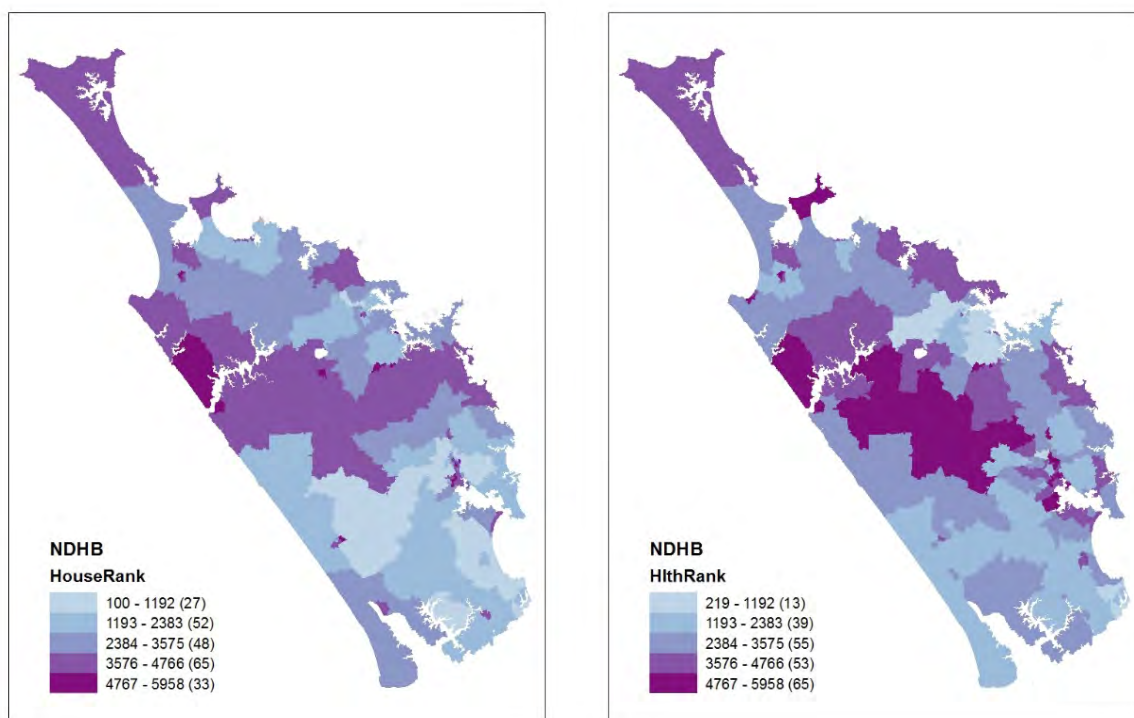


Figure 5. Distribution of housing and health deprivation in the NDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the NDHB, 14.7% (33/225) of data zones were among the 20% most deprived in NZ, and 12.0% (27/225) of data zones were among the 20% least deprived. Q4 was the most common level of housing deprivation in the NDHB with 28.9% (65/225) of data zones. The median housing deprivation rank in the NDHB was 3162, 3.1% (183 ranks) worse than the NZ median. High (Q5) levels of housing deprivation occurred in towns from Kaitaia to Dargaville and rural areas such as the northern Hokianga. In the Whangarei area, there were 15 data zones with Q5 housing deprivation.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the NDHB, 28.9% (65/225) of data zones were among the 20% most health deprived in NZ, and only 5.8% (13/255) were among the least deprived 20%. The median health deprivation rank in the NDHB was 3718, 12.4% (739 ranks) worse than the NZ median. In the far north, these relatively high (Q5) levels of health deprivation occurred in Ahipara, Kaitaia and the Karikari Peninsula, and further south in areas around Kaikohe. In the Whangarei area, there were 43 data zones with Q5 health deprivation.

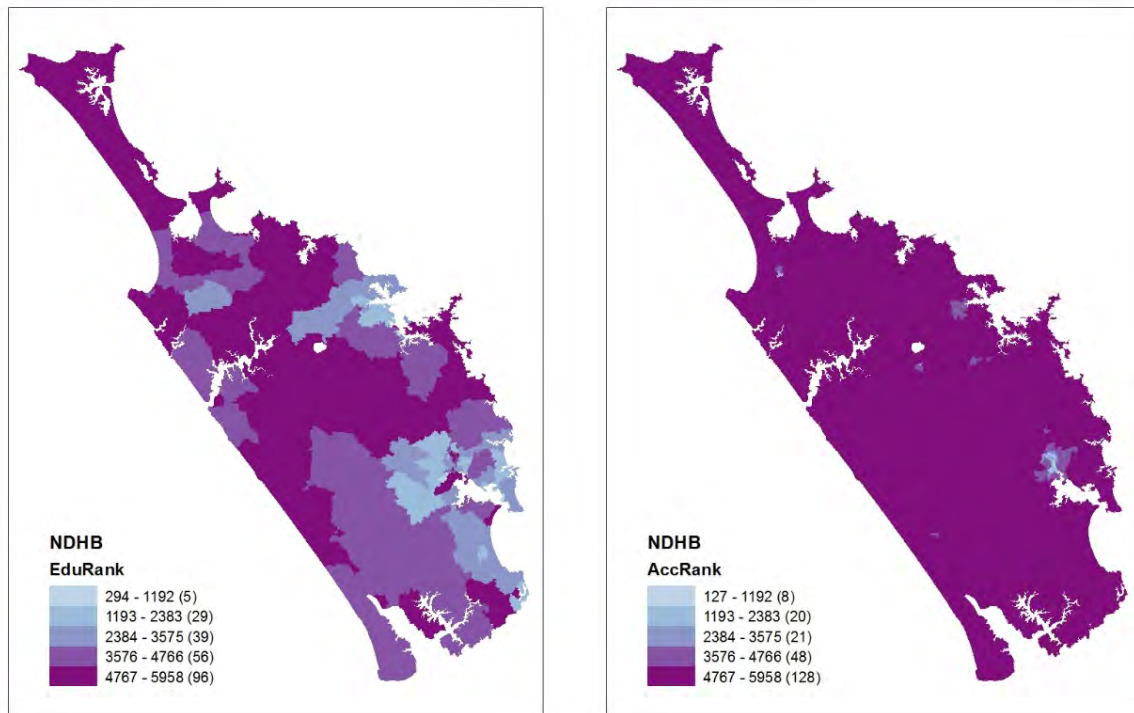


Figure 6. Distribution of education and access deprivation in the NDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the NDHB, 42.7% (96/225) of data zones were among NZ's 20% most education deprived, and only 2.2% (5/225) were among the least deprived 20%. The median education deprivation rank in the NDHB was 4474, 25.1% (1495 ranks) worse than the NZ median. These high (Q5) levels of education deprivation occurred throughout the NDHB, except for some rural areas south of Kaitaia, around Kerikeri and in the Whangarei District.

The Access Domain measures the distance from the population weighted centre of each data zone to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the NDHB, 56.9% (128/225) of data zones were among NZ's 20% most access deprived, and only 3.6% (8/225) were among NZ's 20% least deprived. The median access deprivation rank in the NDHB was 5060, 34.9% (2081 ranks) worse than the NZ median, confirming that access to services was very poor in many parts of the NDHB.

Age profile of the Northland DHB

According to the 2013 census, the Northland DHB (NDHB) had a total population of 151,599 people living in 225 data zones, with a mean of 674 people each (range: 501 to 1002).

| Mean data zone proportions for five age groups in the NDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Northland DHB | 21.6% | 11.0% | 20.5% | 28.7% | 18.3% |
| New Zealand ²² | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 1.2% | -2.8% | -5.1% | 2.9% | 4.0% |

Table 2. Mean data zone proportions for five age groups in the NDHB

Table 2 shows that the age profile of the NDHB differs most from the national age profile in that it has 5.1% fewer people aged 25-44 and 4.0% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

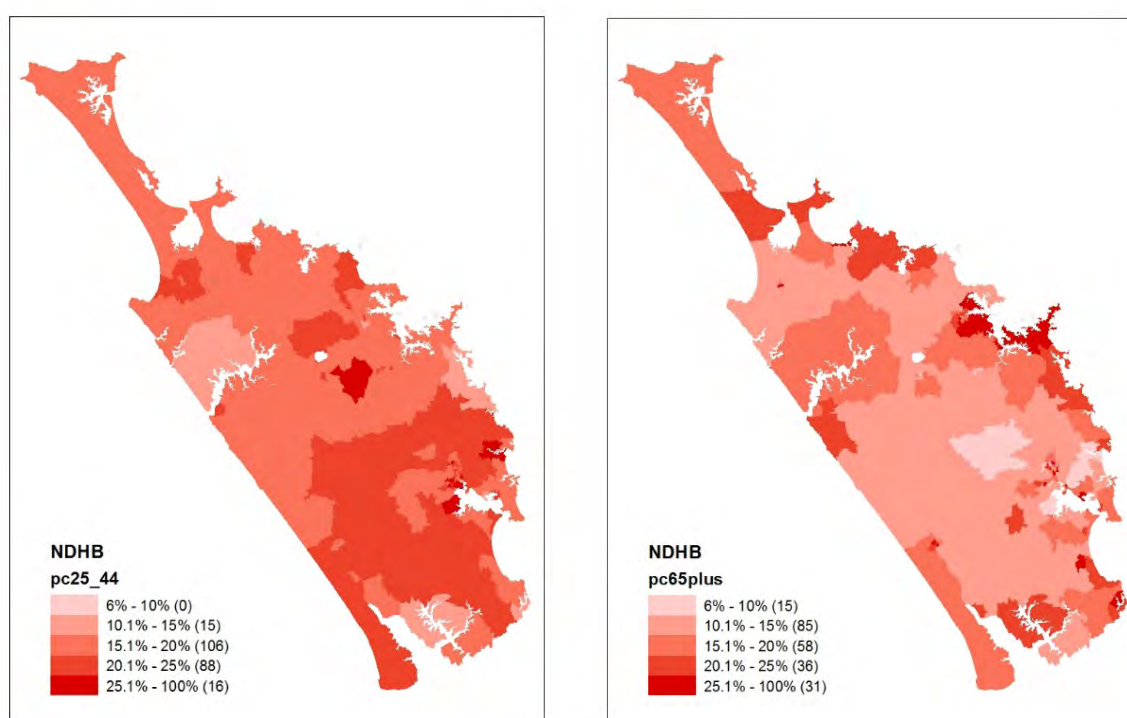


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the NDHB

Ethnicity profile of the Northland DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the NDHB in 2013 ranged from 13.1% to 92%. The overall

²² Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

proportion of Māori in the NDHB (32.4%) was more than double the national proportion of 13.7%. The proportion of Māori per data zone was greatest in the northern part of the DHB and in some Whangarei suburbs.

The proportion of Pacific ethnicity living in data zones within the NDHB ranged from 2.3% to 11%. The overall proportion of Pacific ethnicity was 3.2%, which is very low compared to the national proportion of 7.3%. A Dargaville data zone had the highest proportion of Pacific people (11%), followed by Kawakawa (9.9%) and Kaikohe (9.9%).

The proportion of New Zealand European and Other ethnicities (NZEO) in NDHB data zones ranged from 47.5% to 98.9%. The overall proportion of NZEO in the NDHB was 80.0%, much lower than the national proportion of 89.4%. The lowest proportions of NZEO (<40%) lived on Te Aupōuri Peninsula, in northern and southern parts of the Hokianga, and in Kaikohe, Moerewa, and Otangarei.

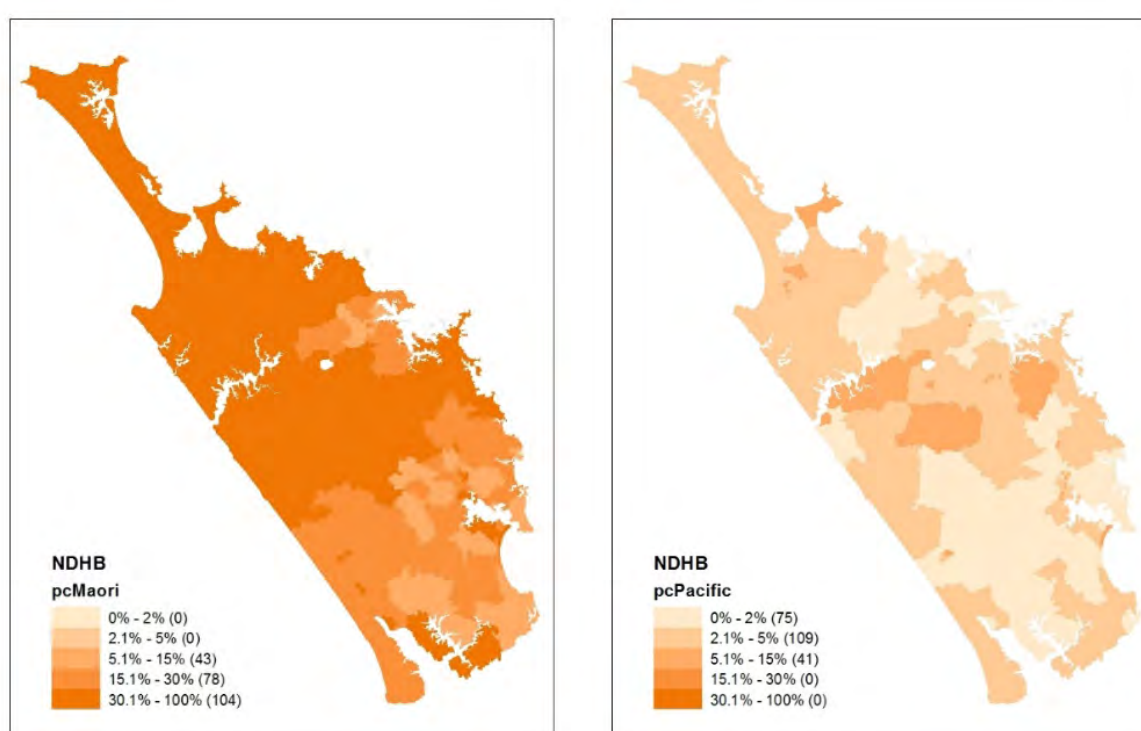
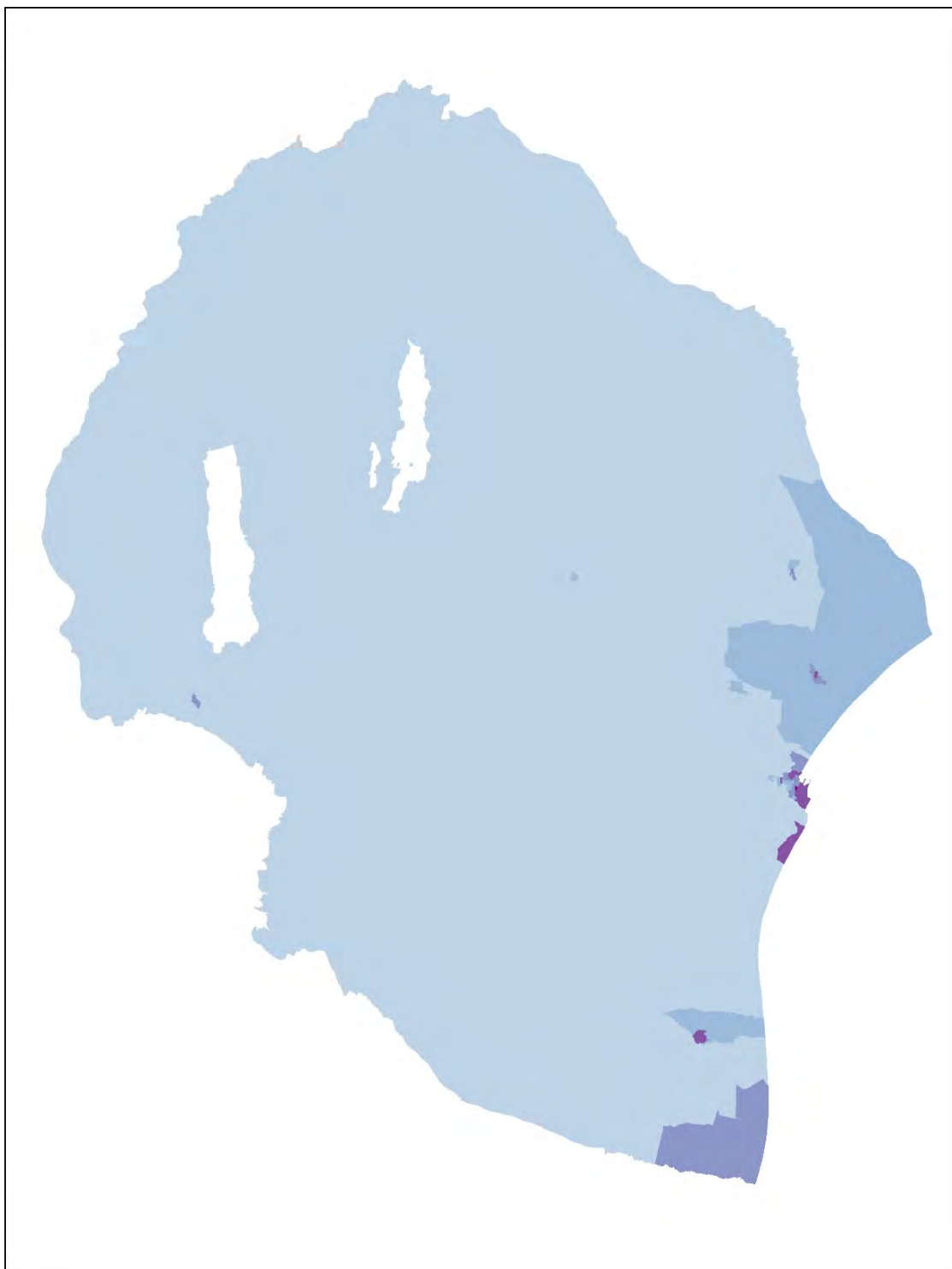


Figure 8. Distribution of Māori and Pacific people in the NDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

South Canterbury DHB



South Canterbury DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the South Canterbury DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains

The IMD measures deprivation at the neighbourhood level using custom data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, data zones can be just a few streets long and wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

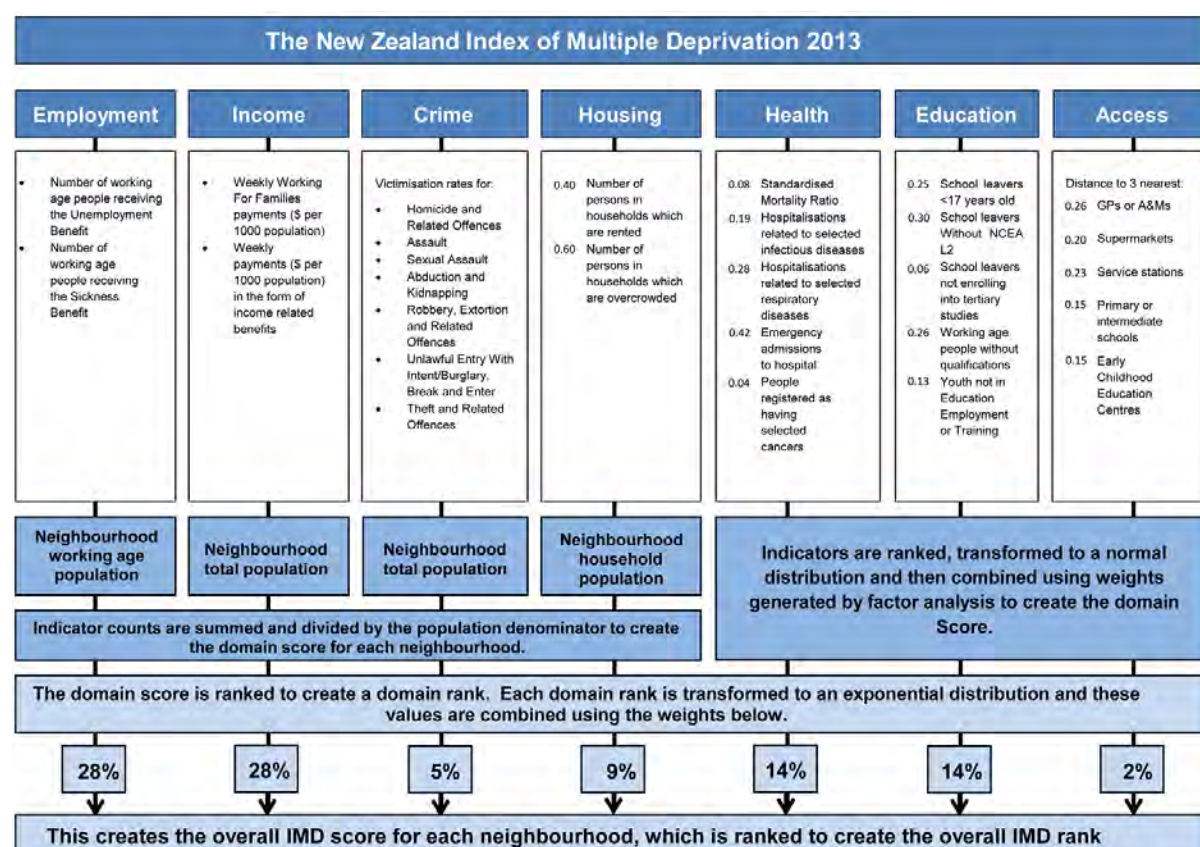


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the South Canterbury DHB (SCDHB) that belong to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the SCDHB were the same as for all of NZ, we would see 20% of the SCDHB's 78 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was significantly less than 20% for the overall IMD and all domains except Access and Education. The proportion of data zones with Q4 deprivation was less than 20% for the IMD and all domains except for Income and Education. The SCDHB has low levels of overall IMD deprivation, with only 23.1% (18/78) of its data zones either in Q4 or Q5.

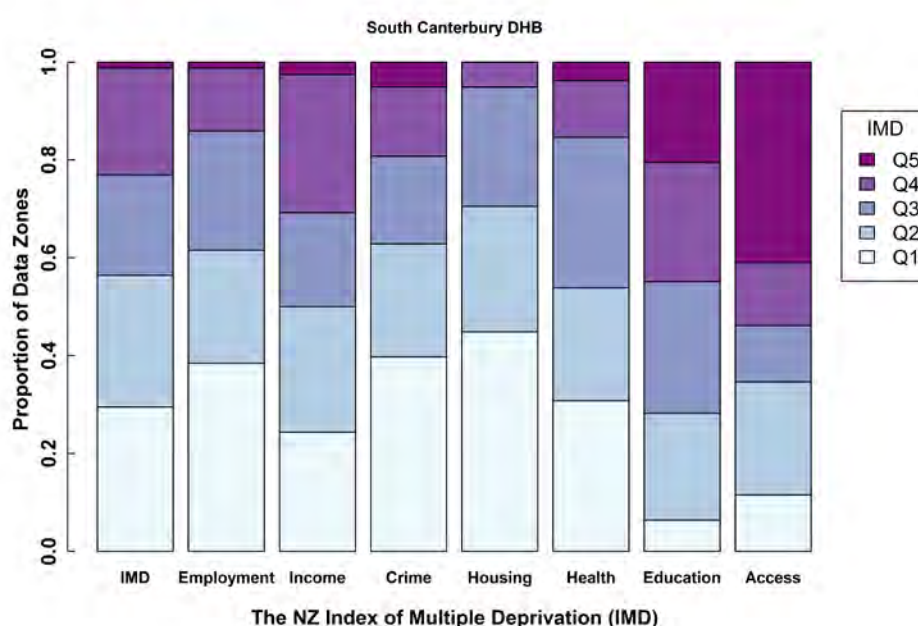


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the South Canterbury

Table 1 shows summary statistics by domain for the SCDHB's 18 most deprived (Q4 and Q5 combined) data zones for the IMD and reveals the contributions of different domains. High median deprivation ranks for Education (4960) and Income (4369) were contributing to high overall IMD deprivation in these 18 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ²³ ranks by domain for 18 data zones with Q4 or Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 3583 | 2934 | 3687 | 1197 | 1241 | 1552 | 3766 | 387 |
| Max | 5026 | 5128 | 4853 | 5805 | 4386 | 5835 | 5705 | 5250 |
| Median | 4173 | 3767 | 4369 | 3509 | 3053 | 3556 | 4960 | 2150 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 18 Q4 and Q5 IMD data zones in the SCDHB

²³ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

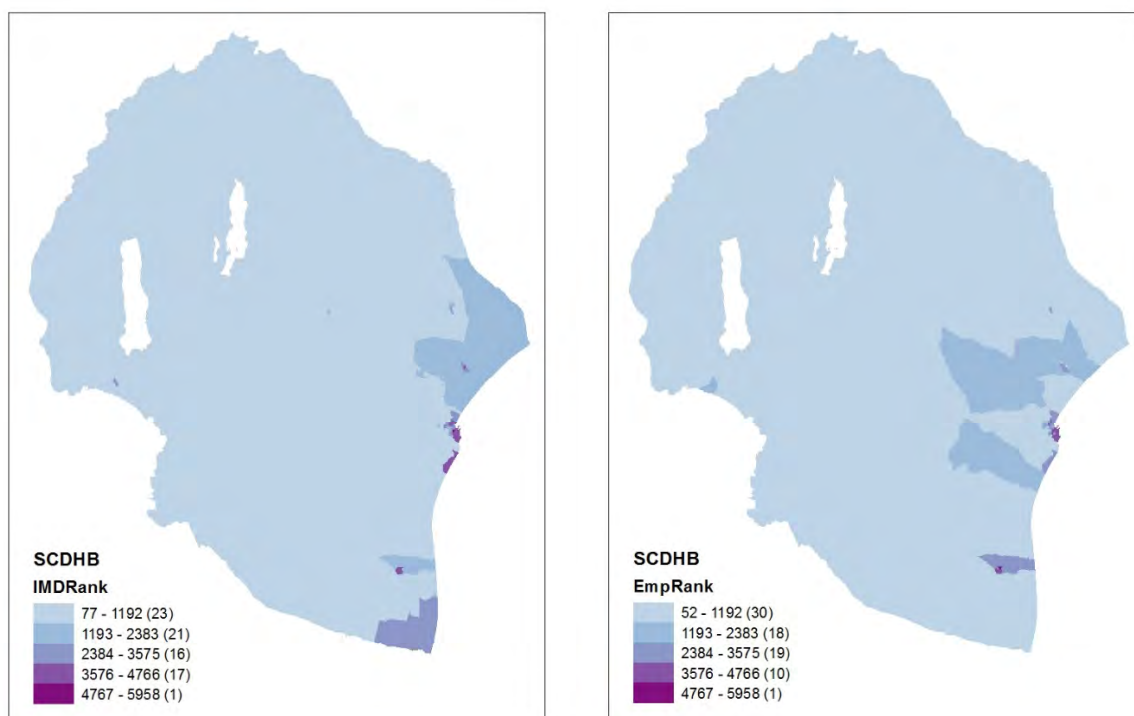


Figure 3. Distribution of overall IMD and employment deprivation in the SCDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall (IMD) on the left of Figure 3 shows very low levels of Q5 deprivation in the SCDHB. Only 1.3% (1/78) of its data zones were among the most deprived 20% in NZ (Q5), while 29.5% (23/78) were in the least deprived 20% (Q1). The median IMD rank in the SCDHB was 2017, 16.2% (963 ranks) better than the NZ median of 2979. There was only one Q5 data zone in the SCDHB, located in Seaview in Timaru, and there were 17 Q4 data zones in Temuka, Timaru, Pareora and Waimate. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the SCDHB further.

The Employment Domain measures the proportion of working age people who are receiving the Unemployment or Sickness Benefits. In the SCDHB, only 1.3% (1/78) of data zones were among the 20% most deprived in NZ for the Employment Domain, while 38.5% (30/78) of data zones were among the least deprived 20%. The median employment deprivation rank in the SCDHB was 1460, 25.5% (1519 ranks) better than the NZ median. There was only one Q5 employment deprived data zone, and it was located in Waimate. Of the ten Q4 data zones, eight were concentrated in Timaru in Parkside, Seaview and Marchwiell and two were in Waimate.

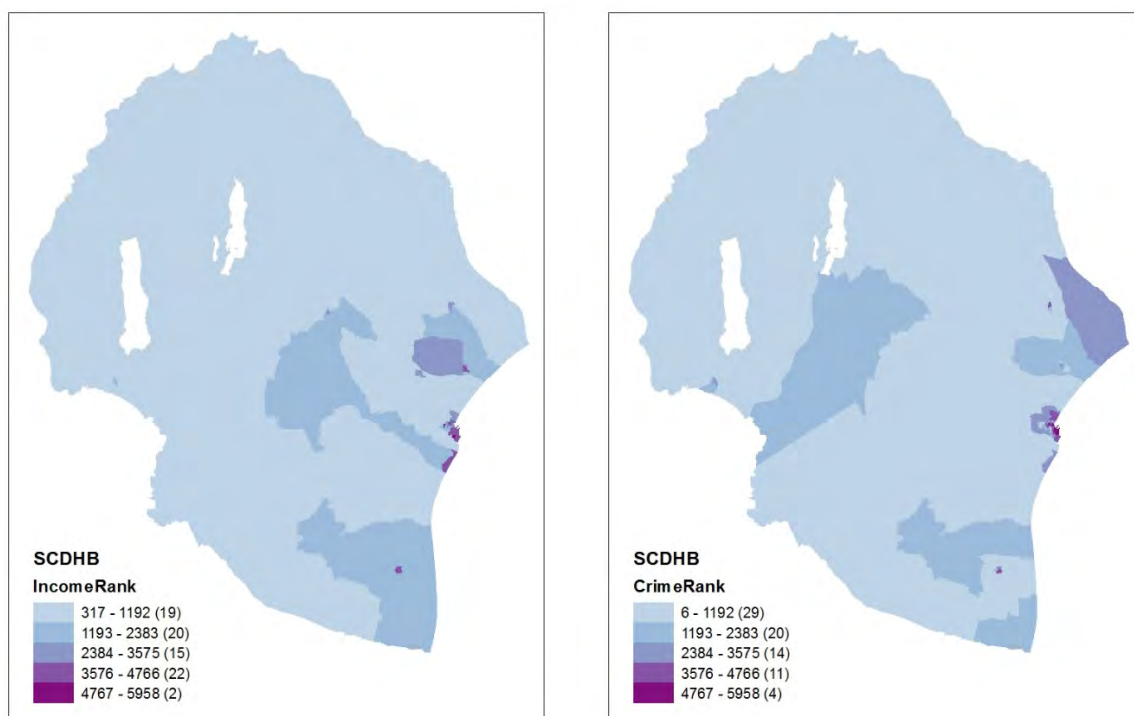


Figure 4. Distribution of income and crime deprivation in the SCDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the SCDHB, only 2.6% (2/78) of data zones were among NZ's 20% most income deprived, while 24.4% (19/78) of data zones were among the 20% least income deprived. The median income deprivation rank in the SCDHB was 2379, 10.1% (601 ranks) better than the NZ median. Q5 levels of income deprivation occurred in Glenwood and Kensington, and Q4 data zones were concentrated in Timaru and in small towns such as Pareora, Temuka and Waimate.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the SCDHB, only 5.1% (4/78) of data zones were among the most deprived 20% for the Crime Domain, while 39.7% (31/78) were among the least deprived 20%. The median crime deprivation rank in the SCDHB was 1592, 23.3% (1387 ranks) better than the NZ median. High (Q5) levels of crime deprivation occurred in Parkside, Timaru Central, Waimataitai and Marchwiell.

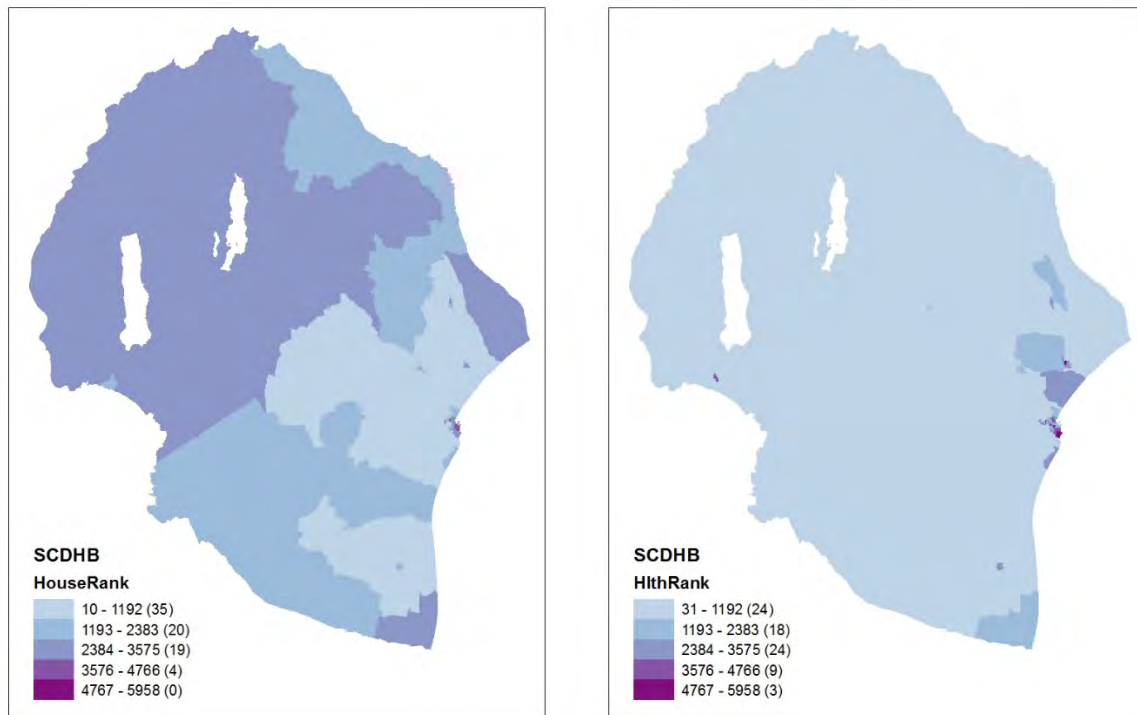


Figure 5. Distribution of housing and health deprivation in the SCDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the SCDHB, there were no data zones among the most deprived 20% in NZ, while 44.9% (35/78) of data zones were among the least deprived 20%. The median housing deprivation rank in the SCDHB was 1307, 28.1% (1672 ranks) better than the NZ median. There were four data zones with Q4 levels of housing deprivation in Marchwiell, Glenwood, Seaview and Parkside.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the SCDHB, only 3.8% (3/78) of data zones were among the 20% most health deprived in NZ, while 30.8% (42/78) were among the least deprived 20%. The median health deprivation rank in the SCDHB was 2249, 12.3% (731 ranks) better than the NZ median. There were three Q5 health deprived data zones located in Temuka, Seaview and Redruth. Q4 data zones were concentrated in Timaru, but there was one in Twizel.

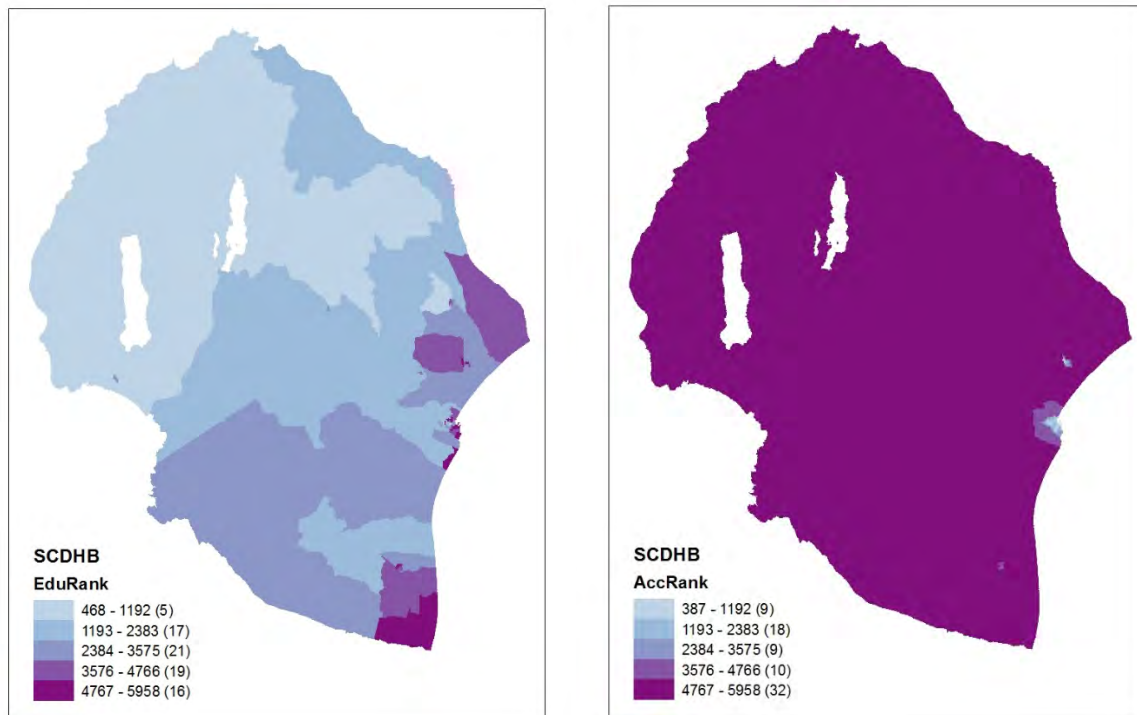


Figure 6. Distribution of education and access deprivation in the SCDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the SCDHB, 20.5% (16/78) of data zones were among NZ's 20% most education deprived, while only 6.4% (5/78) were among the least deprived 20%. The median education deprivation rank in the SCDHB was 3445, 7.8% (466 ranks) worse than the NZ median. Q5 levels of education deprivation occurred in many urban areas and in small towns in the SCDHB such as Temuka, Timaru, Pareora, and Waimate. There was also a large rural Q5 data zone that extended uninterrupted from Tawai to Glenavy up to Morven and Grays Corner.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the SCDHB, 41.0% (32/78) of data zones were among NZ's 20% most access deprived, while 11.5% (9/78) were among NZ's 20% least deprived. The median access deprivation rank in the SCDHB was 3918, 15.8% (939 ranks) worse than the NZ median. High (Q5) levels of access deprivation occurred outside the urban areas of Timaru, Temuka and Waimate.

Age profile of the South Canterbury DHB

According to the 2013 census, the SCDHB had a total population of 55,611 people living in 78 data zones, with a mean of 713 people each (range: 495 to 972).

| Mean data zone proportions for five age groups in the SCDHB | | | | | |
|---|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| South Canterbury DHB | 18.2% | 10.9% | 21.4% | 29.2% | 20.4% |
| New Zealand ²⁴ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -2.2 | -2.9 | -4.2 | 3.4 | 6.1% |

Table 2. Mean data zone proportions for five age groups in the SCDHB

Table 2 shows that the age profile of the SCDHB differs most from the national age profile in that it has 4.2% fewer people aged 25-44 and 6.1% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

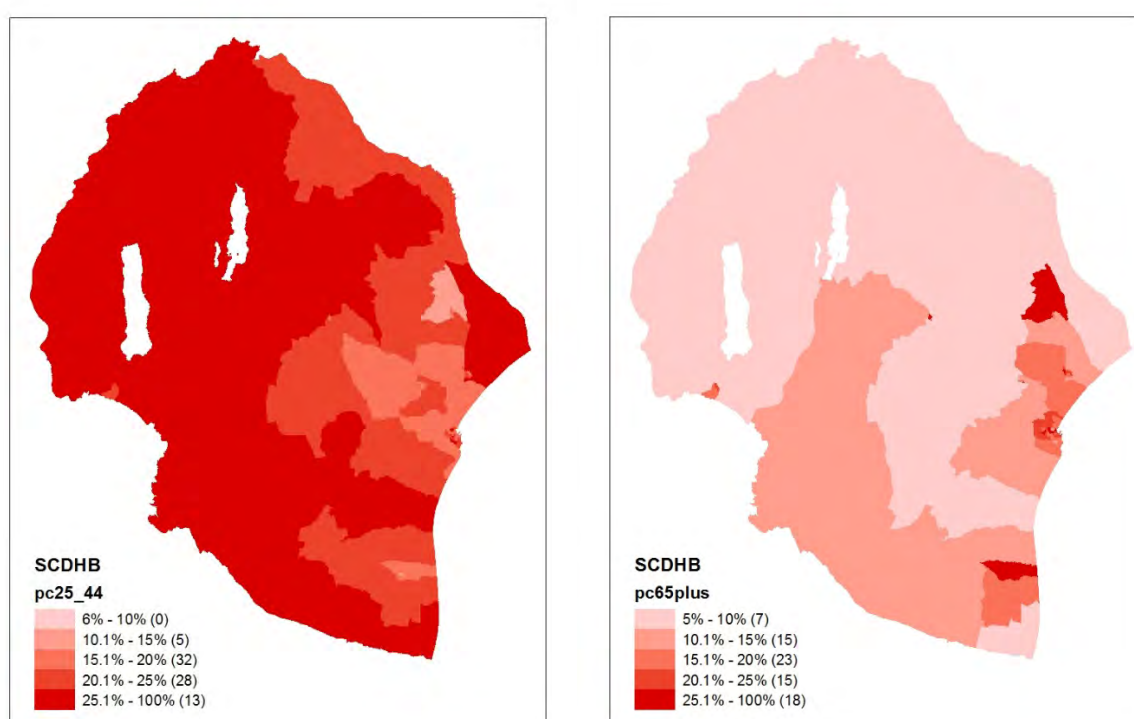


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the SCDHB

Ethnicity profile of the South Canterbury DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the SCDHB in 2013 ranged from 1.7% to 15.8%. The overall proportion of Māori was 7.2%, which was less than half the national proportion of

²⁴ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

14.9%. The proportion of Māori per data zone was greatest in a data zone located in Temuka (15.8%), followed by one in Timaru (13.9%). Data zones with the greatest proportions of Māori (>10%) were located in urban areas such as Parkside, Seaview, Glenwood, Pleasant Point and Temuka.

The proportion of Pacific ethnicity living in data zones within the SCDHB ranged from 0.0% to 4%. The overall proportion of Pacific ethnicity was 0.8%, which is significantly lower than the national proportion of 7.3%. The data zone with the highest proportion of Pacific people was located in Redruth (4.0%), and there are slightly lower proportions in areas such as Timaru, Pareora, Normanby, Temuka and Twizel.

The proportion of New Zealand European and Other ethnicities (NZEO) in the SCDHB ranged from 93.1% to 100%. The overall proportion of NZEO was 97%, much higher than the national proportion of 87.2%, and they were distributed throughout the DHB.

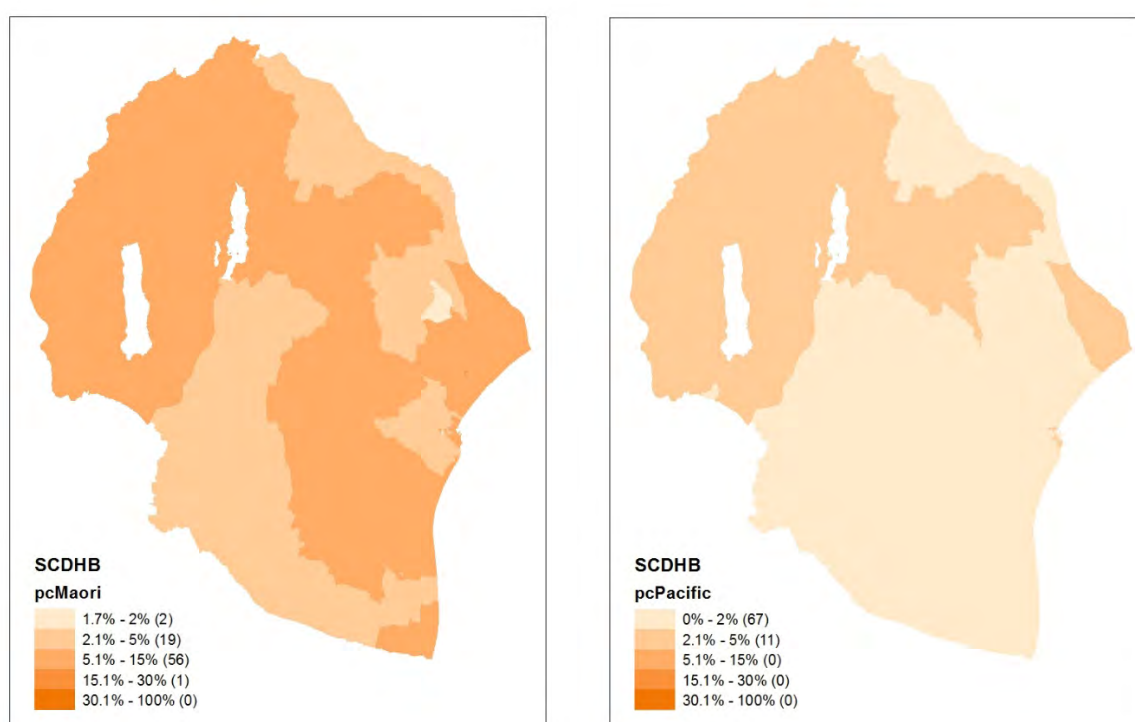
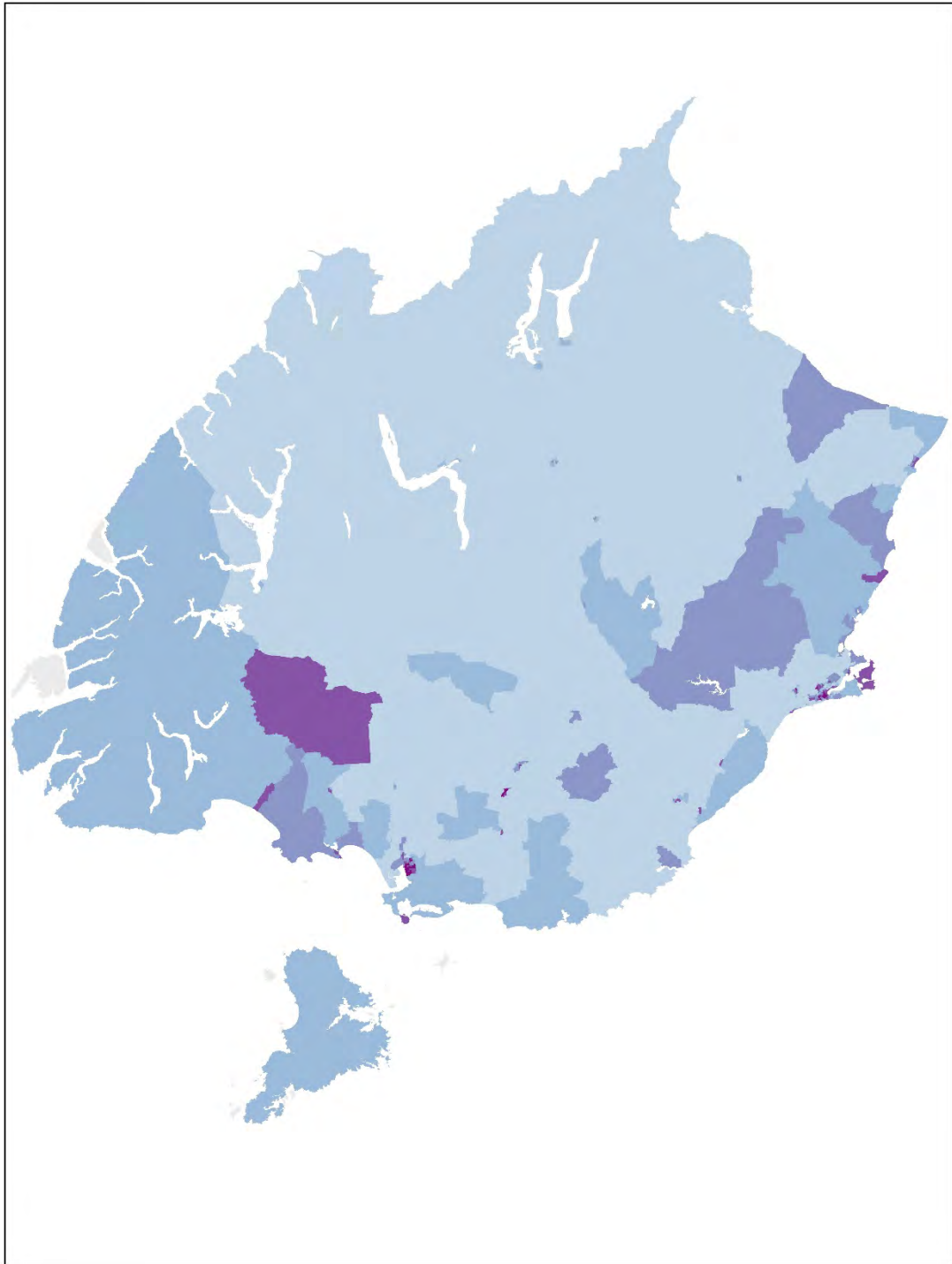


Figure 8. Distribution of Māori and Pacific people in the SCDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](http://www.imd.org.nz).

Southern DHB



Southern DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Southern DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

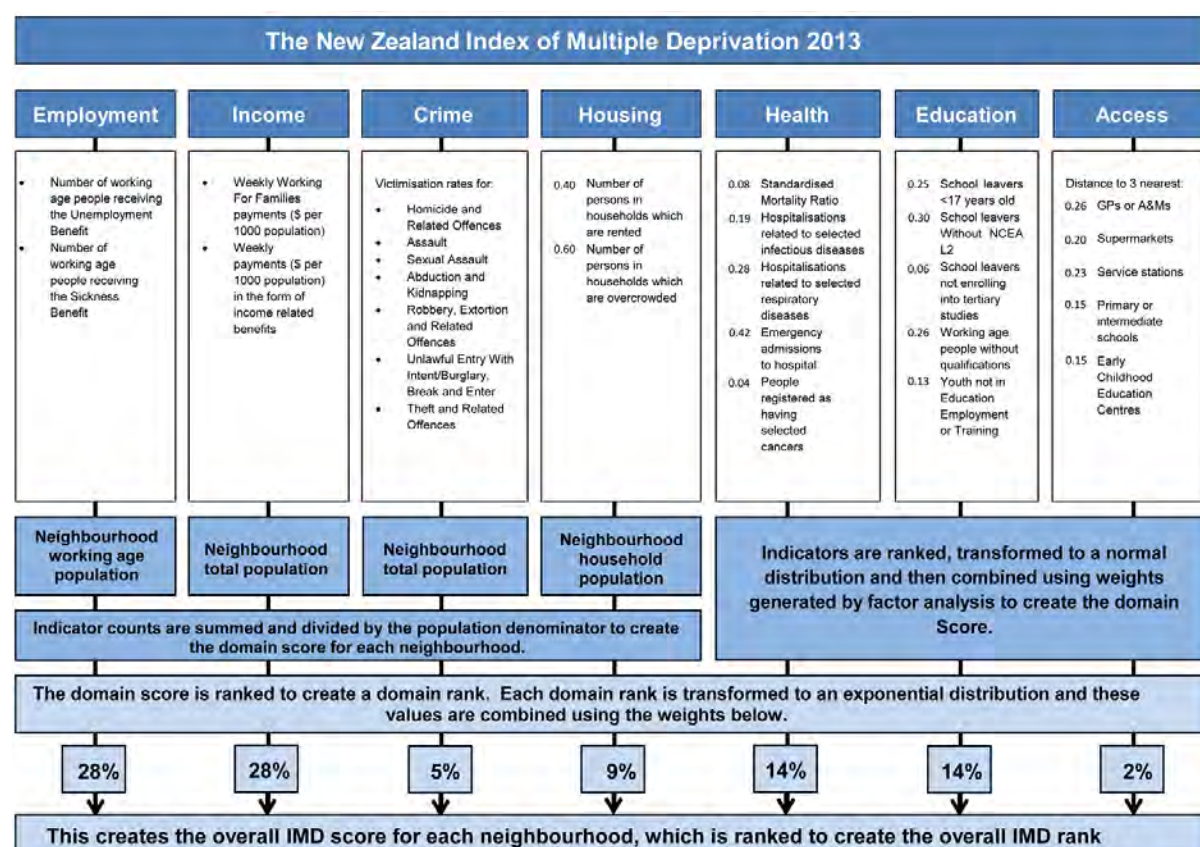


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Southern DHB (SDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same as for all of NZ, we would see 20% of the SDHB's 412 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was significantly less than 20% for overall IMD deprivation and for all domains except Access. The proportion of data zones with Q4 deprivation was also less than 20% for the IMD and all domains except Education. The SDHB has relatively low levels of overall IMD deprivation, with only 25.0% (103/412) of its data zones in Q4 or Q5.

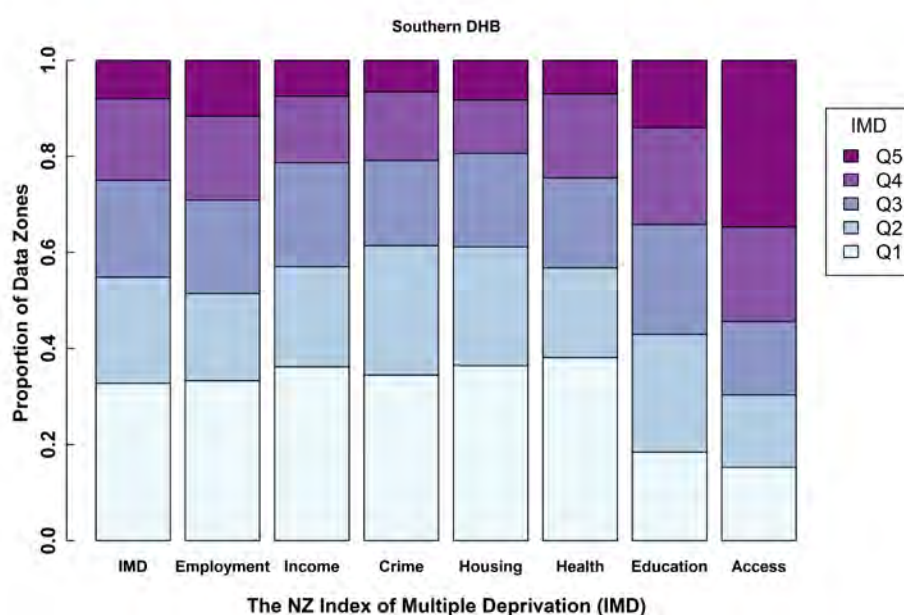


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the SDHB

Table 1 shows summary statistics by domain for 33 SDHB data zones that were among NZ's 20% most deprived for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Education (5477), Employment (5342) and Income (5114) were contributing to overall deprivation in these 33 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ²⁵ deprivation ranks by domain for 33 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4813 | 4066 | 4568 | 2436 | 2672 | 3155 | 2170 | 60 |
| Max | 5801 | 5861 | 5853 | 5821 | 5176 | 5710 | 5885 | 4649 |
| Median | 5188 | 5342 | 5114 | 4195 | 4125 | 4730 | 5477 | 2273 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 33 data zones in the SDHB with Q5 IMD deprivation

²⁵ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

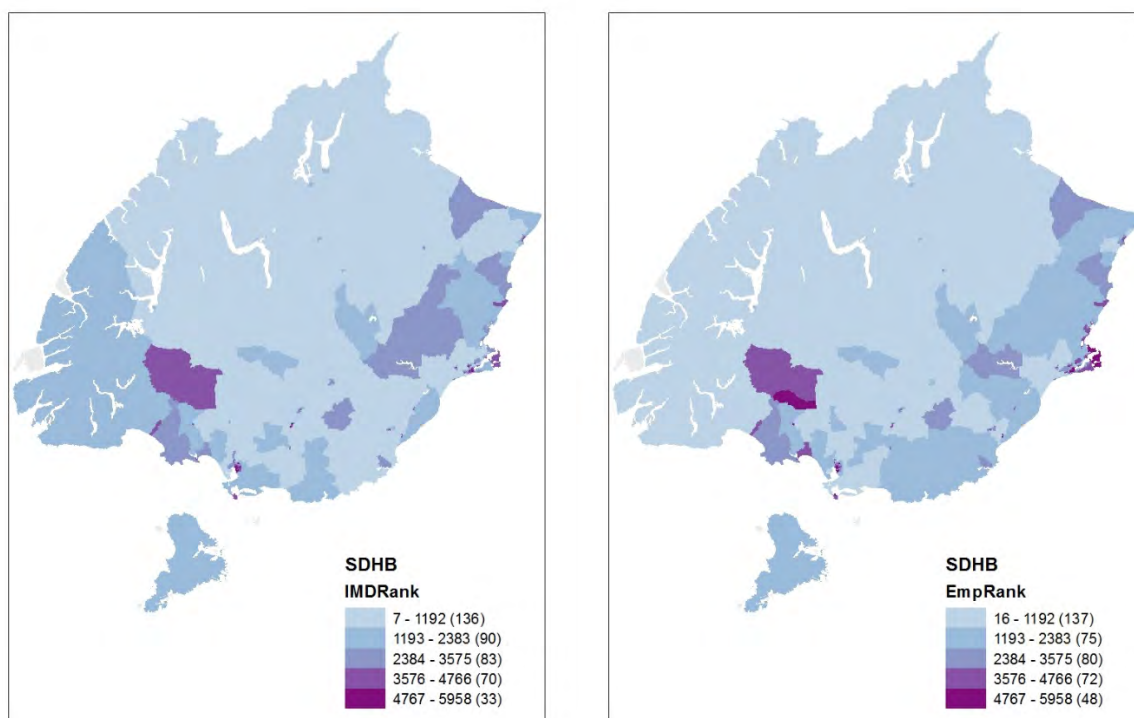


Figure 3. Distribution of overall IMD and employment deprivation in the SDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall (IMD) on the left of Figure 3 shows low levels of Q5 deprivation in the SDHB. Only 8% (33/412) of its data zones were among the most deprived 20% in NZ (Q5), while 32.8% (135/412) were in the least deprived 20% (Q1). The median IMD rank in the SDHB was 2063, 15.4% (916 ranks) better than the NZ median of 2979. Most of the Q5 data zones were concentrated in Invercargill and Dunedin, but there was one in Mosgiel and one in Maitua. There was also a large Q5 rural data zone around Nightcaps and Ohai. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the SDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the SDHB, only 11.7% (48/412) of data zones were among the 20% most employment deprived in NZ, while 33.3% (137/412) of data zones were in the least deprived 20%. The median employment deprivation rank in the SDHB was 2293, 11.5% (686 ranks) better than the NZ median. Q5 employment deprivation followed the general spatial pattern of overall IMD deprivation, but with 15 additional Q5 data zones in places Bluff, Southland, Otago, Heyward Point, Cape Saunders and Kaitangata.

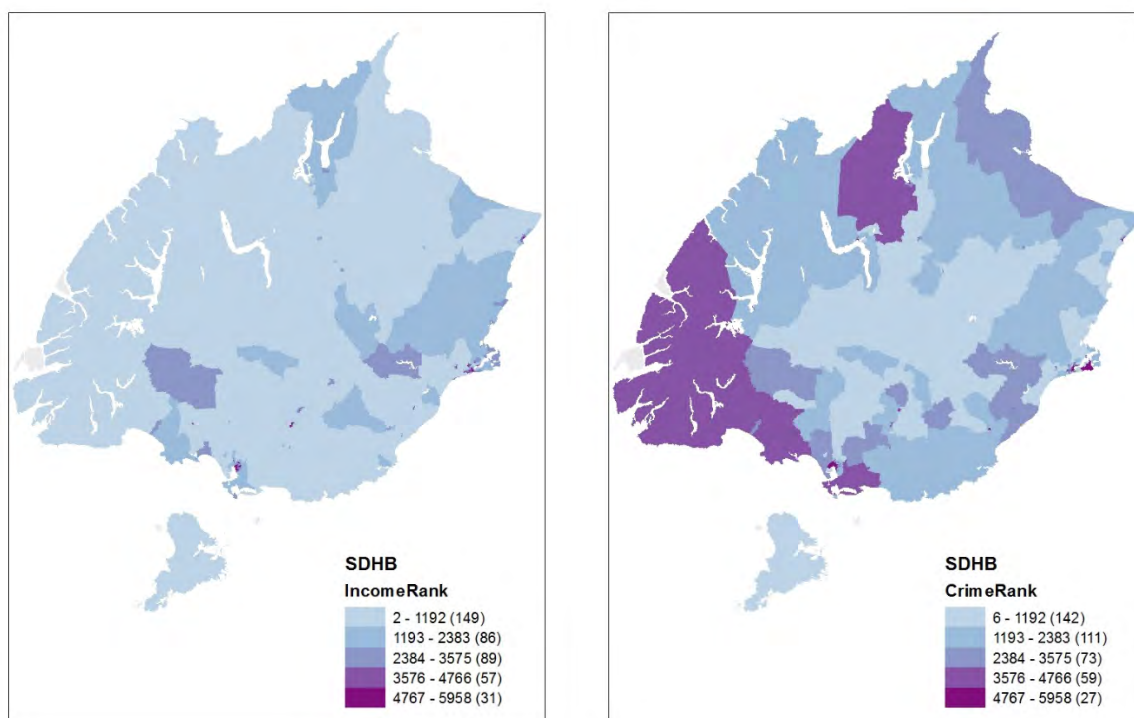


Figure 4. Distribution of income and crime deprivation in the SDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the SDHB, only 7.5% (31/412) of data zones were among the most 20% income deprived, while 36.2% (149/412) were among the 20% least income deprived. The median income deprivation rank in the SDHB was 2000, 16.4% (979 ranks) better than the NZ median. High (Q5) levels of income deprivation closely followed the patterns of Q5 overall deprivation, but there were slightly fewer Q5 income deprived data zones in Dunedin and Invercargill.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the SDHB, only 6.6% (27/412) of data zones were in the most deprived 20%, while 34.5% (142/412) were in the least deprived 20%. The median crime deprivation rank in the SDHB was 1957, 17.2% (1022 ranks) better than the NZ median. Data zones with high (Q5) levels of crime deprivation were located primarily in Dunedin, Invercargill and a few small towns like Balclutha, Gore, Queenstown and Wanaka.

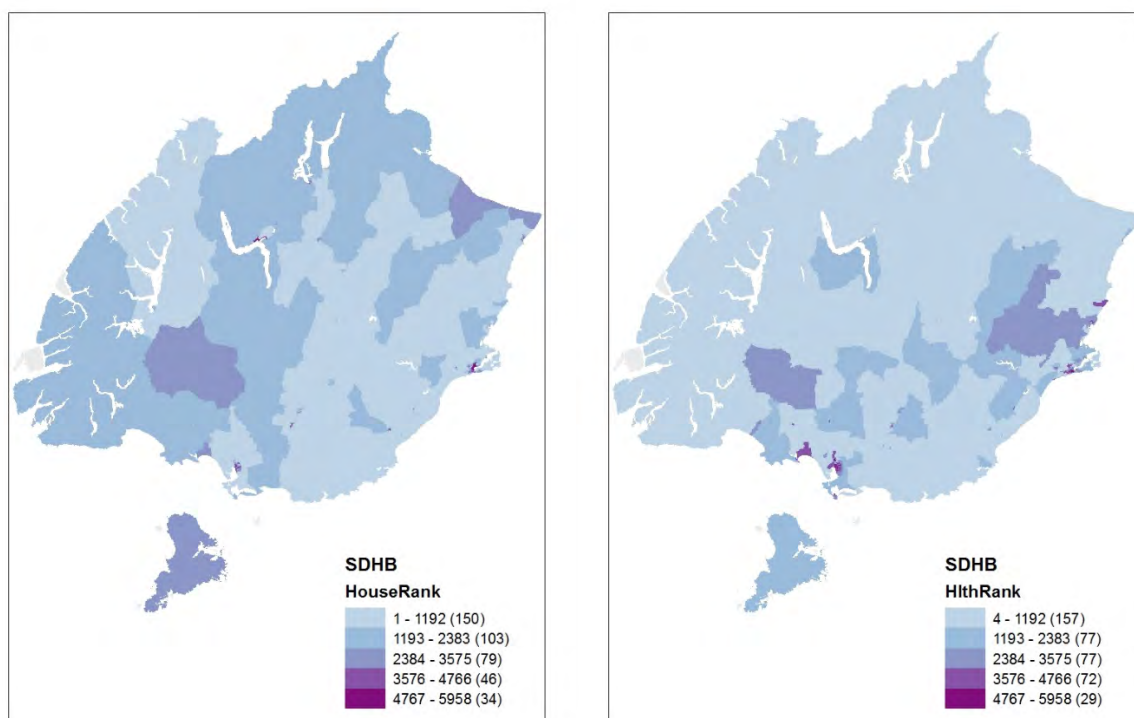


Figure 5. Distribution of housing and health deprivation in the SDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and in rented dwellings (40%). In the SDHB, only 8.3% (34/412) of data zones were among the 20% most deprived in NZ, while 36.4% (150/412) were among the least deprived 20%. The median housing deprivation rank in the SDHB was 1740, 20.8% (1240 ranks) better than the NZ median. High (Q5) levels of housing deprivation occurred mostly in Dunedin and Queenstown, but there were two Q5 data zones located in Invercargill.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the SDHB, only 7% (29/412) of data zones were among the 20% most health deprived in NZ, while 38.1% (157/412) were among the least deprived 20%. The median health deprivation rank in the SDHB was 1859, 18.8% (1120 ranks) better than the NZ median. High (Q5) levels of health deprivation closely followed the pattern of Q5 overall IMD deprivation, but data zones in Invercargill and Dunedin were less concentrated, and there were no large rural data zones with Q5 health deprivation.

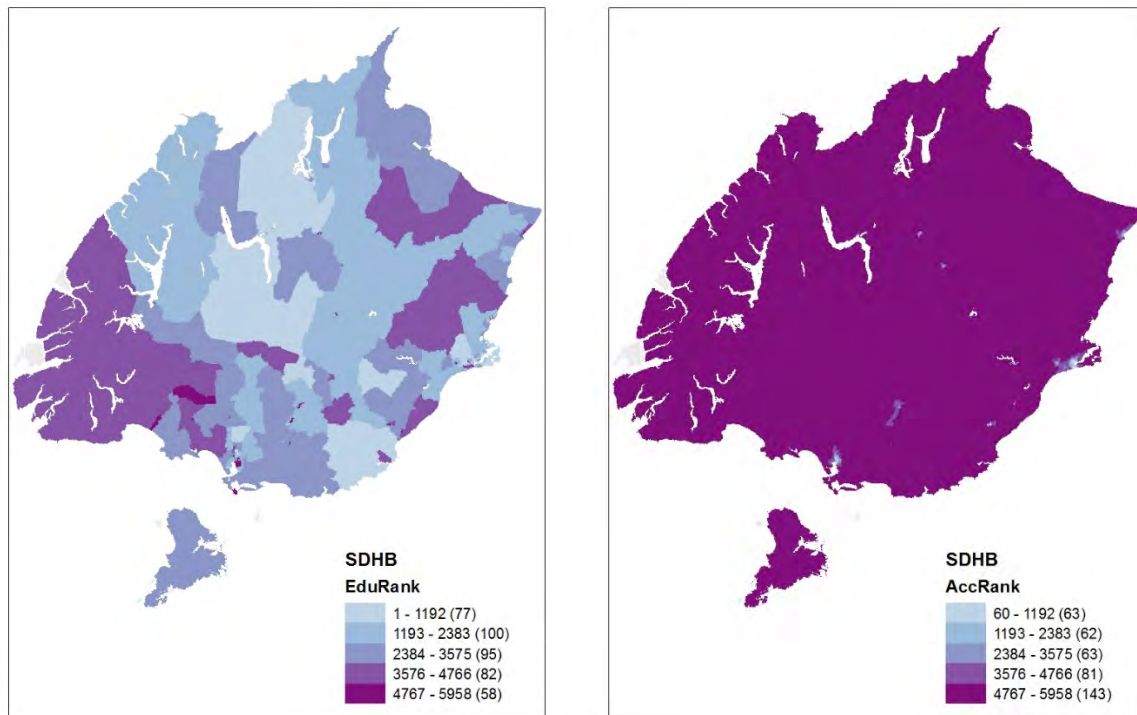


Figure 6. Distribution of education and access deprivation in the SDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the SDHB, only 14.1% (58/412) of data zones were among NZ's 20% most education deprived, while 18.4% (76/412) were among the least deprived 20%. The median education deprivation rank in the SDHB was 2758, 3.7% (221 ranks) better than the NZ median. Data zones with Q5 levels of education deprivation occurred throughout the SDHB, including in Dunedin and Invercargill, but also in many small towns such as Oamaru, Cromwell, Roxburgh and Tuatapere.

The Access Domain measures the distance from the population weighted centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the SDHB, 34.7% (143/412) of data zones were among NZ's 20% most access deprived, while 15.3% (63/412) were in NZ's 20% least deprived. The median access deprivation rank in the SDHB was 3891, 15.3% (912 ranks) worse than the NZ median. High (Q5) levels of access deprivation occurred outside the main urban areas of Invercargill, Dunedin, Queenstown and Oamaru.

Age profile of the SDHB

According to the 2013 census, the SDHB had a total population of 297,453 people living in 412 data zones, with a mean of 722 people each (range: 381 to 999).

| Mean data zone proportions for five age groups in the SDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Southern DHB | 18.3% | 15.3% | 24.3% | 26.4% | 15.7% |
| New Zealand ²⁶ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -2.1% | 1.5% | -1.3% | 0.6% | 1.4% |

Table 2. Mean data zone proportions for five age groups in the SDHB

Table 2 shows that the age profile of the SDHB differs most from the national age profile in that it has 2.1% fewer children aged 0-14 and 1.5% more people aged 15-24. Figure 7 shows the distribution of people in these two age groups.

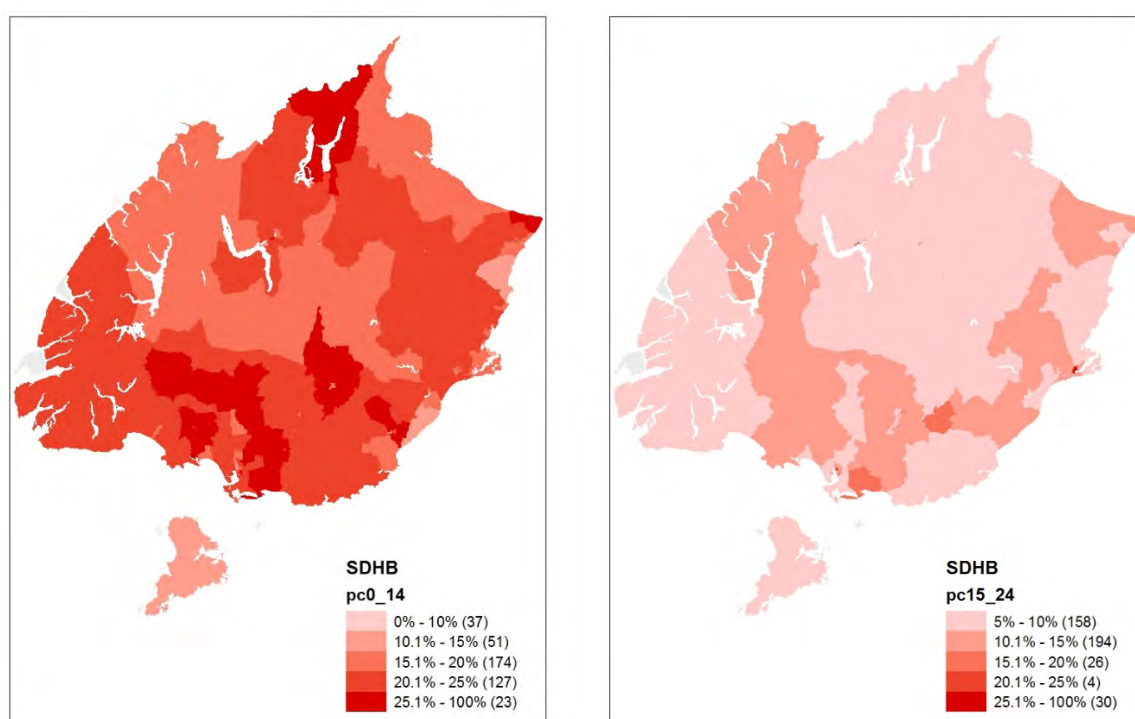


Figure 7. Distribution of children aged 0-14 and people aged 15-24 in the SDHB

Ethnicity profile of the Southern DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the SDHB in 2013 ranged from 2.2% to 45.2%. The overall proportion of Māori in the SDHB was 9.2%, which was lower than the national

²⁶ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

proportion of 14.9%. The proportion of Māori per data zone was greatest in two data zones in Bluff (45.2% and 43.3%), followed by Invercargill (31.1%) and Mataura (30.6%).

The proportion of Pacific ethnicity living in data zones within the SDHB ranged from 0.0% to 13.3%. The overall proportion of Pacific ethnicity in the SDHB was 2.0%, which is approximately three times less than the national proportion of 7.3%. A data zone located in Heidelberg had the greatest proportion of Pacific (13.3%), and there were high proportions (>7%) in Invercargill, Dunedin and Cromwell.

The percentage of New Zealand European and Other ethnicities (NZE0) in the SDHB ranged from 72.2% to 100%. The overall proportion of NZEO in the SDHB was 95.8%, which was higher than the national proportion of 87.5%. The lowest proportion of NZEO occurred in a data zone located in Invercargill (72.2%).

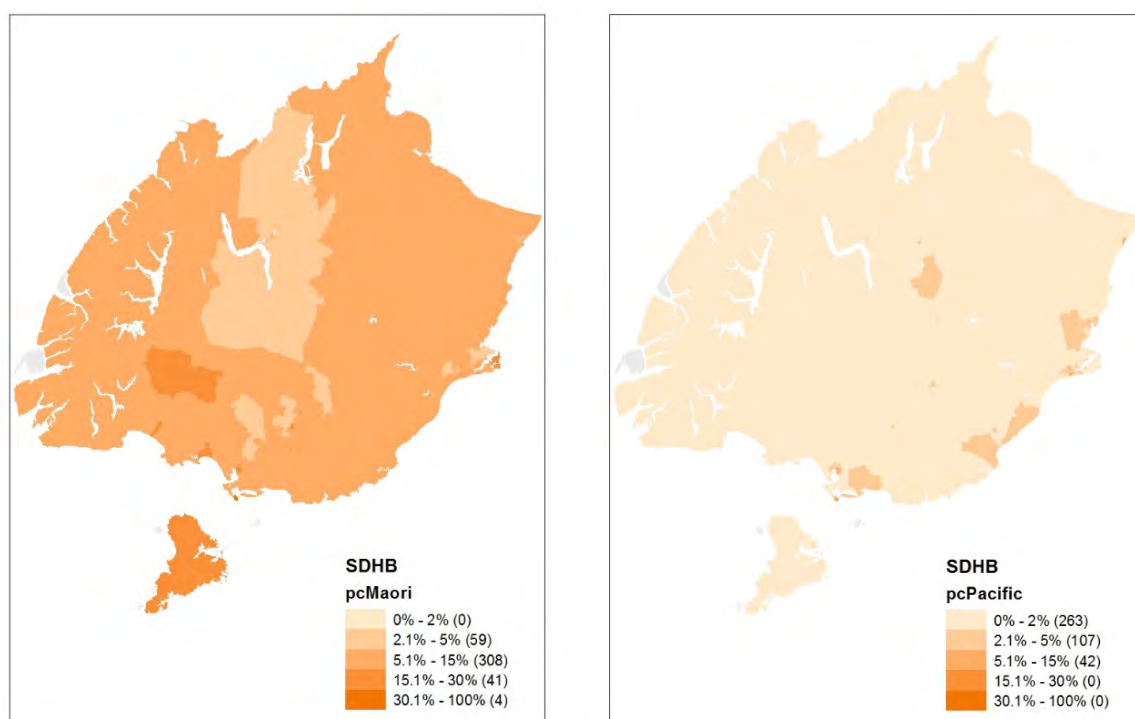
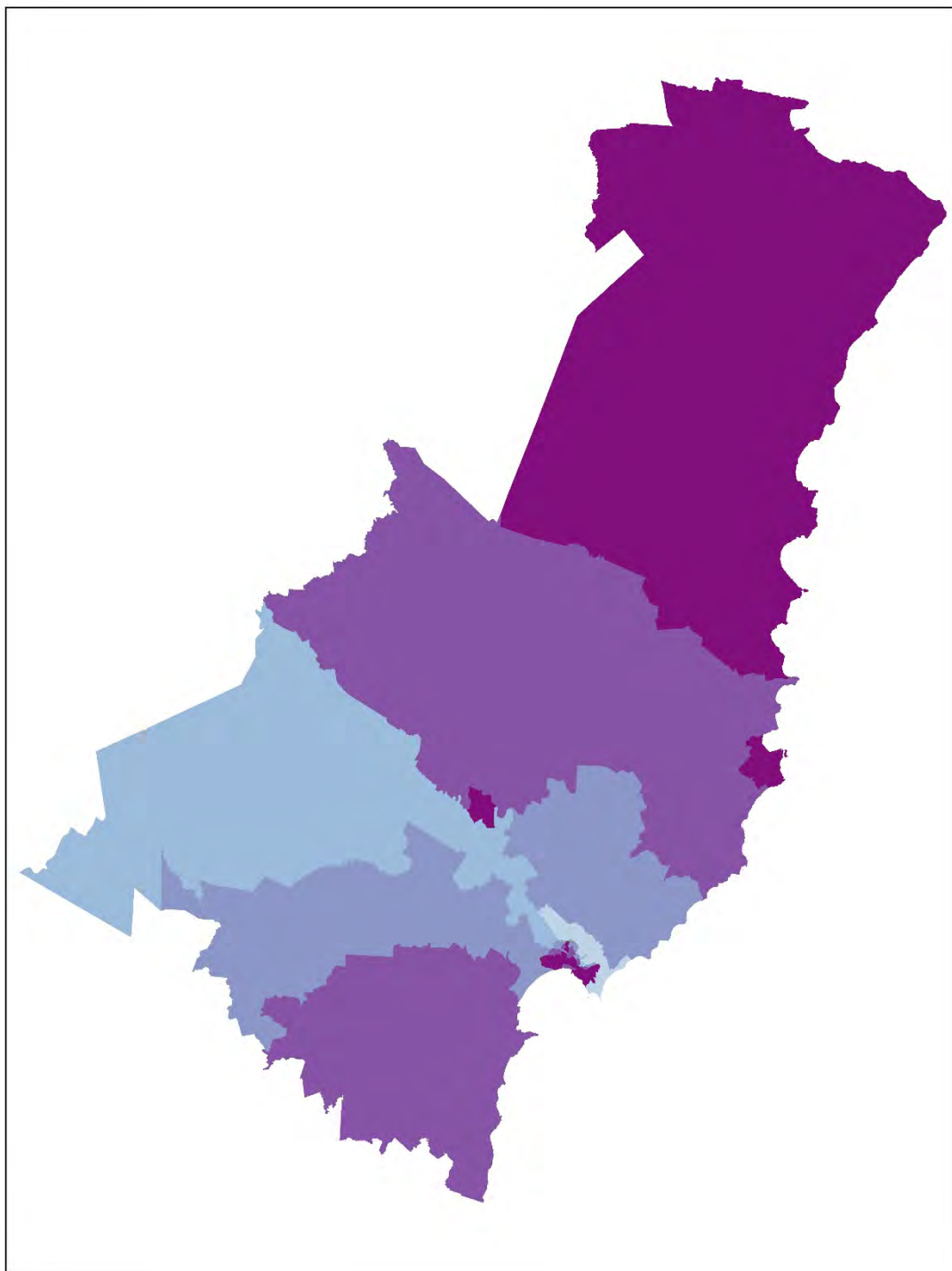


Figure 8. Distribution of Māori and Pacific people in the SDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](https://www.imd.org.nz/).

Tairāwhiti DHB



Tairāwhiti DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Tairāwhiti DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level, using custom data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, data zones can be just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

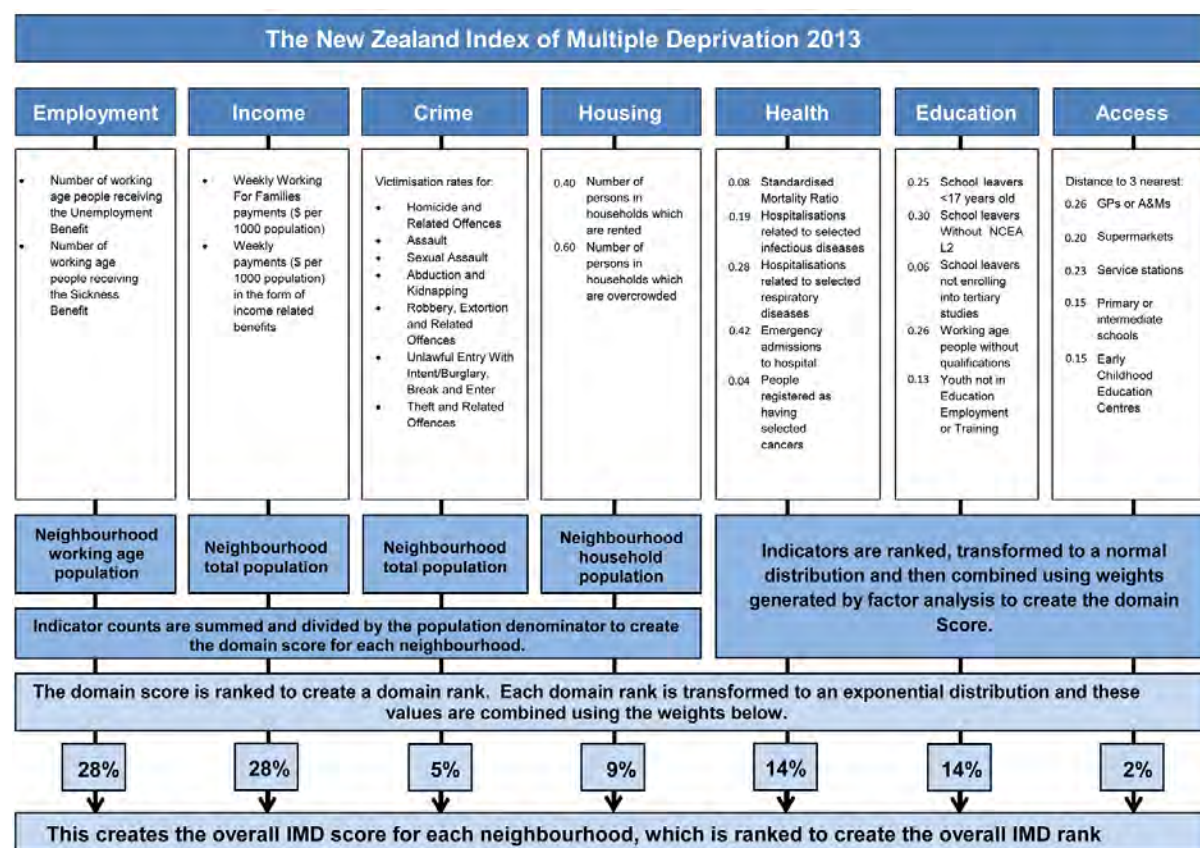


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Tairāwhiti DHB (TDHB) that belong to each deprivation quintile for overall deprivation (IMD) and the seven domains in 2013. If the deprivation circumstances in the TDHB were the same as all of NZ, we would see 20% of the TDHB's 64 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was significantly greater than 20% for overall IMD deprivation and for all domains. The proportion of data zones with Q4 deprivation was also greater than 20% for the IMD and all domains except Employment and Access. The TDHB had very high levels of overall IMD deprivation, with 67.2% (43/64) of its data zones in Q4 or Q5.

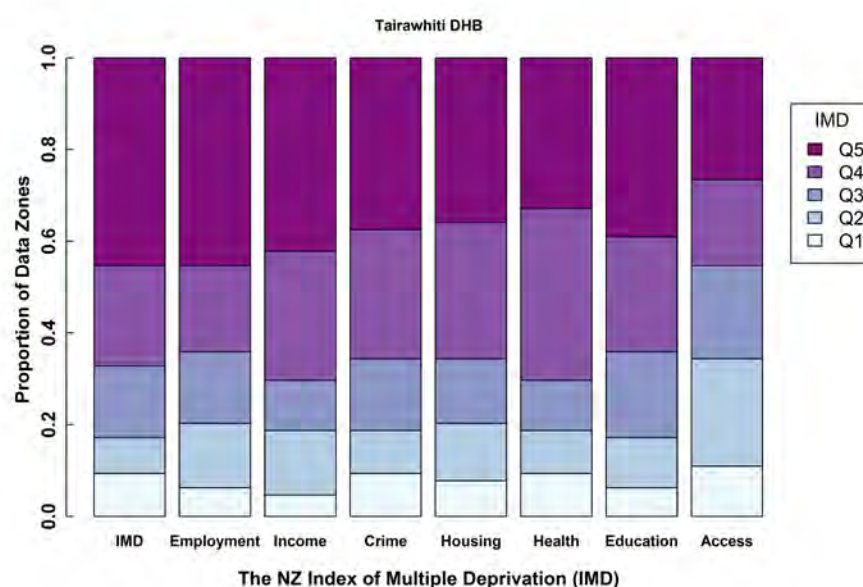


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the TDHB

Table 1 shows summary statistics by domain for 29 TDHB data zones that were among NZ's 20% most deprived for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Income (5473), Employment (5433), Education (5390), Crime (5310), Housing (5232) and Health (5054) were contributing to overall IMD deprivation in these data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ²⁷ deprivation ranks by domain for 29 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4882 | 4509 | 4521 | 2669 | 4393 | 3188 | 4181 | 121 |
| Max | 5935 | 5928 | 5913 | 5949 | 5814 | 5621 | 5927 | 5918 |
| Median | 5500 | 5433 | 5473 | 5310 | 5232 | 5054 | 5390 | 2786 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 29 data zones in the TDHB with Q5 IMD

²⁷ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

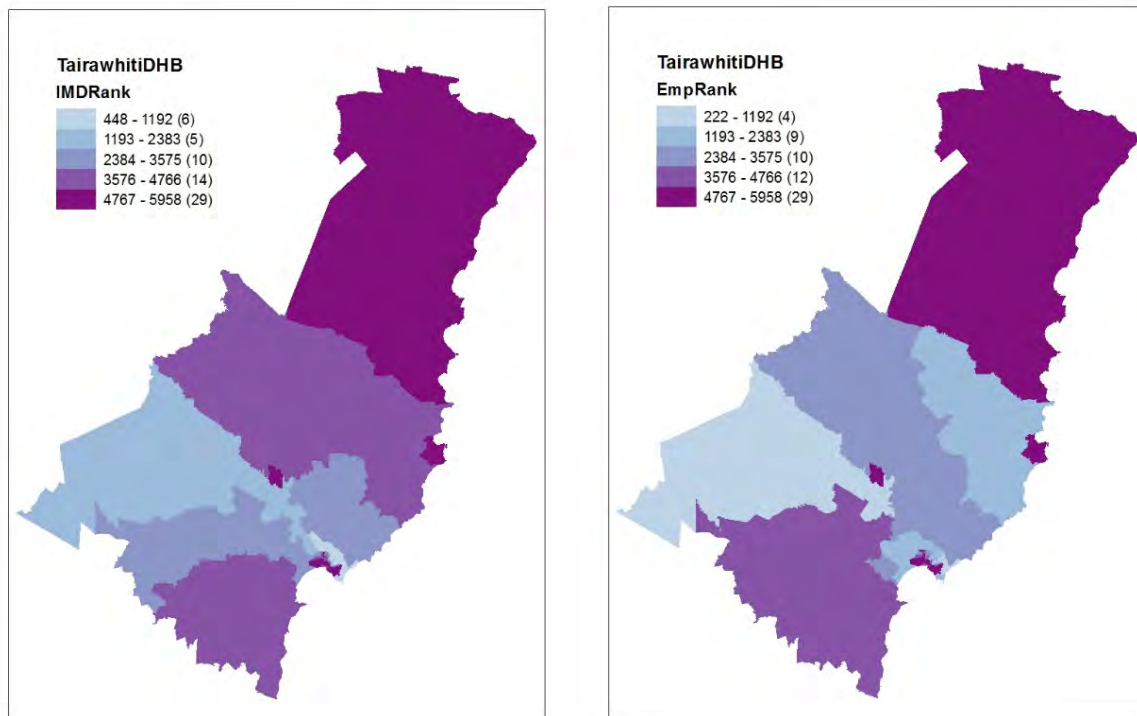


Figure 3. Distribution of overall IMD and employment deprivation in the TDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall (IMD) on the left of Figure 3 shows very high levels of Q5 deprivation in the TDHB. 45.3% (29/64) of its data zones were among the most deprived 20% in NZ (Q5), while only 6% (9/64) were in the least deprived 20%. The median IMD rank in the TDHB was 4415, 24.1% (1436 ranks) worse than the NZ median of 2979. Most of the Q5 data zones were concentrated in the south-western part of the DHB around Gisborne, but they also occurred in Te Karaka, Tolaga Bay and in northern parts extending uninterrupted from Tōtaranui to Aorangi and Potaka. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the TDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the TDHB, 45.3% (29/64) of data zones were among the 20% most deprived in NZ for the Employment Domain, while only 6.3% (4/64) of data zones were in the least deprived 20%. The median employment deprivation rank in the TDHB was 4505, 25.6% (1526 ranks) worse than the NZ median. Q5 employment deprivation had a similar spatial pattern to overall IMD deprivation and the same number of Q5 data zones.

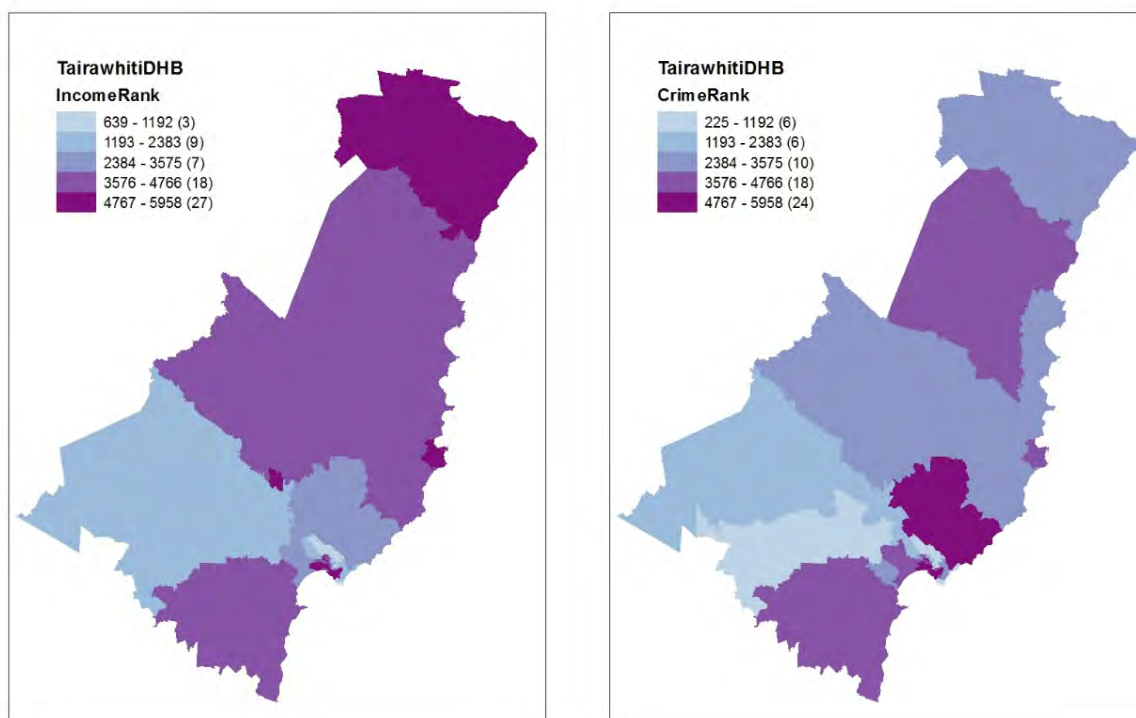


Figure 4. Distribution of income and crime deprivation in the TDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the TDHB, 42.2% (27/64) of data zones were among NZ's 20% most income deprived, while only 4.7% (3/64) of data zones were among the 20% least income deprived. The median income deprivation rank in the TDHB was 4555, 26.4 % (1576 ranks) worse than the NZ median. High (Q5) levels of income deprivation followed the general pattern of the overall IMD, but there were fewer Q5 income deprived data zones in Aorangi and Tōtaranui.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the TDHB, 37.5% (24/64) of data zones were among the most deprived 20% for the Crime Domain, while only 9.4% (6/64) were among the least deprived 20%. The median crime deprivation rank in the TDHB was 4448, 24.6% (1469 ranks) worse than the NZ median. High (Q5) crime deprivation was concentrated in the urban area of Gisborne, but there was also a large rural data zone with Q5 crime deprivation stretching from Waimata and Kaitaratahi to Makorori and Pouawa.

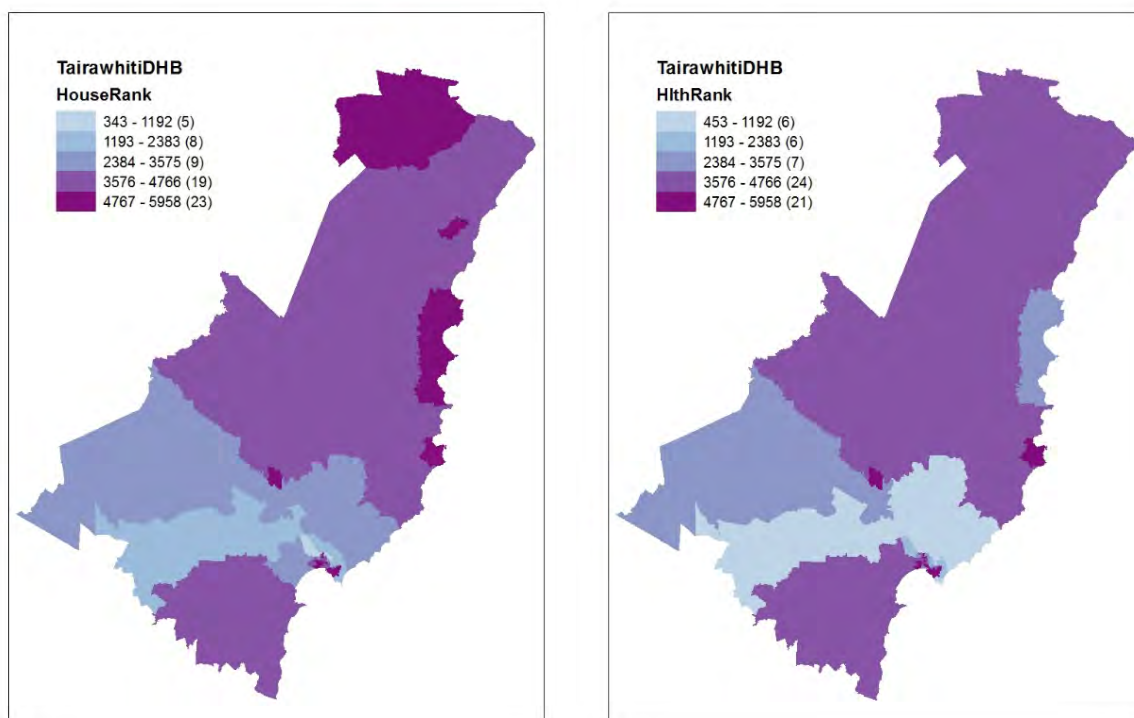


Figure 5. Distribution of housing and health deprivation in the TDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%). In the TDHB, 35.9% (23/64) of data zones were among the most deprived 20% in NZ, while only 7.8% (5/64) of data zones were among the least deprived 20%. The median housing deprivation rank in the TDHB was 4405, 23.9% (1426 ranks) worse than the NZ median. These high (Q5) levels of housing deprivation were concentrated around Gisborne in Awapuni, Elgin, Riverdale, Inner Kaiti and Outer Kaiti. Data zones with Q5 housing deprivation were also located in Te Karaka, Tolaga Bay, Hikuwai, Ruatoria and the northern part of the DHB encompassing Hicks Bay and Potaka.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the TDHB, 32.8% (21/64) of data zones were among the 20% most health deprived in NZ, while only 9.4% (6/64) were among the least deprived 20%. The median health deprivation rank in the TDHB was 4026, 17.6% (1047 ranks) worse than the NZ median. High (Q5) levels of health deprivation were concentrated around Gisborne but also occurred in Te Karaka.

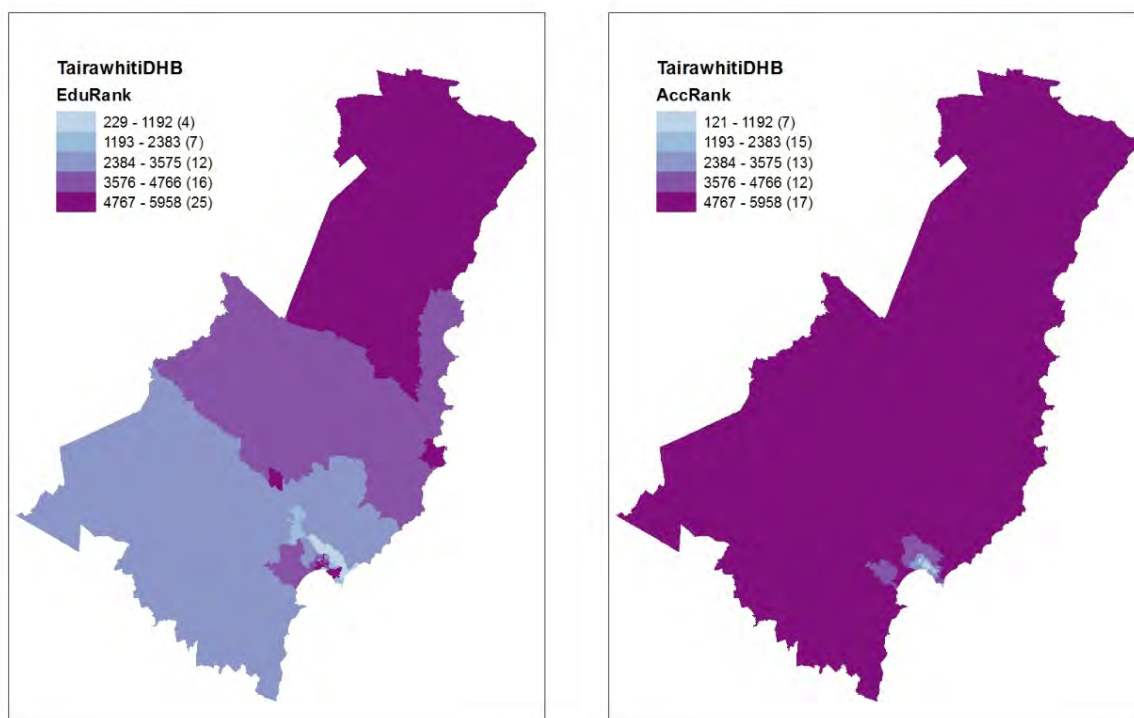


Figure 6. Distribution of education and access deprivation in the TDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the TDHB, 39.1% (35/64) of data zones were among NZ's 20% most education deprived, while only 6.3% (4/64) were among the least deprived 20%. The median education deprivation rank in the TDHB was 4479, 25.2% (1500 ranks) worse than the NZ median. Q5 levels of education deprivation followed the general pattern of overall IMD deprivation, but with six more data zones. However, there were no Q5 education deprived data zones in Mangahauini, Hikuwai and Anaura Bay.

The Access Domain measures the distance from the population weighted centre of each data zone to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the TDHB, 26.6% (17/64) of data zones were among NZ's 20% most access deprived, while 10.9% (7/64) were among NZ's 20% least deprived. The median access deprivation rank in the TDHB was 3390, 6.9% (411 ranks) worse than the NZ median. High (Q5) levels of access deprivation occurred in all rural parts of the TDHB.

Age profile of the Tairāwhiti DHB

According to the 2013 census, the TDHB had a total population of 43,653 people living in 64 data zones, with a mean of 682 people each (range: 513 to 954).

| Mean data zone proportions for five age groups in the TDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Tairāwhiti | 24.6% | 12.7% | 22.9% | 25.8% | 14.0% |
| New Zealand ²⁸ | 20.4% | 13.8% | 25.6% | 25.0% | 14.3% |
| Difference | 4.2% | -1.1% | -2.7% | 0.0% | -0.3% |

Table 2. Mean data zone proportions for five age groups in the TDHB

Table 2 shows that the age profile of the TDHB differs most from the national age profile in that it has 4.2% more children aged 0-14 and 2.7% fewer people aged 25-44. Figure 7 shows the distribution of people in these two age groups.

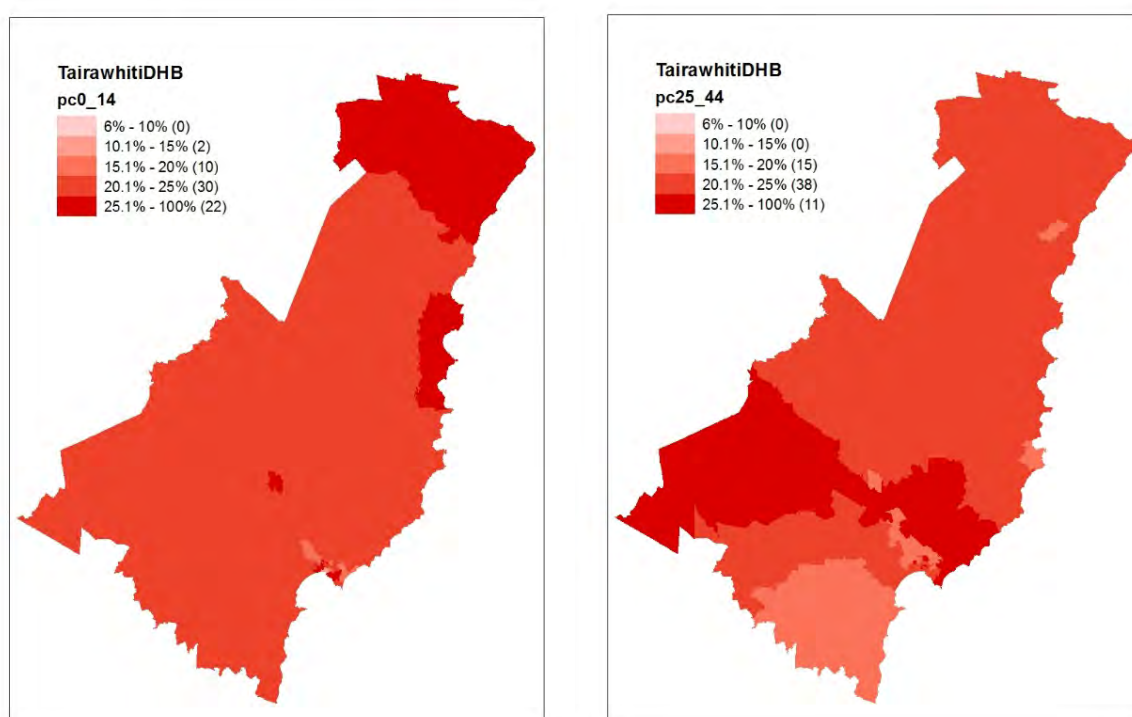


Figure 7. Distribution of people aged 0-14 and people aged 25-44 in the TDHB

Ethnicity profile of the Tairāwhiti DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in

²⁸ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

data zones within the TDHB in 2013 ranged from 11.8% to 93.5%. The overall proportion of Māori in the TDHB was 48.9%, which was significantly greater than the national proportion of 14.9%. The highest proportions of Māori (>50%) were concentrated in Gisborne and in rural areas in the north of the TDHB. Ruatoria had the three highest proportions of Māori per data zone (93.5%, 92% and 88.1%).

The proportion of Pacific ethnicity living in data zones within the TDHB ranged from 0.0% to 15.2%. The overall proportion of Pacific in the TDHB was 3.8%, lower than the national proportion of 7.3%. The greatest proportions of Pacific (>8%) were concentrated in Gisborne, in Outer Kaiti and Inner Kaiti. An Inner Kaiti data zone had the greatest proportion of Pacific (15.2%).

The percentage of New Zealand European and Other ethnicities (NZE0) in the TDHB ranged from 20.0% to 95.9%. The overall proportion of NZEO in the TDHB was 64.4%, significantly lower than the national proportion of 87.5%. The lowest proportions of NZEO (<30%) lived in data zones located in Outer Kaiti, Tolaga Bay and in the northern part of the DHB.

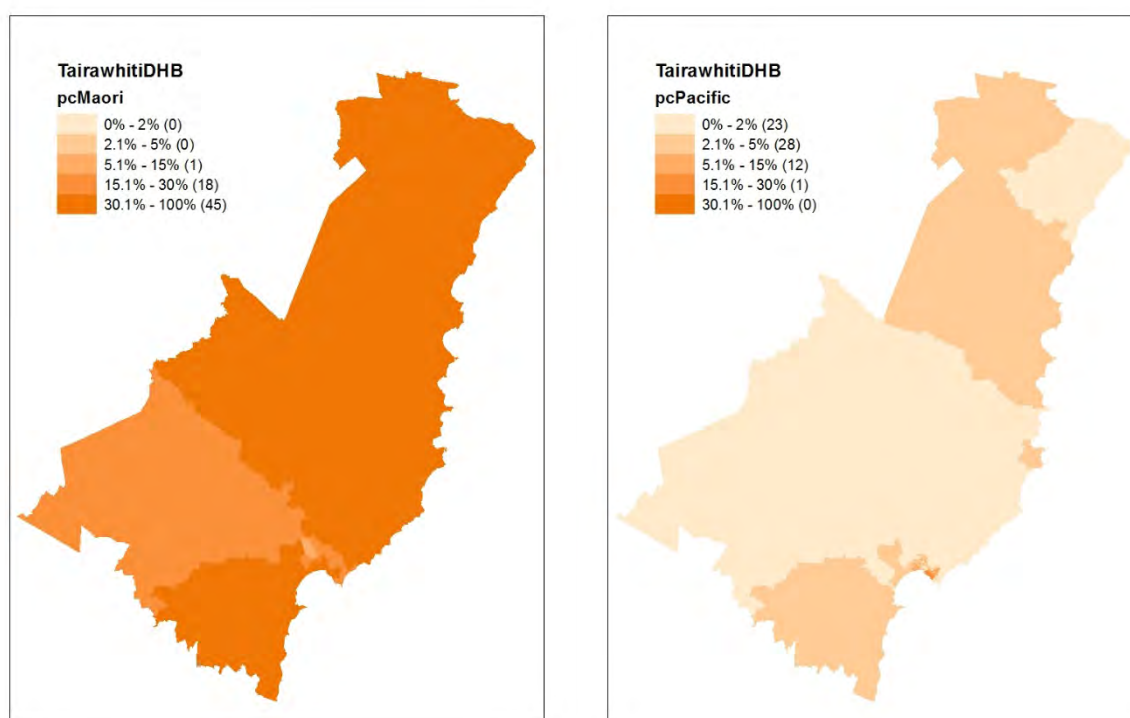
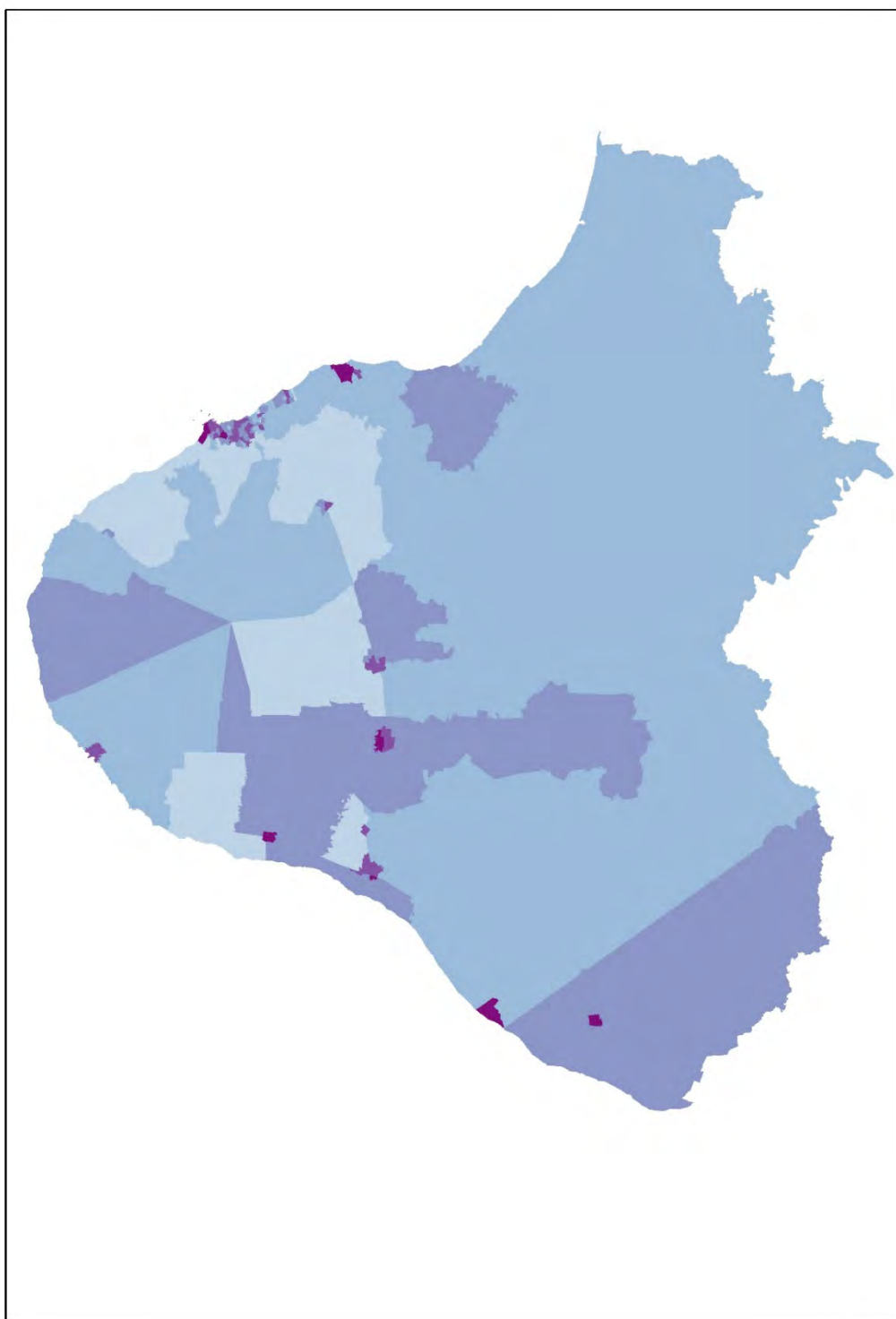


Figure 8. Distribution of Māori and Pacific people in the TDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Taranaki DHB



Taranaki DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Taranaki DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

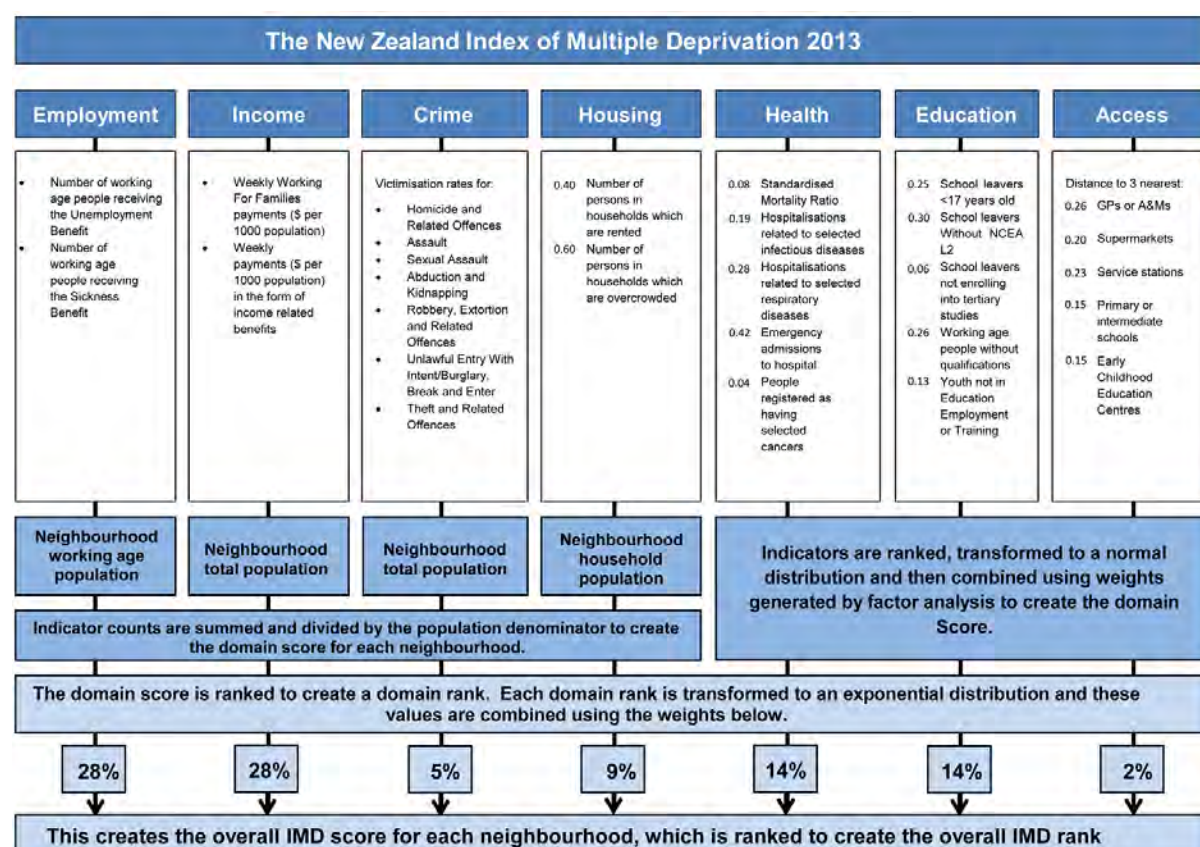


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Taranaki DHB (TDHB) that belonged to each deprivation quintile for overall deprivation (IMD) and the seven domains in 2013. If the deprivation circumstances in the TDHB were the same as all of NZ, we would see 20% of the TDHB's 156 data zones in each quintile. Figure 2 shows that the proportion of data zones with Q5 overall IMD deprivation was less than 20% for all domains, except for Education and Access, while the proportion of data zones with Q4 deprivation was greater than 20% for overall IMD deprivation and all domains except Employment, Crime and Housing. The TDHB has moderate levels of overall IMD deprivation, with 35.9% (56/156) of its data zones in Q4 or Q5.

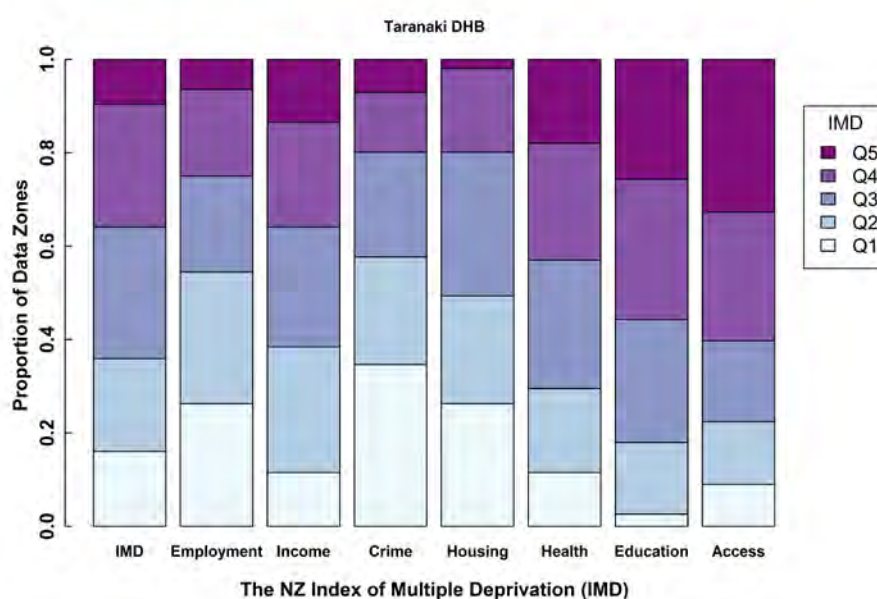


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the TDHB

Table 1 shows summary statistics by domain for the 15 TDHB data zones that were among NZ's 20% most deprived (Q5) for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Education (5670), Income (5298) and Health (5015) and Employment (4941) were contributing to high overall IMD deprivation in these 15 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ²⁹ deprivation ranks by domain for 15 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4956 | 3954 | 4341 | 2857 | 3286 | 4627 | 4969 | 1807 |
| Max | 5676 | 5647 | 5835 | 5128 | 4977 | 5661 | 5816 | 5729 |
| Median | 5217 | 4941 | 5298 | 3714 | 4096 | 5015 | 5670 | 3912 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 15 data zones in the TDHB with Q5 IMD deprivation

²⁹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

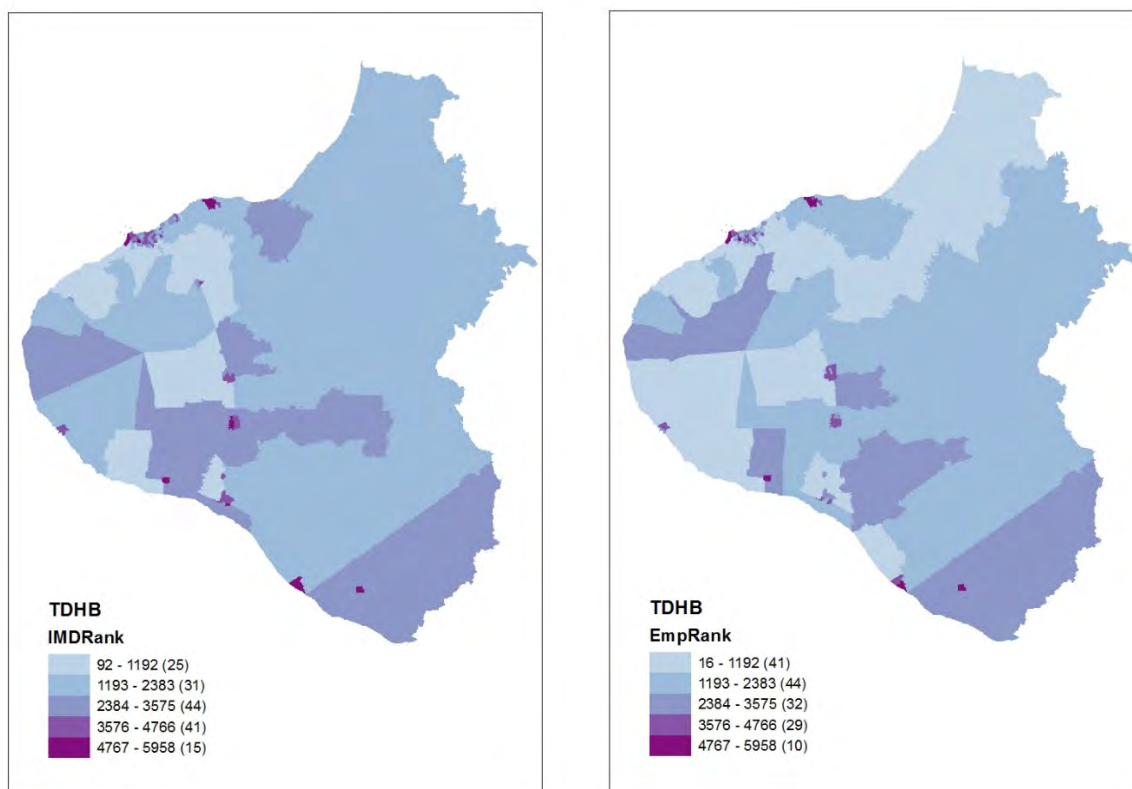


Figure 3. Distribution of overall IMD and employment deprivation in the TDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall (IMD) on the left of Figure 3 shows moderate levels of Q5 deprivation in the TDHB. Only 9.6% (15/156) of its data zones were among the most deprived 20% in NZ (Q5), while 16% (25/156) were among the least deprived 20%. The median IMD rank was 2949, 0.5% (30 ranks) better than the NZ median of 2979. Most of the Q5 data zones were concentrated in the northwestern part of the DHB in places such as Waitara and New Plymouth, but they also occurred in Eltham, Manaia, Hawera, Patea and Waverley. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the TDHB further.

The map of the Employment Domain on the right of Figure 2 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the TDHB, only 6.4% (10/156) of data zones were among the 20% most employment deprived in NZ, while 26.3% (41/156) of data zones were in the least deprived 20%. The median employment deprivation rank in the TDHB was 2170, 13.6% (809 ranks) better than the NZ median. Q5 employment deprivation followed the general pattern of overall IMD deprivation, but with fewer Q5 data zones in places like Eltham and Hawera.

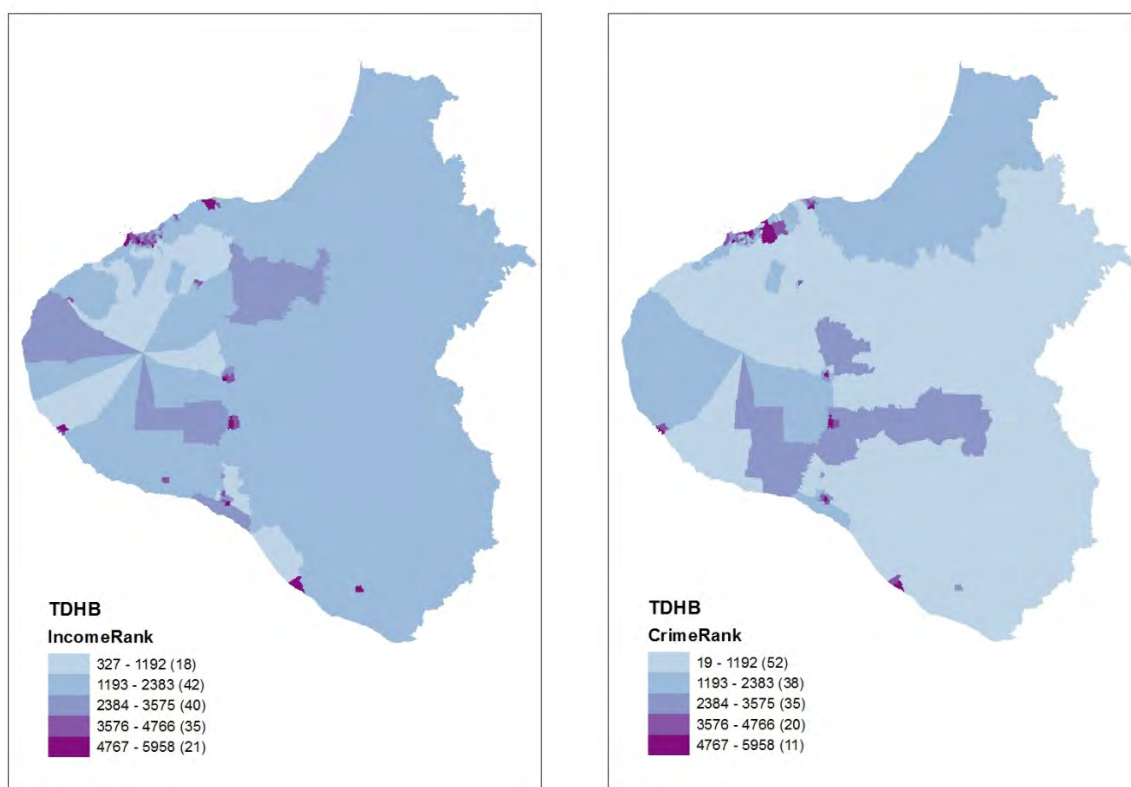


Figure 4. Distribution of income and crime deprivation in the TDHB

The Income Domain measures the amount of money per person paid by the State in the form of Working for Families payments and income-tested benefits. In the TDHB, 13.5% (21/156) of data zones were among NZ's 20% most income deprived, while 11.5% (18/156) of data zones were among the 20% least income deprived. The median income deprivation rank in the TDHB was 3118, 2.3% (139 ranks) worse than the NZ median. High (Q5) levels of income deprivation closely followed the pattern of Q5 overall deprivation, except there were a few more Q5 income deprived data zones in Cardiff, Opunake and Ferndale.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the TDHB, only 7.1% (11/156) of data zones were among the most deprived 20% for the Crime Domain, while 34.6% (54/156) were among the least deprived 20%. The median crime deprivation rank in the TDHB was 1892, 18.2% (1087 ranks) better than the NZ median. High (Q5) crime deprivation occurred in Hillsborough, New Plymouth, Spotswood and other towns such as Stratford, Waitara, Eltham, Hawera, Patea and Opunake.

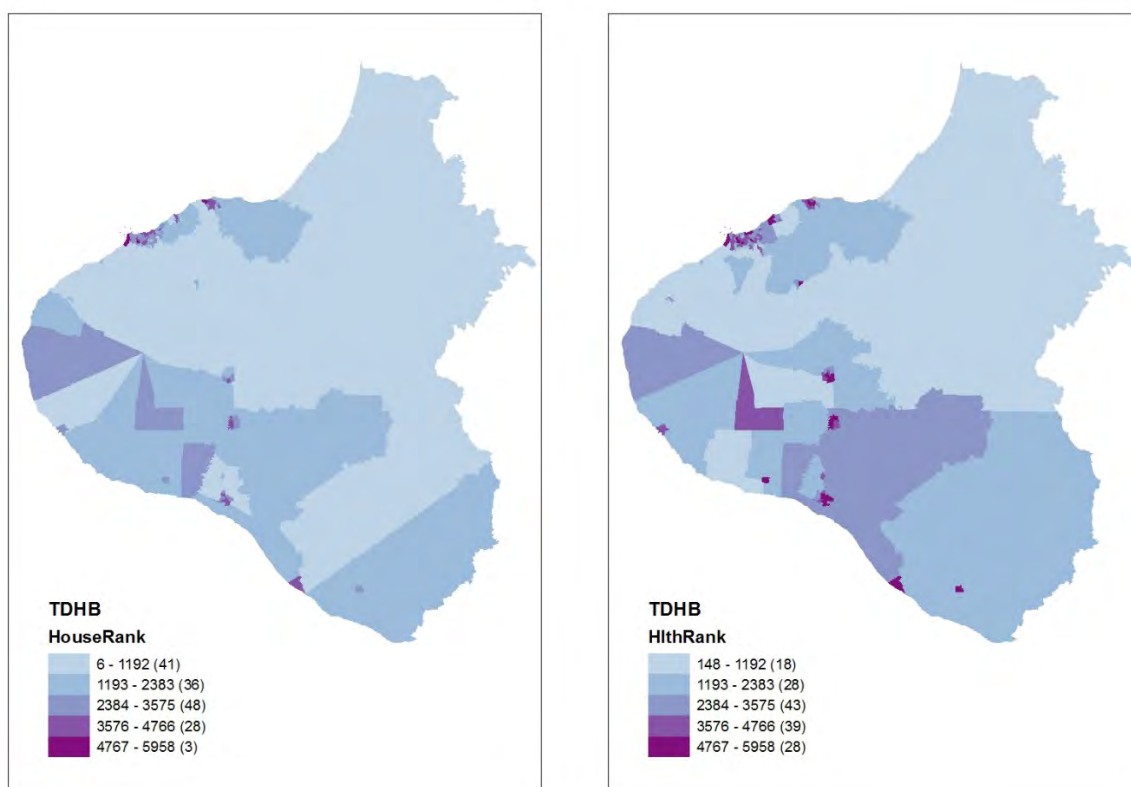


Figure 5. Distribution of housing and health deprivation in the TDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%). In the TDHB, only 1.9% (3/156) of data zones were among the most housing deprived 20% in NZ, while 26.3% (41/156) of data zones were among the least deprived 20%. The median housing deprivation rank in the TDHB was 2389, 9.9% (591 ranks) better than the NZ median. High (Q5) levels of housing deprivation occurred in Waitara, Marfell and Spotswood.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the TDHB, 17.9% (28/156) of data zones were among the 20% most health deprived in NZ, while 11.5% (18/156) were among the least deprived 20%. The median health deprivation rank in the TDHB was 3266, 4.8% (287 ranks) worse than the NZ median. High (Q5) levels of health deprivation closely followed the pattern of Q5 overall deprivation, but with 13 additional Q5 data zones located in New Plymouth, Eltham, Waitara, Inglewood and Hawera.

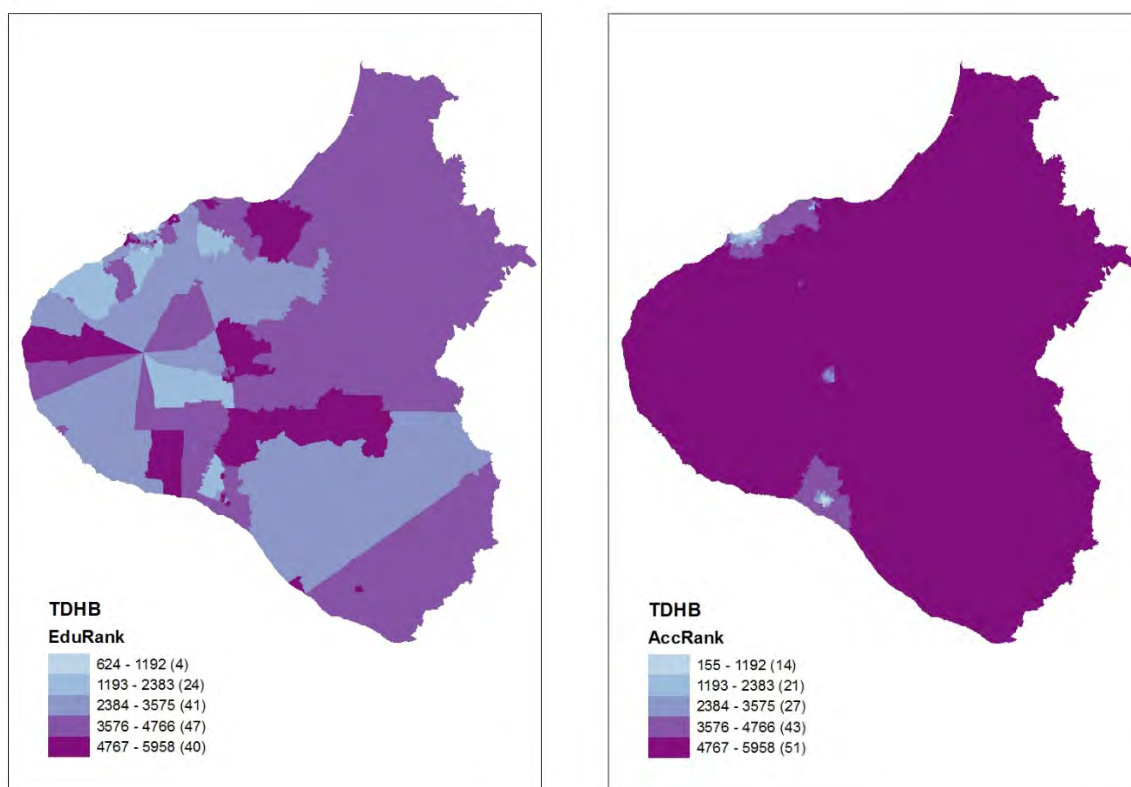


Figure 6. Distribution of education and access deprivation in the TDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the TDHB, 25.6% (40/156) of data zones were among NZ's 20% most education deprived, while only 2.6% (4/156) were among the least deprived 20%. The median education deprivation rank in the TDHB was 3833, 14.3% (854 ranks) worse than the NZ median. High (Q5) levels of education deprivation occurred in urban areas, but also in large rural data zones around Urenui, Parihaka, Midhirst, Kapuni, Te Roti and Moeroa. The Education Domain had 25 more Q5 data zones than the overall IMD.

The Access Domain measures the distance from the population weighted centre of each data zone to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the TDHB, 32.7% (51/156) of data zones were among NZ's 20% most access deprived, while only 9% (14/156) were among NZ's 20% least deprived. The median access deprivation rank in the TDHB was 4116, 19.1% (1137 ranks) worse than the NZ median. High (Q5) levels of access deprivation occurred in all rural parts of the TDHB.

Age profile of the Taranaki DHB

According to the 2013 census, the TDHB had a total population of 109,725 people living in 156 data zones, with a mean of 703 people each (range: 504 to 987).

| Mean data zone proportions for five age groups in the TDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Taranaki | 21.1% | 11.8% | 24.3% | 26.6% | 16.2% |
| New Zealand ³⁰ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 0.7% | -2.0% | -1.3% | 0.8% | 1.9% |

Table 2. Mean data zone proportions for five age groups in the TDHB

Table 2 shows that the age profile of the TDHB differs most from the national age profile in that it has 2.0% fewer people aged 15-24 and 1.9% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

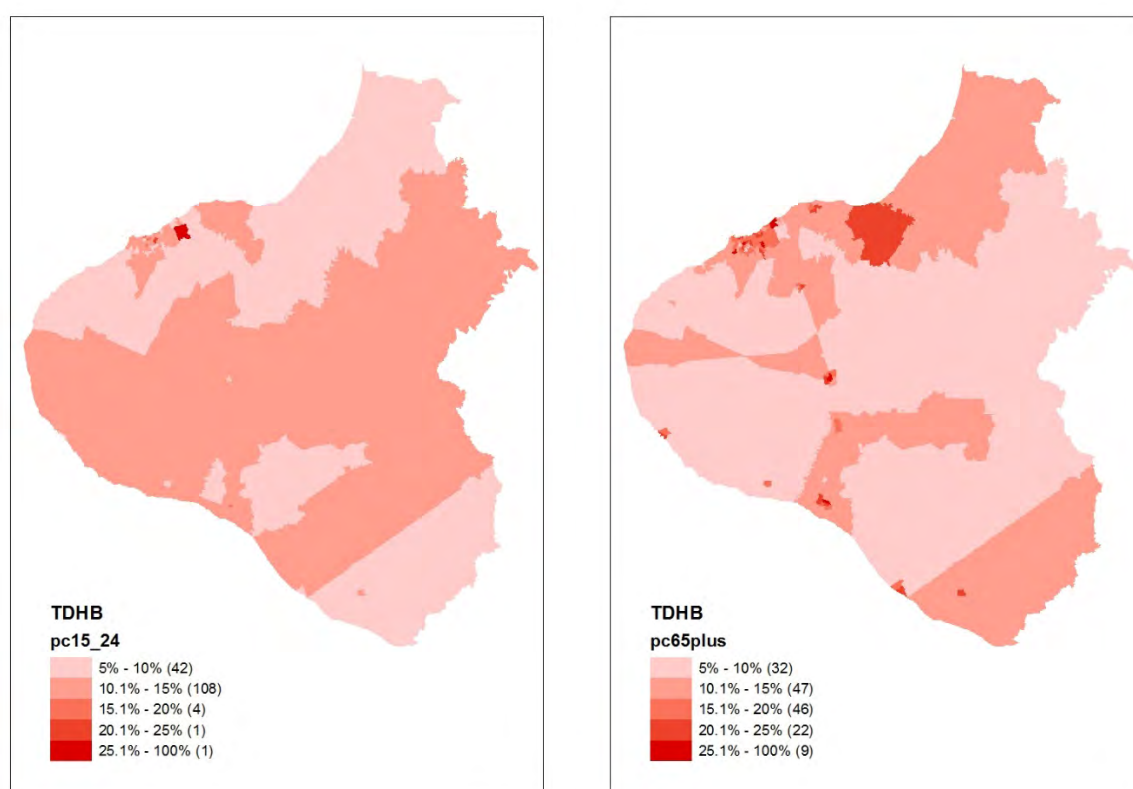


Figure 7. Distribution of people aged 15-24 and people aged 65+ in the TDHB

Ethnicity profile of the Taranaki DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in

³⁰ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

data zones within the TDHB ranged from 3.9% to 52.1%. The overall proportion of Māori in the TDHB was 17.4% higher than the national proportion of 14.9%. The proportion of Māori per data zone was greatest in a data zone located in Patea (52.1%), followed by one in Waitara (51.6%).

The proportion of Pacific ethnicity living in data zones within the TDHB ranged from 0.0% to 6.4%. The overall proportion of Pacific ethnicity in the TDHB was 1.5%, significantly lower than the national proportion of 7.3%. The greatest proportions of Pacific were located in New Plymouth and in smaller towns such as Bell Block, Waitara, Normanby, Hawera and Patea. A data zone in Blagdon had the greatest proportion of Pacific (6.4%).

The percentage of New Zealand European and Other ethnicities (NZE0) in the TDHB ranged from 56.4% to 99.5%. The overall proportion of NZEO was 91.3%, which was greater than the national proportion of 87.5%. The lowest proportions of NZEO (<70%) lived in data zones in Patea, Hawera and Waitara.

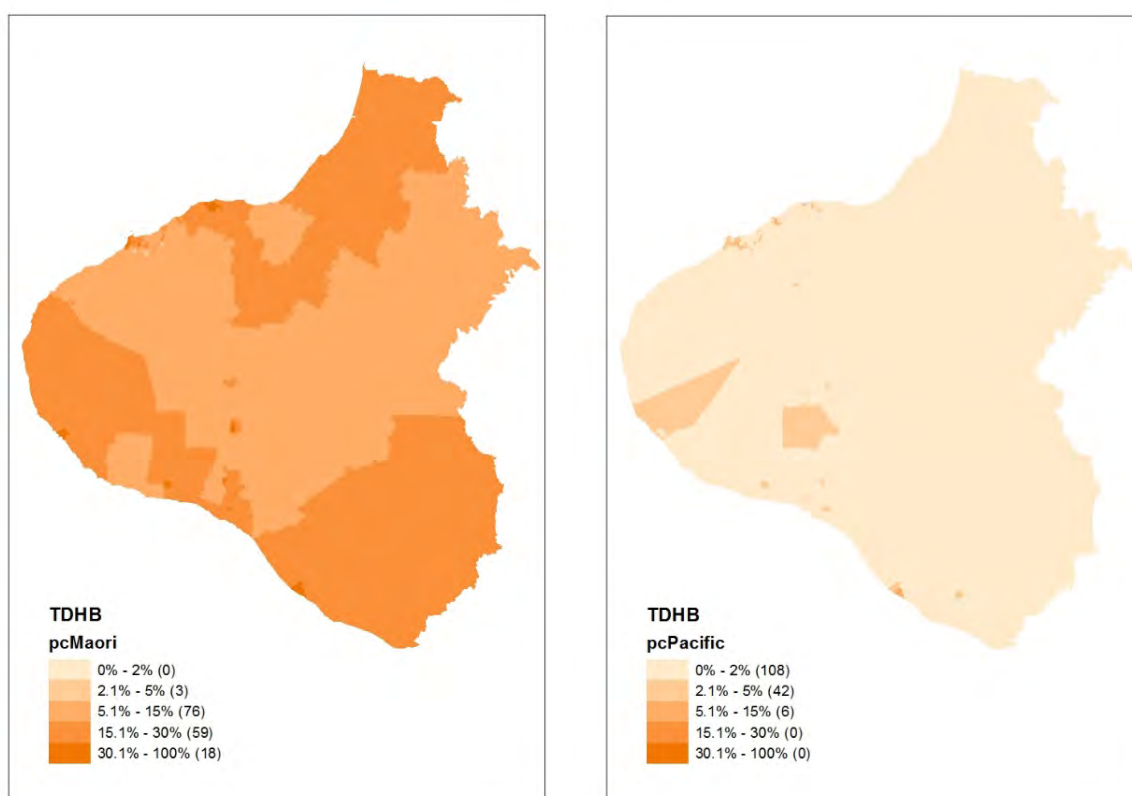
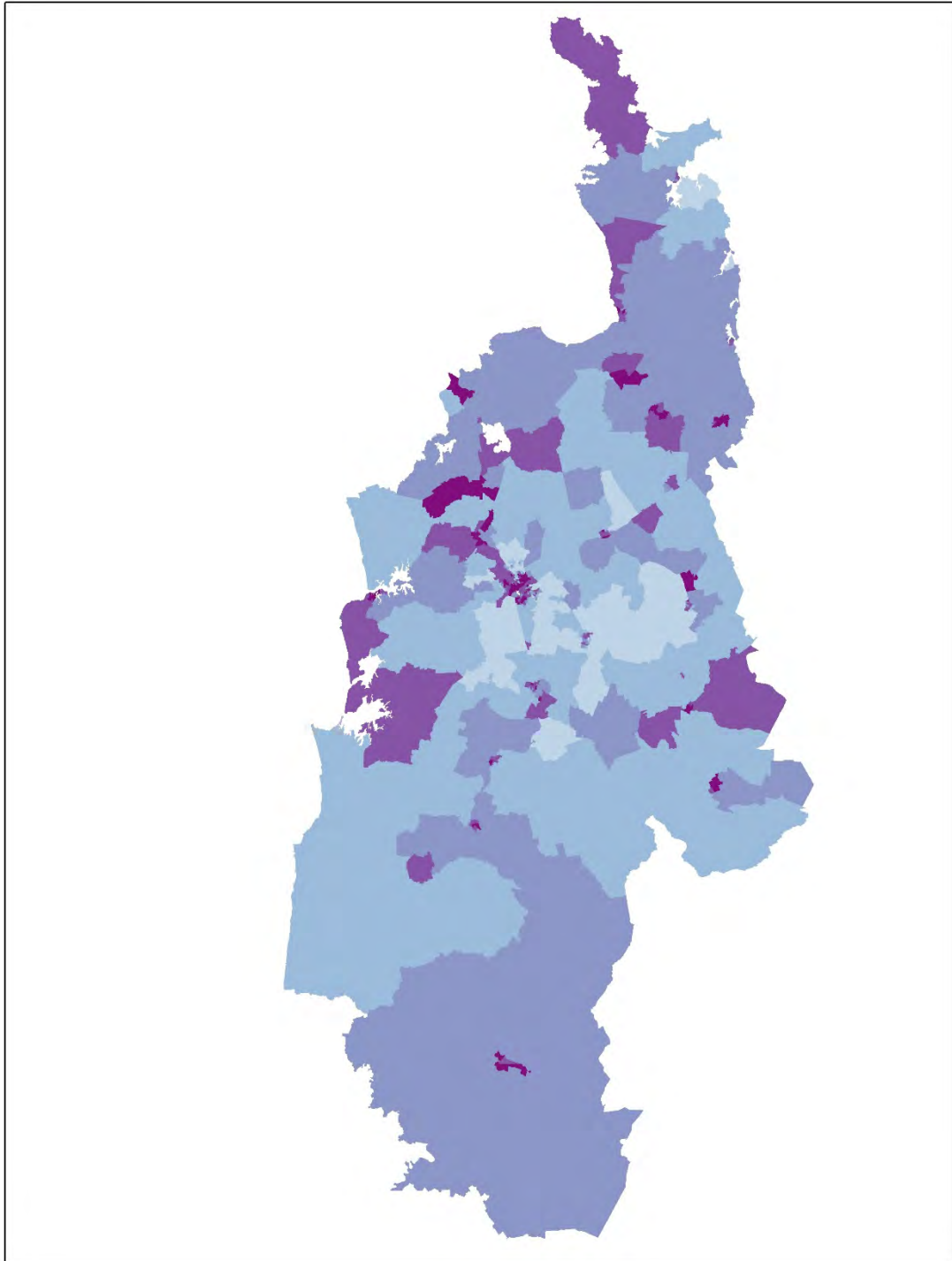


Figure 8. Distribution of Māori and Pacific people in the TDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Waikato DHB



Waikato DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Waikato DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

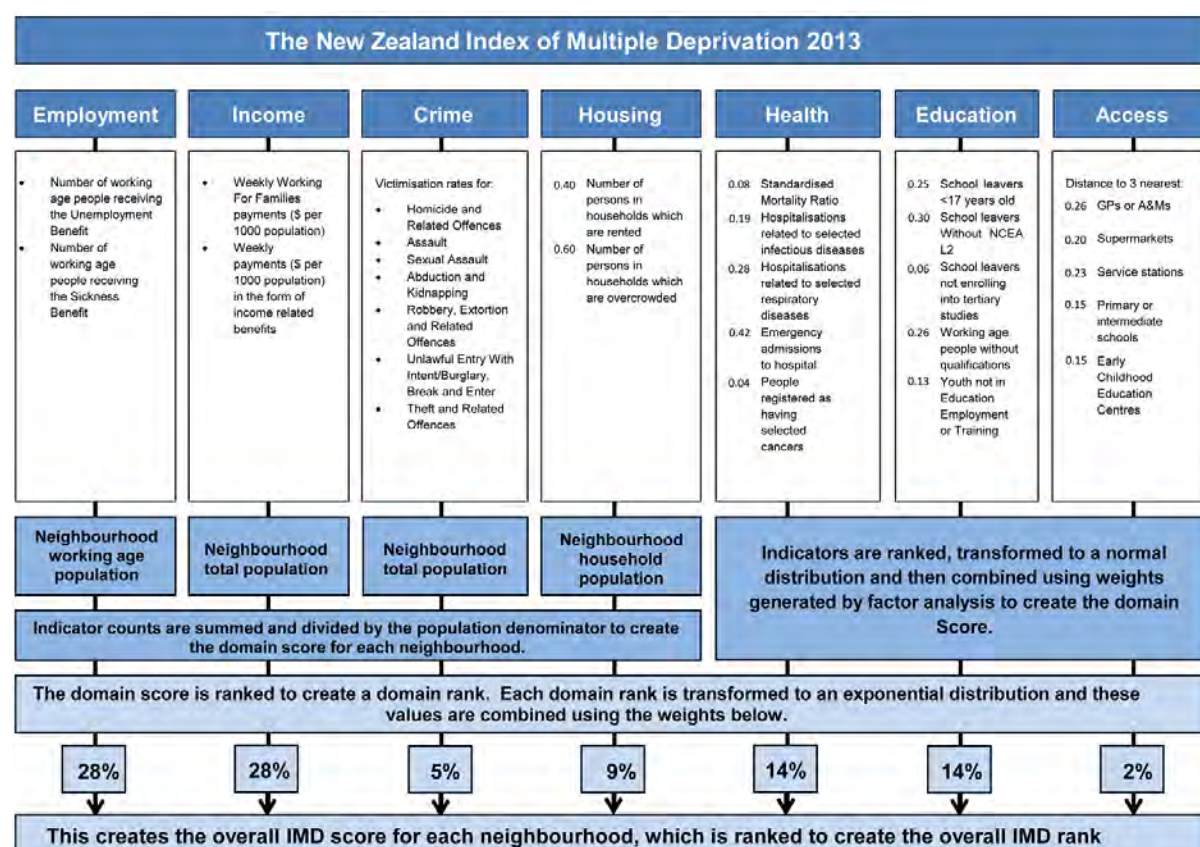


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Waikato DHB (WDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the WDHB were the same as for all of NZ, we would see 20% of the WDHB's 511 data zones in each quintile. However, Figure 1 shows that the proportion of data zones with Q5 deprivation was greater than 20% for the IMD and all domains except for Housing. Q4 deprivation was greater than 20% for all seven domains. The WDHB had high levels of overall IMD deprivation, with 50.7% (259/511) of its data zones in Q4 or Q5.

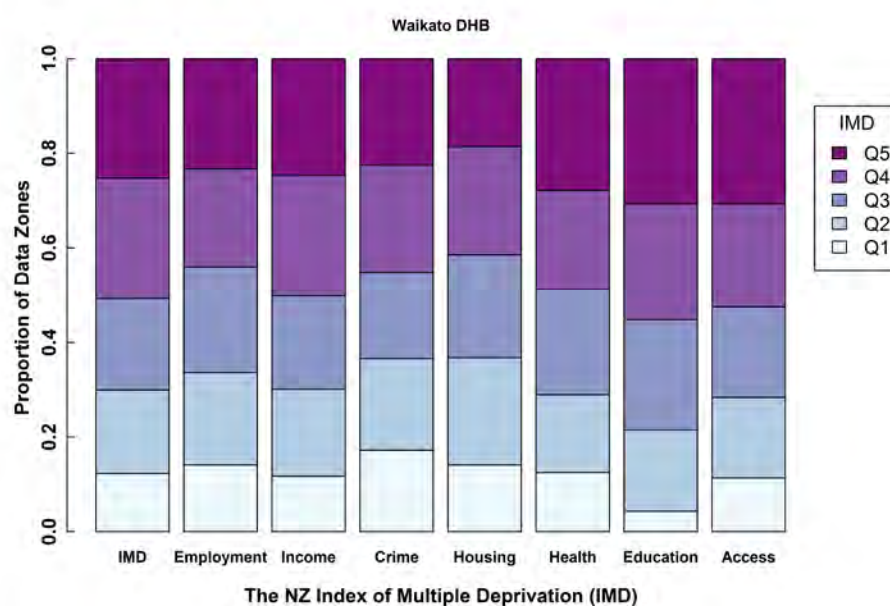


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the WDHB

Table 1 shows summary statistics by domain for 129 WDHB data zones that were among NZ's 20% most deprived (Q5) for the overall IMD, and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Education (5557), Income (5408), Employment (5369), Health (5285), Crime (4904) and Housing (4884) were contributing to high overall deprivation in these 129 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ³¹ deprivation ranks by domain for 129 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4779 | 3812 | 3586 | 1233 | 2409 | 3296 | 2128 | 23 |
| Max | 5951 | 5948 | 5957 | 5937 | 5890 | 5956 | 5957 | 5628 |
| Median | 5421 | 5369 | 5408 | 4904 | 4884 | 5285 | 5557 | 2391 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 129 data zones in the WDHB with Q5 IMD deprivation

³¹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

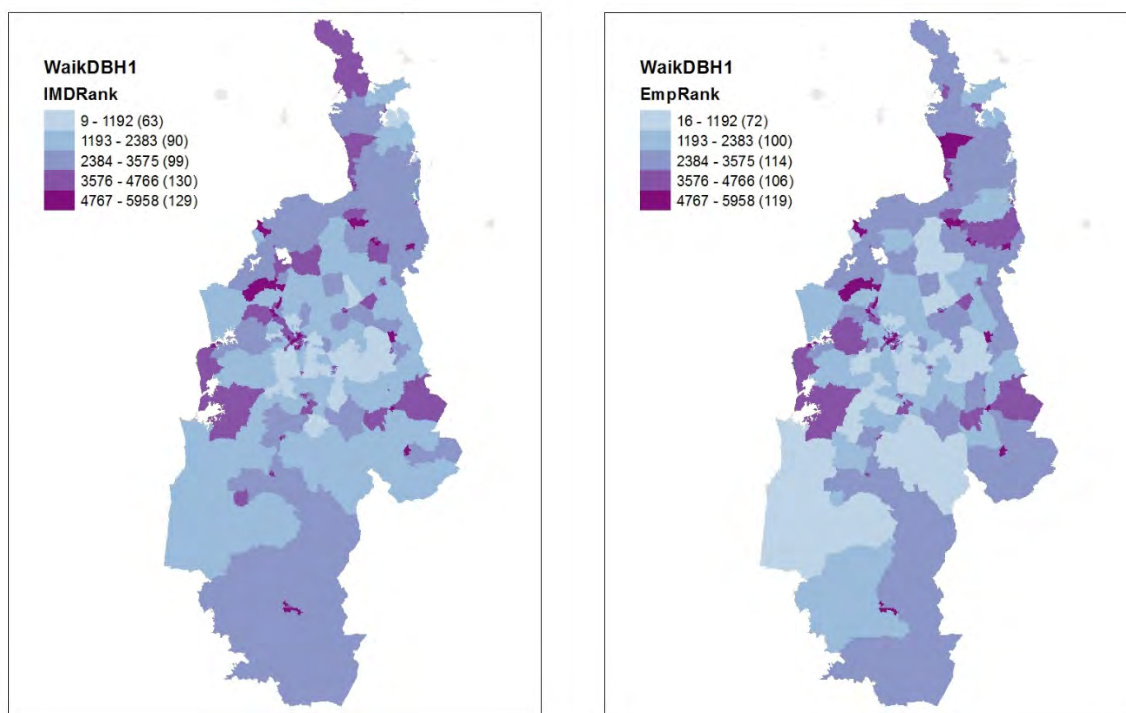


Figure 3. Distribution of overall IMD and employment deprivation in the WDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows moderate levels of deprivation in the WDHB in 2013 with 25.2% (129/511) of data zones among the most deprived 20% in NZ (Q5). Only 12.3% (63/511) of data zones were in the least deprived 20% in NZ (Q1). The median IMD rank was 3597, 10.4% (618 ranks) worse than the NZ median of 2979. There was one large rural data zone with Q5 deprivation to the west of Huntly, but most of the Q5 deprivation occurred in urban areas such as Hamilton and in smaller towns such as Huntly, Waihi, Te Awamutu, Raglan and Tokoroa. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the WDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the WDHB, 23.3% (119/511) of data zones were among the 20% most deprived in NZ for the Employment Domain, while 14.1% (72/511) of data zones were among the least deprived 20%. The median employment deprivation rank in the WDHB was 3356, 6.3% (377 ranks) worse than the NZ median of 2979. The distribution of Q5 employment deprivation followed a similar pattern to overall IMD deprivation, except that it had ten fewer Q5 data zones.

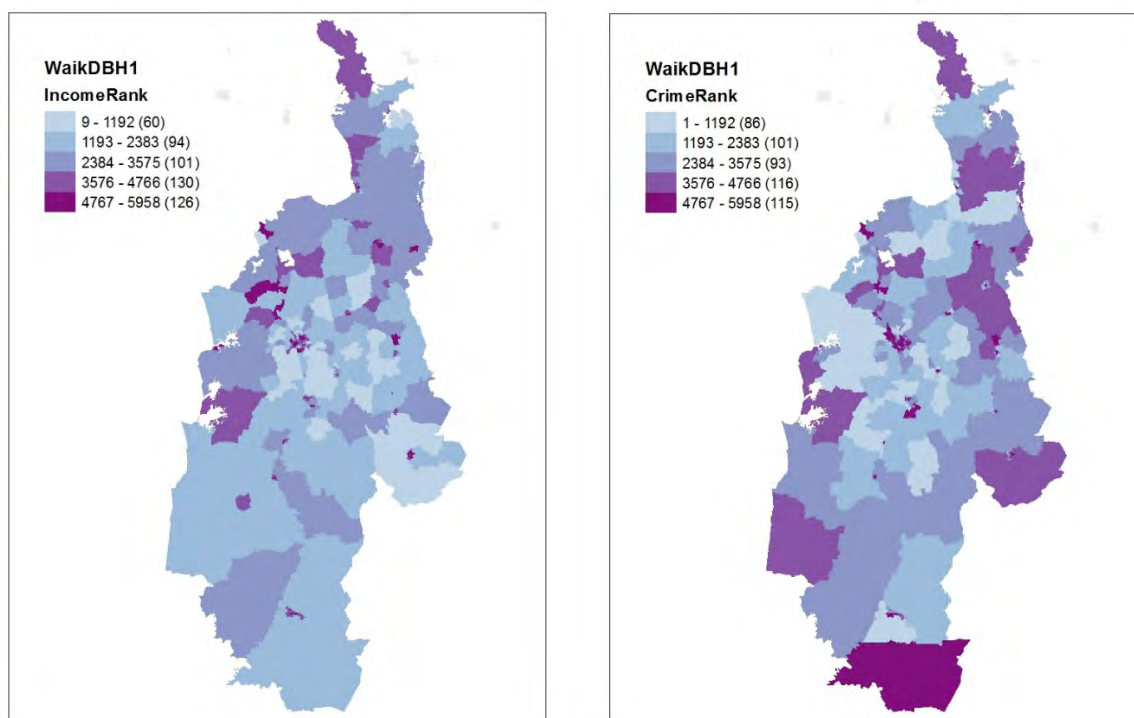


Figure 4. Distribution of income and crime deprivation in the WDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the WDHB, 24.7% (126/511) of data zones were in NZ's 20% most income deprived, while 11.7% (60/511) were in the 20% least income deprived. The median income deprivation rank in the WDHB was 3582, 10.1% (603 ranks) worse than the NZ median. The distribution of Q5 income deprivation followed a similar pattern to overall IMD deprivation, but there were fewer large rural data zones with Q4 income deprivation.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the WDHB, 22.5% (115/511) of data zones were among the most deprived 20% for the Crime Domain, while 17.2% (88/512) were among the least deprived 20%. The median crime deprivation rank in the WDHB was 3178, 3.3% (199 ranks) worse than the NZ median. High (Q5) rates of crime victimization occurred in large urban areas like Hamilton and in most towns. There was one small rural data zone with Q5 rates of crime victimization south of Te Awamutu and a large one around National Park.

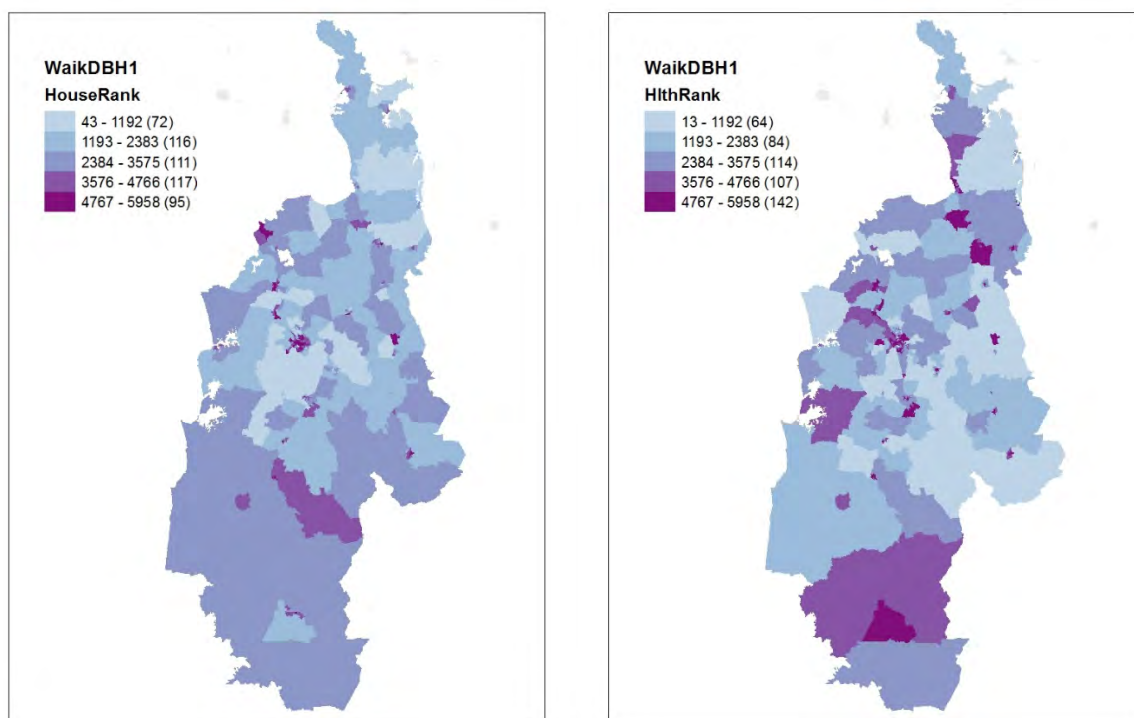


Figure 5. Distribution of housing and health deprivation in the WDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%) in 2013. In the WDHB, 18.6% (95/511) of data zones were among the most deprived 20% in NZ, while 14.1% (72/511) were among the least deprived 20%. The highest proportions of data zones were in quintiles two, three and four. The median housing deprivation rank in the WDHB was 3029, just 0.8% (50 ranks) worse than the NZ median. Q5 housing deprivation was less concentrated than overall IMD deprivation with 34 fewer Q5 data zones. In addition, there were few large rural data zones with Q4 housing deprivation — the exception being the data zone that includes Te Kuiti and Benneydale.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the WDHB, 27.8% (142/511) of data zones were among the 20% most health deprived in NZ, while 12.5% (64/511) were among the least deprived 20%. The median health deprivation rank in the WDHB was 3490, 8.6% (511 ranks) worse than the NZ median. Most of the data zones with high (Q5) health deprivation were located in the north and central parts of the WDHB, in urban areas such as Hamilton, Thames, Ngaruawahia and Huntly, but there were also large rural data zones with Q5 health deprivation in Ngatea, Kerepehi, to the south of Paeroa and south of Taumarunui.

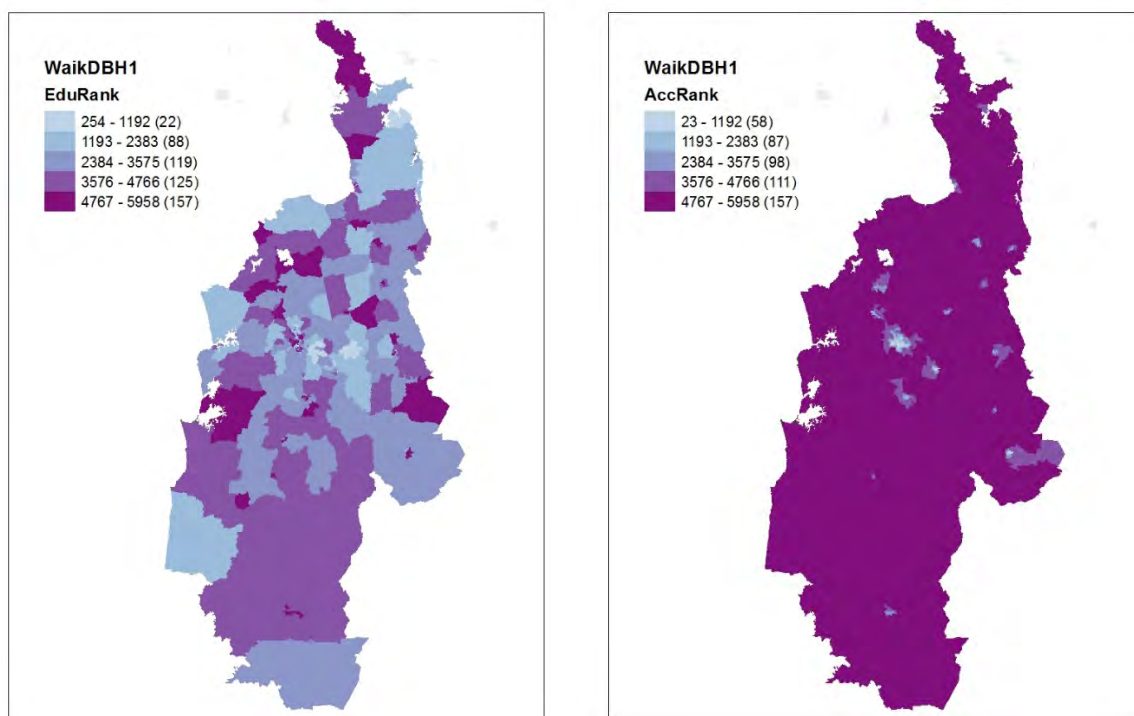


Figure 6. Distribution of education and access deprivation in the WDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the WDHB, 30.7% (157/511) of data zones were among NZ's 20% the most education deprived, while only 4.3% (22/511) were among the least deprived 20%. The median education deprivation rank in the WDHB was 3824, 14.2% (845 ranks) worse than the NZ median. The distribution of Q5 data zones followed a similar pattern to overall (IMD) deprivation, but there were 28 more Q5 data zones for the Education Domain. Many of these were located in rural areas in Coromandel, around Putaruru and Meremere, and in a large rural data zone which stretched from Te Ahurei around the Kāwhia Harbour to Owhiro.

The Access Domain measures the distance from the population weighted centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the WDHB, 30.7% (157/511) of data zones were among NZ's 20% most access deprived, while 11.4% (58/511) were among NZ's 20% least deprived. The median access deprivation rank in the WDHB was 3660, 11.4 % (681 ranks) worse than the NZ median. Predictably, the entire rural hinterland of the WDHB was Q5 access deprived. Access to services was good in Hamilton and larger towns like Huntly, Cambridge, and Morrinsville, but not in small towns like Coromandel, Meremere, Raglan and National Park.

Age profile of the Waikato DHB

According to the 2013 census, the WDHB had a total population of 359235 people living in 511 data zones, with a mean of 703 people each (range: 498 to 1278).

| Mean data zone proportions for five age groups in the WDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Waikato | 21.6% | 14.0% | 24.4% | 25.2% | 14.8% |
| New Zealand ³² | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 1.2% | 0.2% | -1.2% | -0.6% | 0.5% |

Table 2. Mean data zone proportions for five age groups in the WDHB

Table 2 shows that the age profile of the WDHB differs most from the national age profile in that it has 1.2% more children aged 0-14 and 1.2% fewer people aged 25-44. Figure 7 shows the distribution of people in these two age groups.

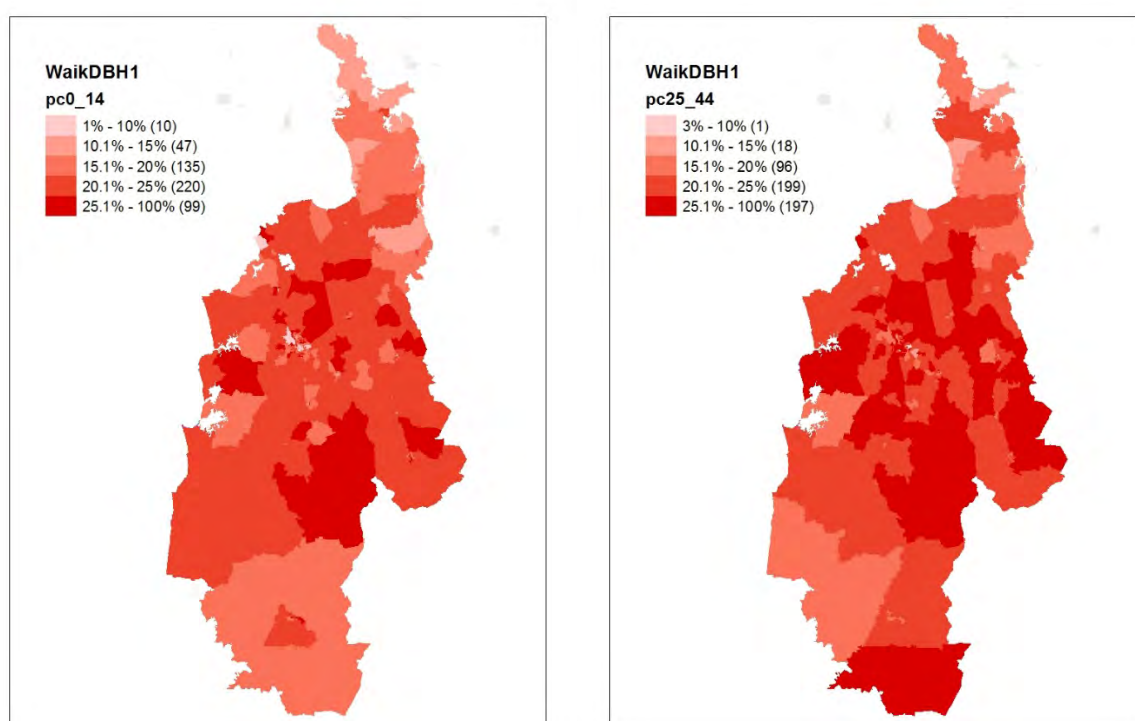


Figure 7. Distribution of children aged 0-14 and people aged 25-44 in the WDHB

Ethnicity profile of the Waikato DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the WDHB in 2013 ranged from 2.4% to 80.3%. The overall proportion of Māori in the WDHB was 21.7%, which was higher than the national

³² Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

proportion of 14.9%. The proportion of Māori per data zone was greatest in two data zones located in Huntly West (80.3% and 80.2%), followed by one in Ngaruawahia (78.3%).

The proportion of Pacific ethnicity living in data zones within the WDHB ranged from 0.0% to 33.1%. The overall proportion of Pacific ethnicity in the WDHB was 3.8%, significantly lower than the national proportion of 7.3%. A data zone in Ngaruawahia had the greatest proportion of Pacific (33.1%), and there were relatively high proportions of Pacific ethnicity (>20%) in Tokoroa, Strathmore, Aotea, Papanui and Meremere.

The percentage of New Zealand European and Other ethnicities (NZE0) in the WDHB ranged from 29.8% to 99.7%. The overall proportion of NZEO was 85.7%, slightly lower than the national proportion of 87.5%. The lowest proportions of NZEO (<40%) lived in data zones in Meremere, Huntly West, Enderley and Te Kuiti.

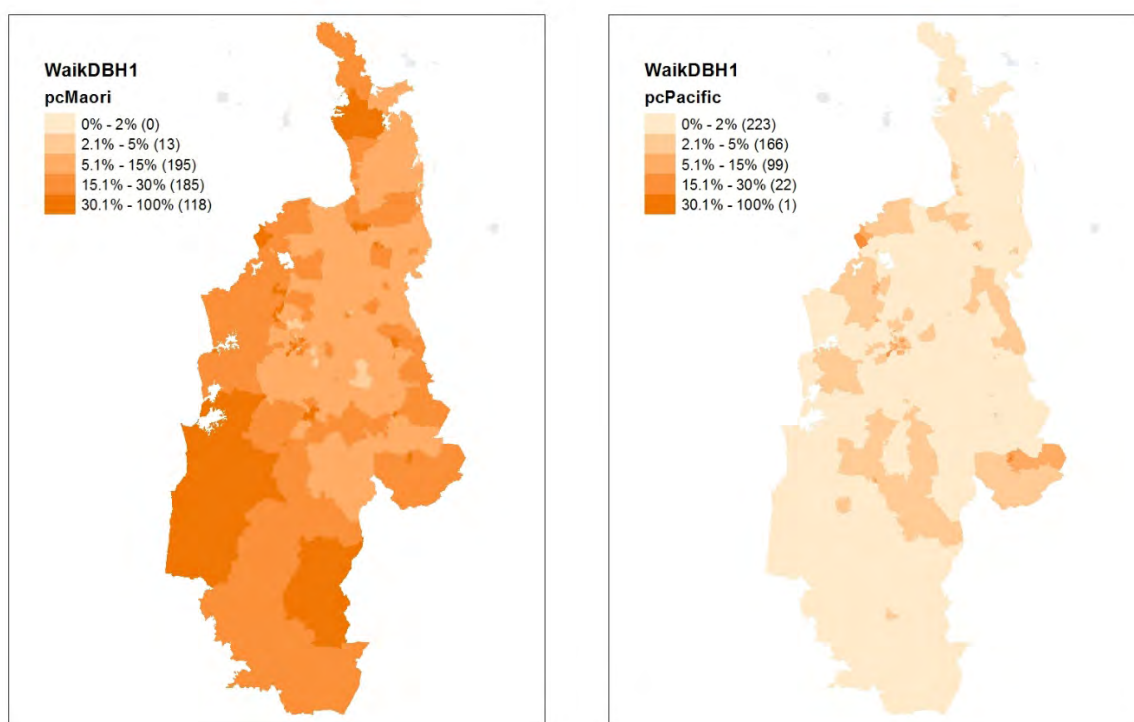
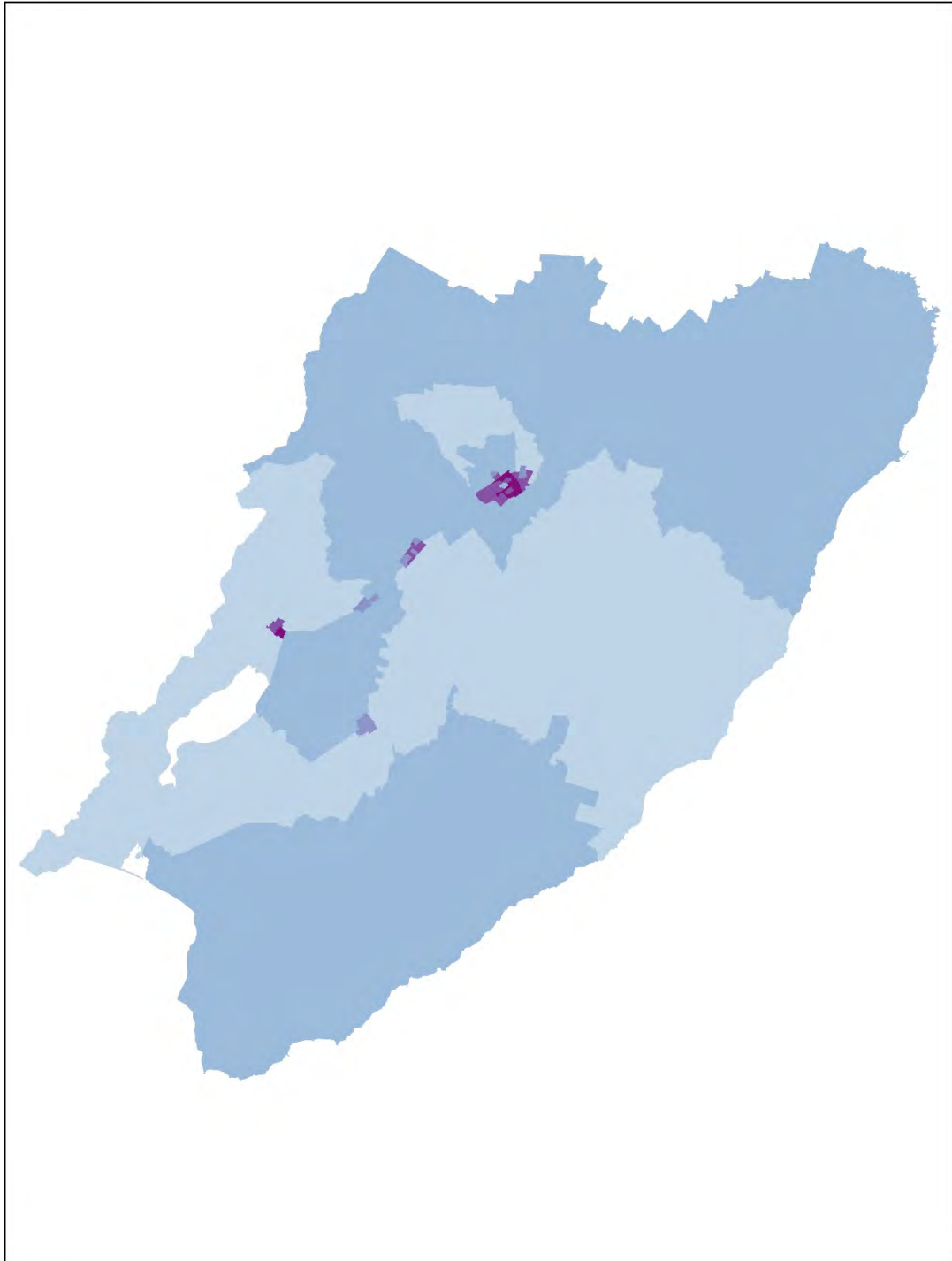


Figure 8. Distribution of Māori and Pacific people in the WDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](https://www.imd.org.nz/).

Wairarapa DHB



Wairarapa DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Wairarapa DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

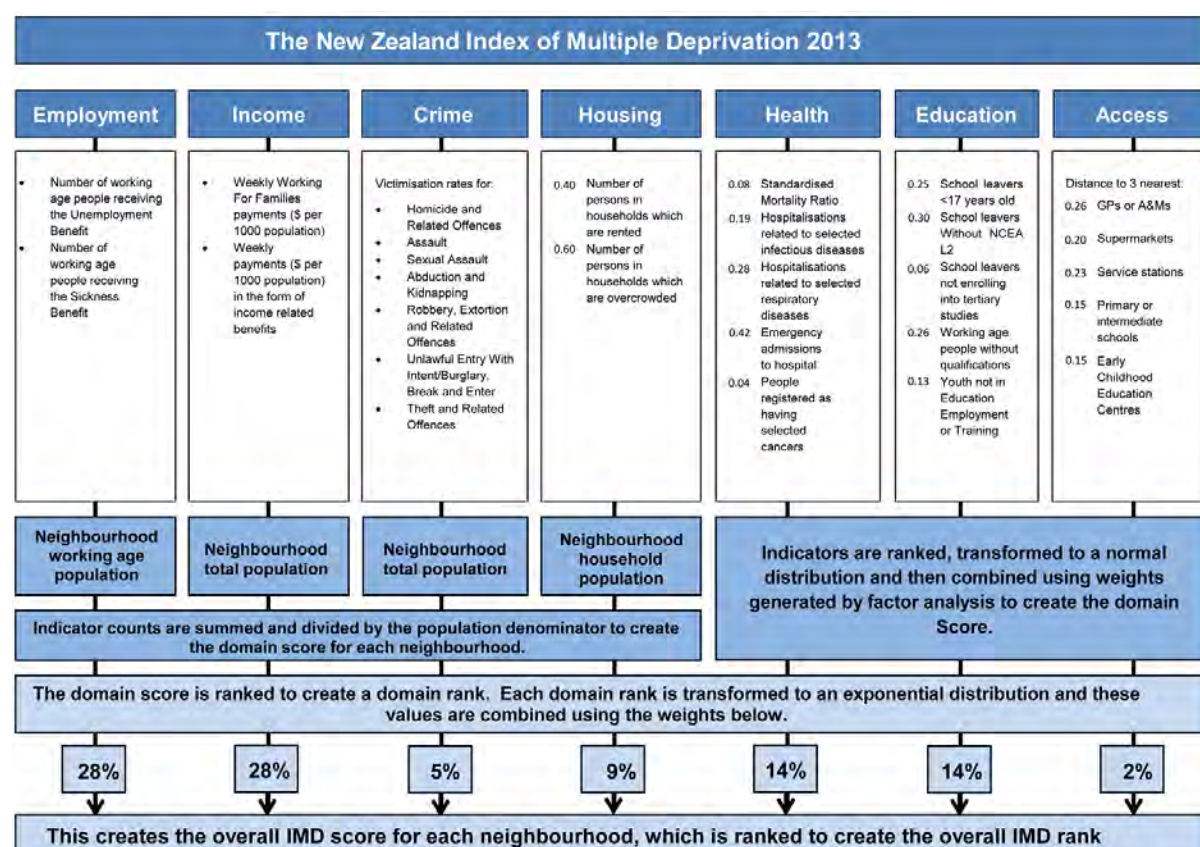


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Wairarapa DHB (WDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the WDHB were the same as for all of NZ, we would see 20% of the WDHB's 58 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was less than 20% across all domains except for Health and Access. Conversely, the proportion of data zones with Q4 deprivation was greater than 20% except for the Crime and Housing Domains. As a result, the WDHB had relatively high levels of overall IMD deprivation, with 48.3% (28/58) of its data zones in either Q4 or Q5.

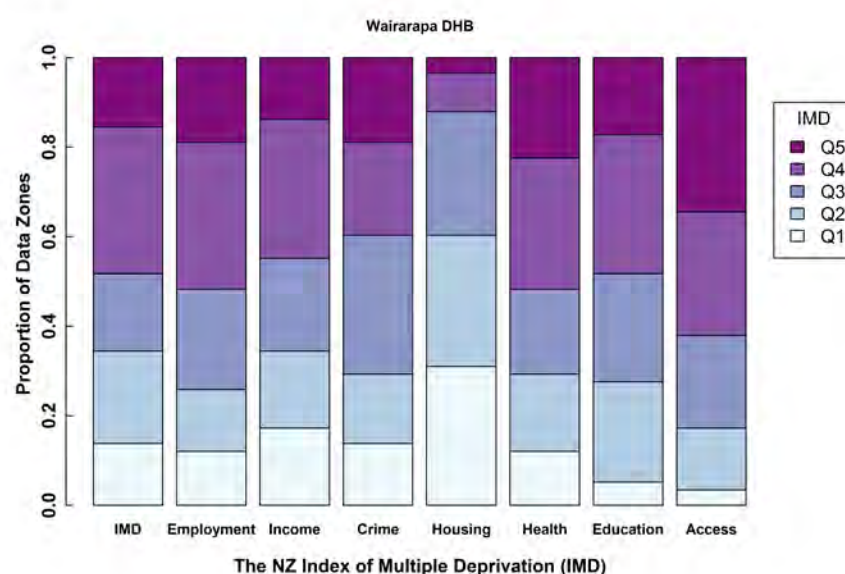


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the WDHB

Table 1 shows summary statistics by domain for the nine WDHB's data zones that were among NZ's 20% most deprived (Q5) for the overall IMD, and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Health (5295), Crime (5291), Income (5148), Employment (5054) and Education (5052) were contributing to high overall deprivation in these nine data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ³³ deprivation ranks by domain for 9 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4835 | 4389 | 4340 | 3410 | 2890 | 4519 | 4611 | 542 |
| Max | 5944 | 5856 | 5943 | 5940 | 5660 | 5947 | 5892 | 5305 |
| Median | 5250 | 5054 | 5148 | 5291 | 3992 | 5295 | 5052 | 2073 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 9 data zones in the WDHB with Q5 IMD deprivation

³³ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

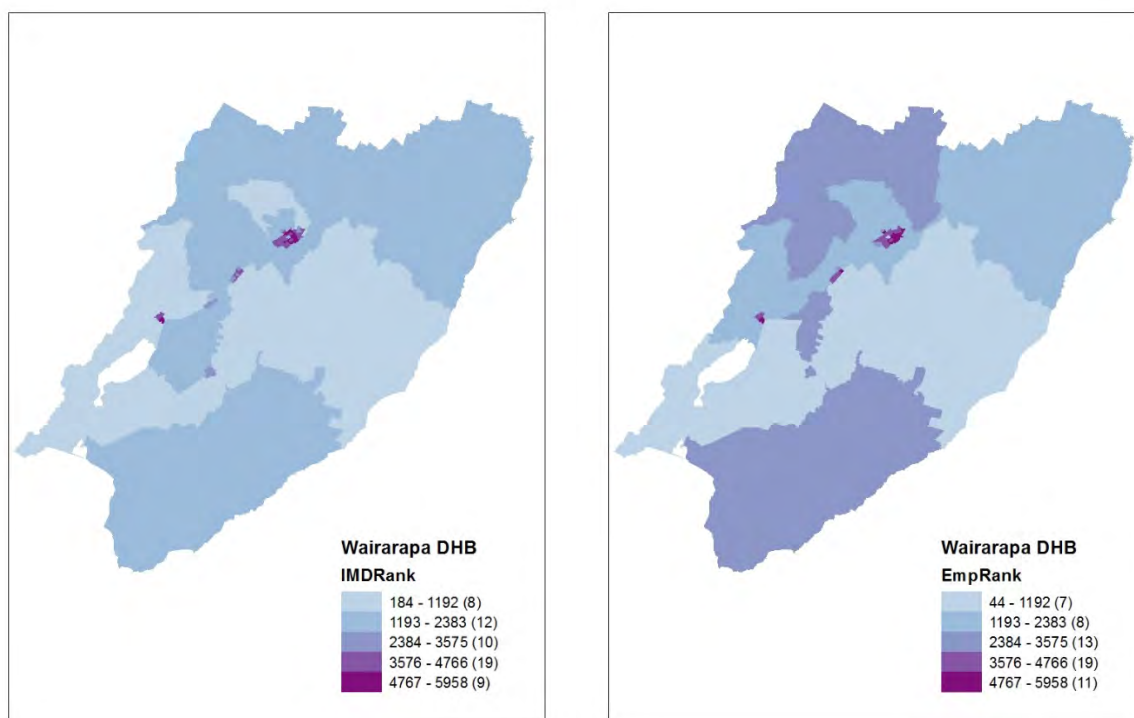


Figure 3. Distribution of overall IMD and employment deprivation in the WDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows relatively low levels of Q5 deprivation in the WDHB. Only 15.5% (9/58) of data zones were among NZ's 20% most deprived (Q5), while 13.8% (8/58) were among the 20% least deprived (Q1). The quintile with the most data zones was Q4. The median IMD rank in the WDHB was 3469, 8.2% (490 ranks) worse than the NZ median of 2979. There are no rural data zones with Q5 IMD deprivation. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the WDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the WDHB, 19.0% (11/58) of data zones were among the 20% most deprived in NZ for the Employment Domain, while 12.1% (7/58) were among the least deprived 20%. The median employment deprivation rank in the WDHB was 3760, 13.1% (781 ranks) worse than the NZ median. The distribution of Q5 employment deprivation followed a similar pattern to overall IMD deprivation, except that it had two more Q5 data zones and three more Q3 data zones. There were no Q5 employment deprived data zones in rural parts of the WDHB.

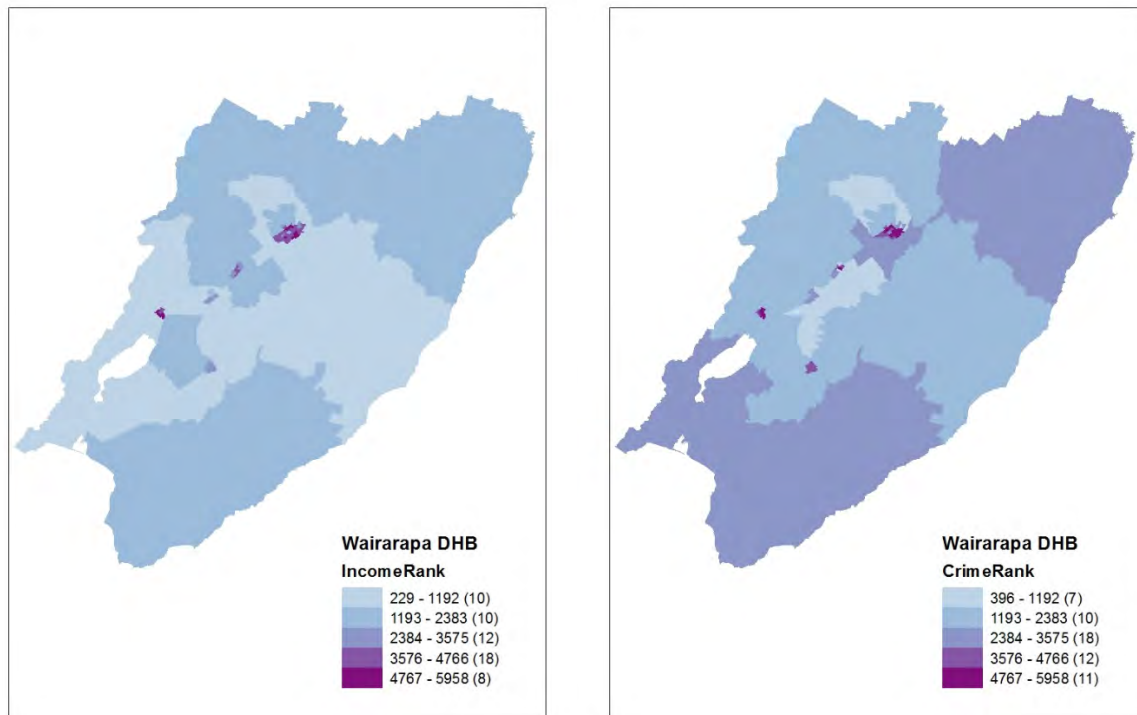


Figure 4. Distribution of income and crime deprivation in the WDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the WDHB, 13.8% (8/58) of data zones were among NZ's 20% most income deprived, while 17.2% (10/58) were among the 20% least income deprived. The median income deprivation rank in the WDHB was 3347, 6.2% (368 ranks) worse than the NZ median. The distribution of Q5 income deprivation followed a very similar pattern to overall IMD deprivation, but with slightly fewer Q4 and Q5 data zones.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the WDHB, 19.0% (11/58) of data zones were among NZ's 20% most deprived for the Crime Domain, while 13.8% (8/58) were among the 20% least deprived. The median crime deprivation rank in the WDHB was 3146, 2.8% (167 ranks) worse than the NZ median. Q5 rates of crime victimization were confined to Masterton, Featherston and Carterton. Martinborough had Q4 crime deprivation, and five large rural data zones had Q3 crime deprivation.

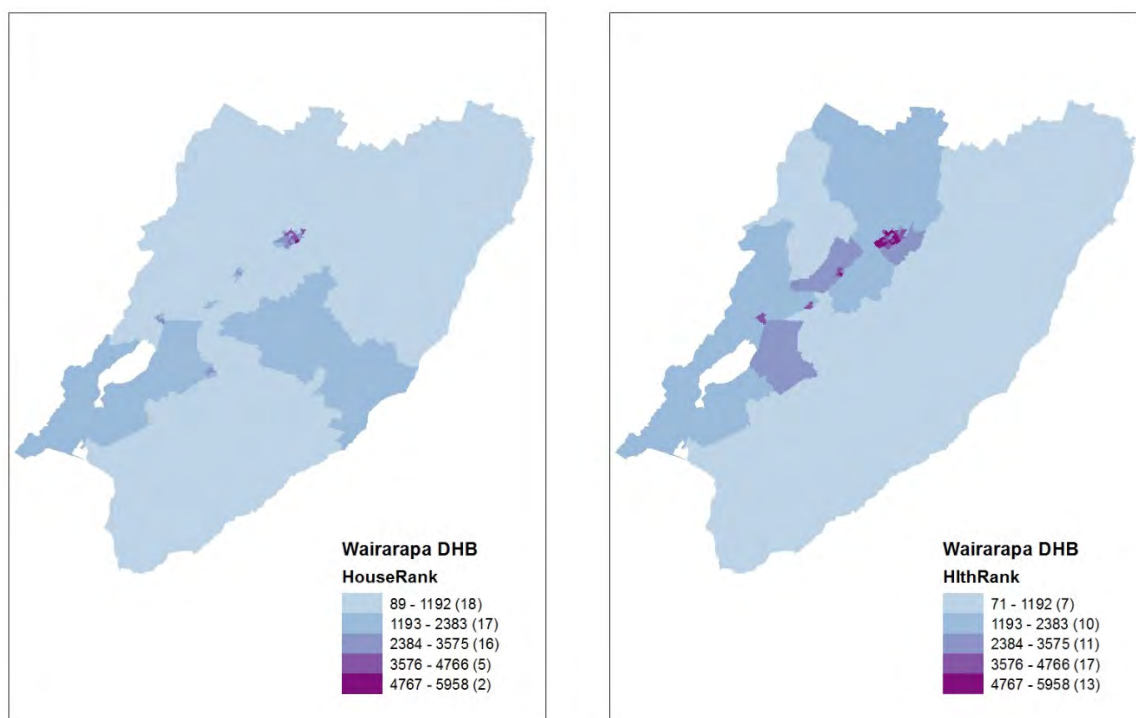


Figure 5. Distribution of housing and health deprivation in the WDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%). In the WDHB, only 3.4% (2/58) of data zones were among NZ's 20% most housing deprived, while 31.0% (18/58) were among the 20% least deprived. The median housing deprivation rank in the WDHB was 1978, 16.8% (1002 ranks) better than the NZ median. The two data zones with Q5 housing deprivation were located in Masterton, while the majority of rural area had low levels of housing deprivation.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the WDHB, 22.4% (13/58) of data zones were among NZ's 20% most health deprived, while 12.1% (7/58) were among the 20% least deprived. The median health deprivation rank in the WDHB was 3689, 11.9% (710 ranks) worse than the NZ median. The Health Domain had four more Q5 data zones than overall IMD deprivation and Q5 health deprivation was confined to Masterton and Carterton. Q4 health deprivation occurred in Masterton, Carterton, Greytown and Featherston.

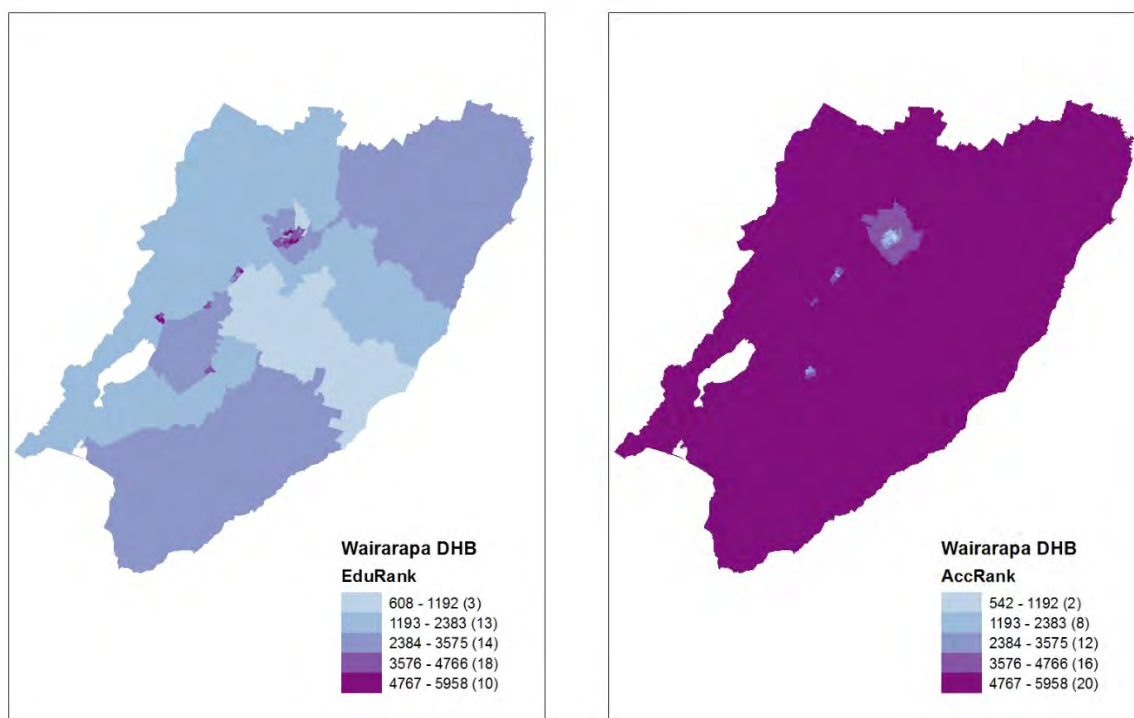


Figure 6. Distribution of education and access deprivation in the WDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the WDHB, 17.2% (10/58) of data zones were among NZ's 20% most education deprived, while only 5.2% (3/58) were among the 20% least deprived. The median education deprivation rank in the WDHB was 3509, 8.9% (530 ranks) worse than the NZ median. The distribution of Q5 education deprived data zones followed a very similar pattern to the Crime Domain, but in urban areas, education deprivation had six more Q4 data zones. There were six large rural data zones with Q3 education deprivation.

The Access Domain measures the distance from the population weighted centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the WDHB, 34.5% (20/58) of data zones were among NZ's 20% most access deprived, while only 3.4% (2/58) were in NZ's 20% least deprived. The median access deprivation rank in the WDHB was 4025, 17.5% (1046 ranks) worse than the NZ median. Predictably, the entire rural part of the WDHB was Q5 access deprived. Greytown had Q4 access deprivation and Masterton, Carterton and Featherston had Q3 or better access deprivation.

Age profile of the Wairarapa DHB

In 2013 the WDHB had a total population of 41,130 people living in 58 data zones, with a mean of 709 people each (range: 513 to 918).

| Mean data zone proportions for five age groups in the WDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Wairarapa DHB | 19.9% | 11.1% | 21.0% | 28.9% | 19.1% |
| New Zealand ³⁴ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -0.5% | -2.7% | -4.6% | 3.1% | 4.8% |

Table 2. Mean data zone proportions for five age groups in the WDHB

Table 2 shows that the age profile of the WDHB differs most from the national age profile in that it has 4.6% fewer people aged 25-44 and 4.8% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

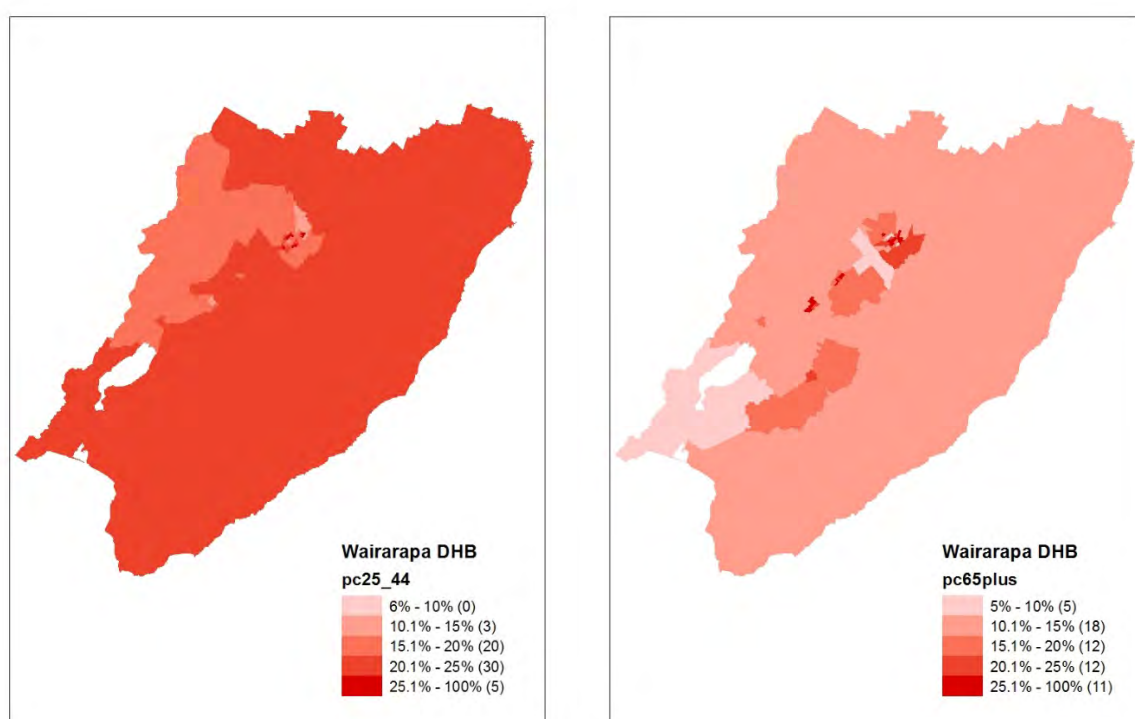


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the WDHB

Ethnicity profile of the Wairarapa DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the WDHB ranged from 5.3% to 60.6%. The overall proportion of Māori in the WDHB was 16.1%, slightly higher than the national proportion of

³⁴ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

14.9%. The proportion of Māori per data zone was greatest in two data zones in Masterton (60.6% and 54.8%).

The proportion of Pacific ethnicity living in data zones within the WDHB in 2013 ranged from 0.0% to 18.1%. The overall proportion of Pacific ethnicity was 2.6%, much lower than the national proportion of 7.3%. The proportion of Pacific was greatest in two data zones in Masterton (18.1% and 17%).

The proportion of New Zealand European and Other ethnicities (NZEO) living in data zones within the WDHB ranged from 52.7% to 99.4%. The overall proportion of NZEO was 91.8%, which is greater than the national proportion of 87.5%. The lowest proportions of NZEO (<60%) lived in Masterton.

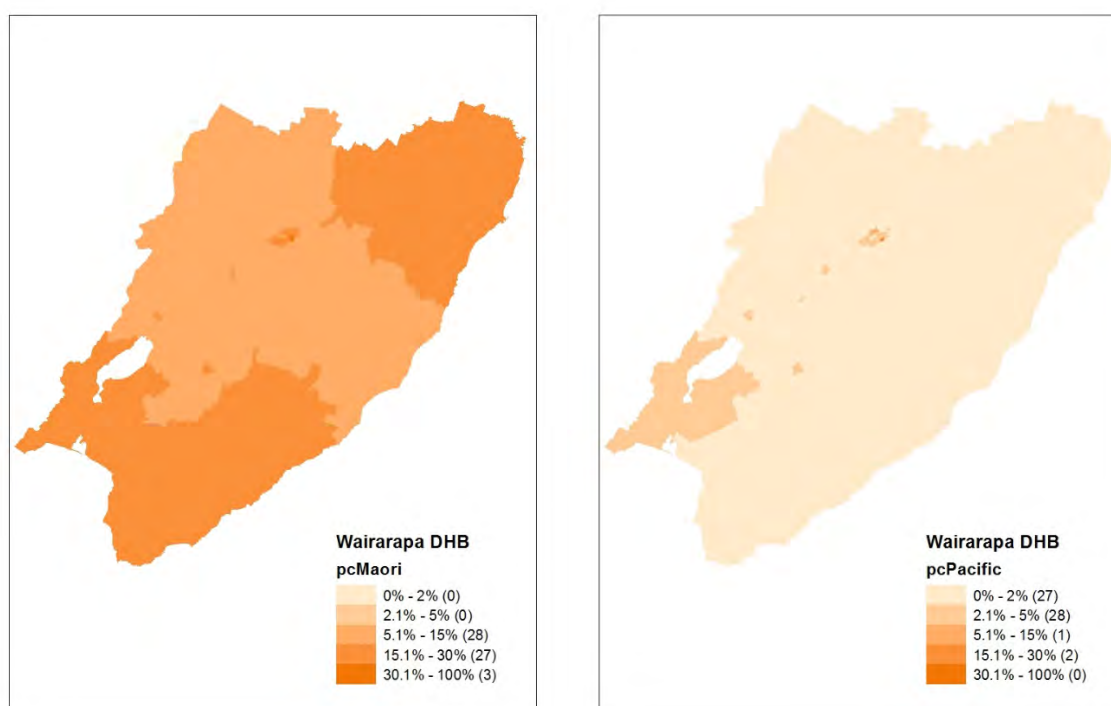
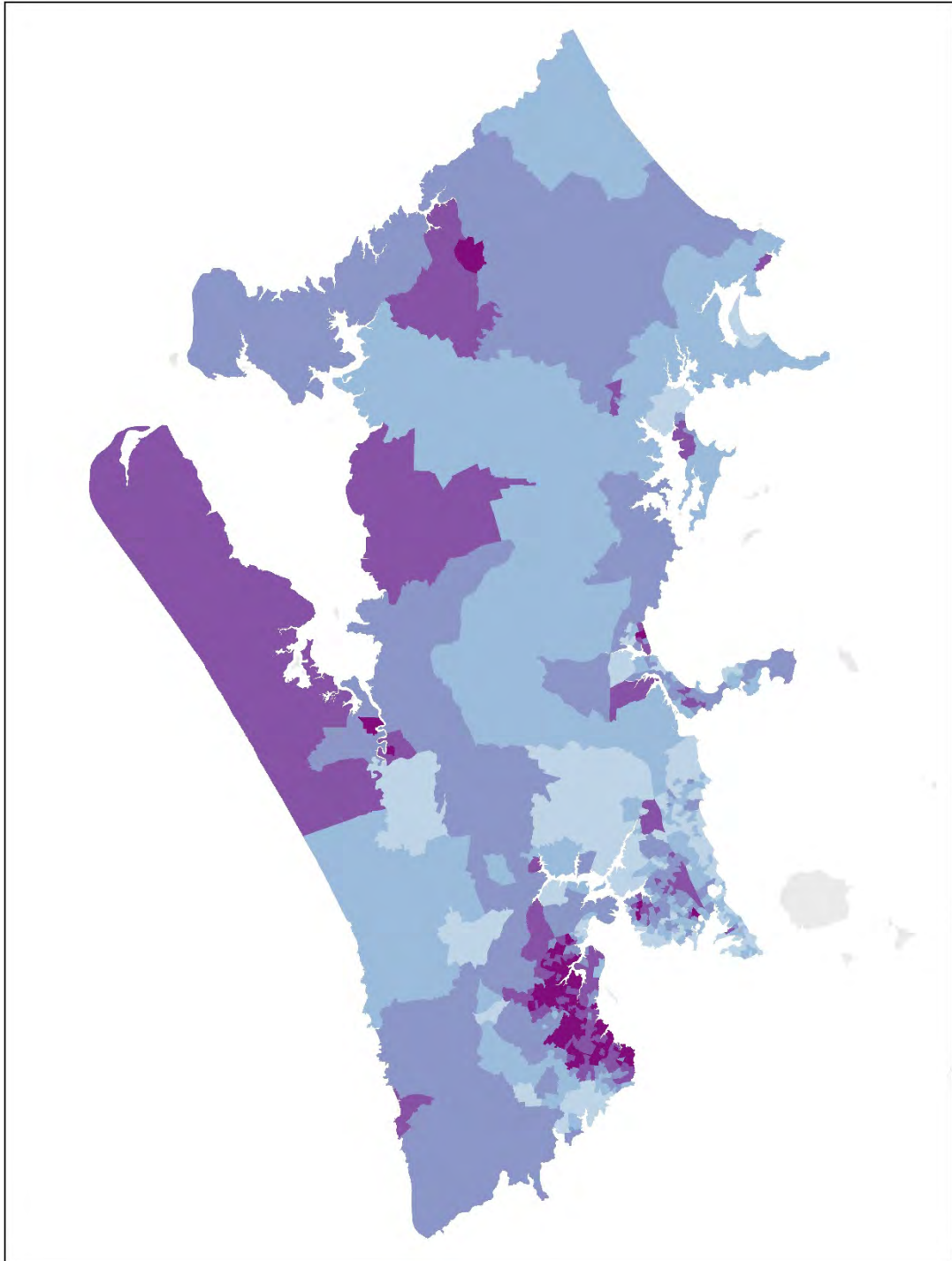


Figure 8. Distribution of Māori and Pacific people in the WDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](#).

Waitemata DBH



Waitemata DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Waitemata DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

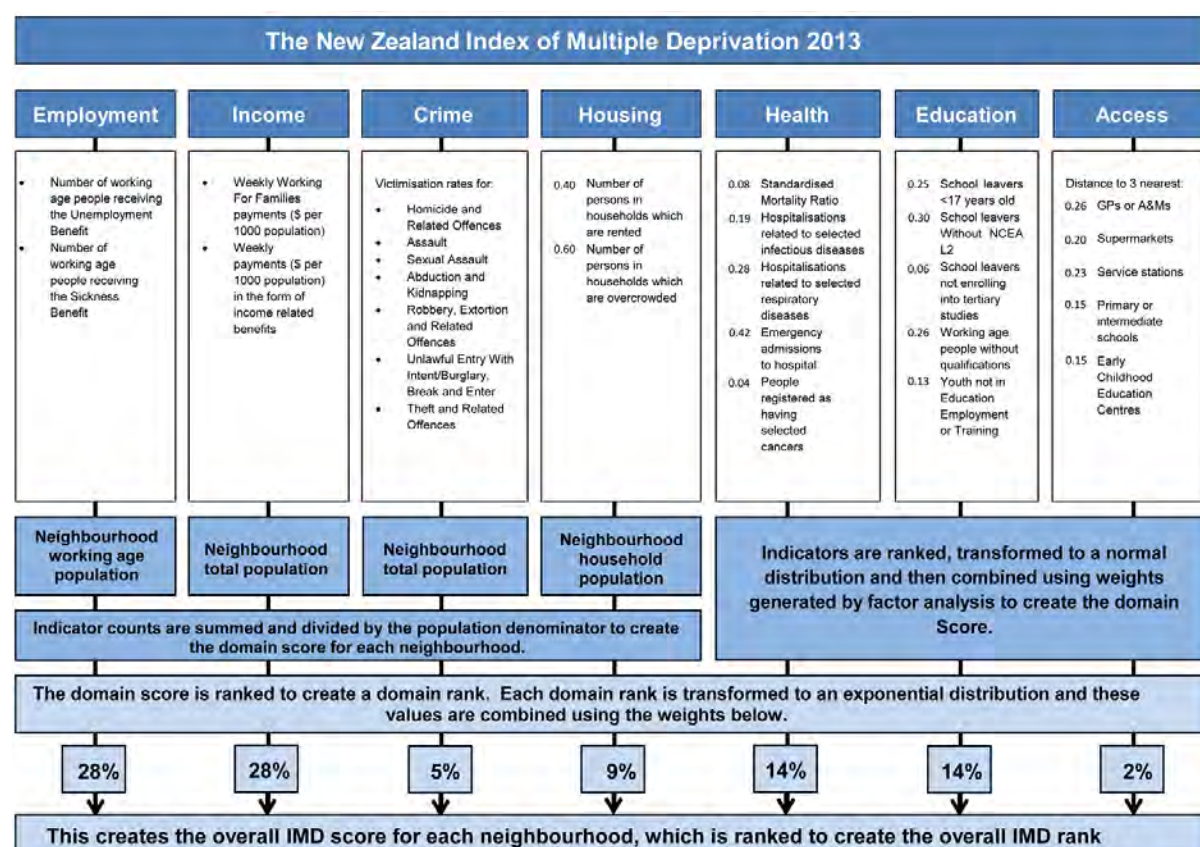


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Waitemata DHB (WDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the WDHB were the same as for all of NZ, we would see 20% of the WDHB's 729 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was significantly less than 20% for the IMD and all seven domains. Q4 deprivation was also lower than average for the IMD and the Employment, Crime and Education Domains. The WDHB had moderate levels of overall IMD deprivation, with 32.4% (236/729) of its data zones in Q4 or Q5.

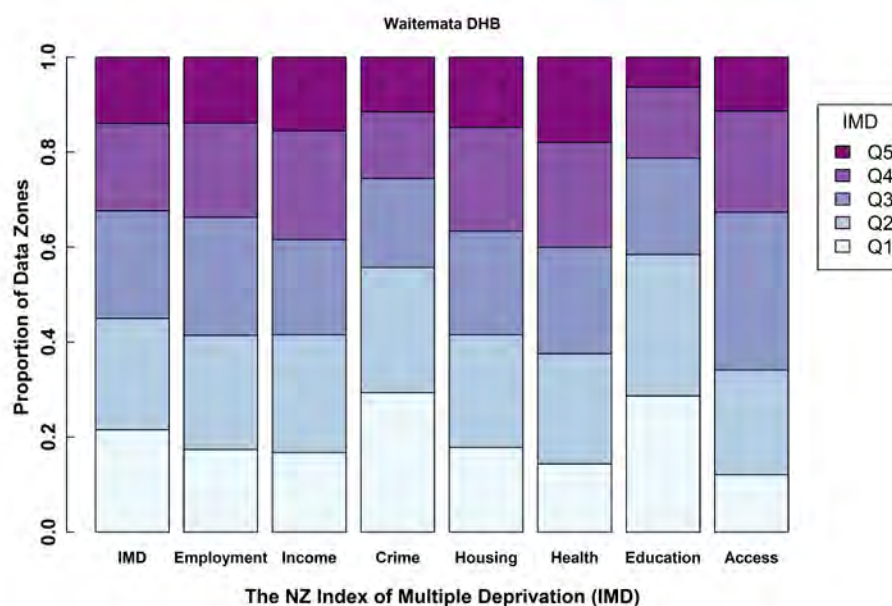


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the Waitemata DHB

Table 1 shows summary statistics by domain for the 102 WDHB data zones that were among NZ's 20% most deprived (Q5) for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Income (5323), Health (5254), Employment (5160) and Housing (5145) were contributing to high overall deprivation in these 102 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ³⁵ deprivation ranks by domain for 102 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4768 | 2758 | 3187 | 1458 | 2380 | 3391 | 3197 | 20 |
| Max | 5908 | 5932 | 5942 | 5951 | 5812 | 5953 | 5667 | 5092 |
| Median | 5175 | 5160 | 5323 | 3770 | 5145 | 5254 | 4610 | 2647 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 102 data zones in the WDHB with Q5 IMD deprivation

³⁵ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

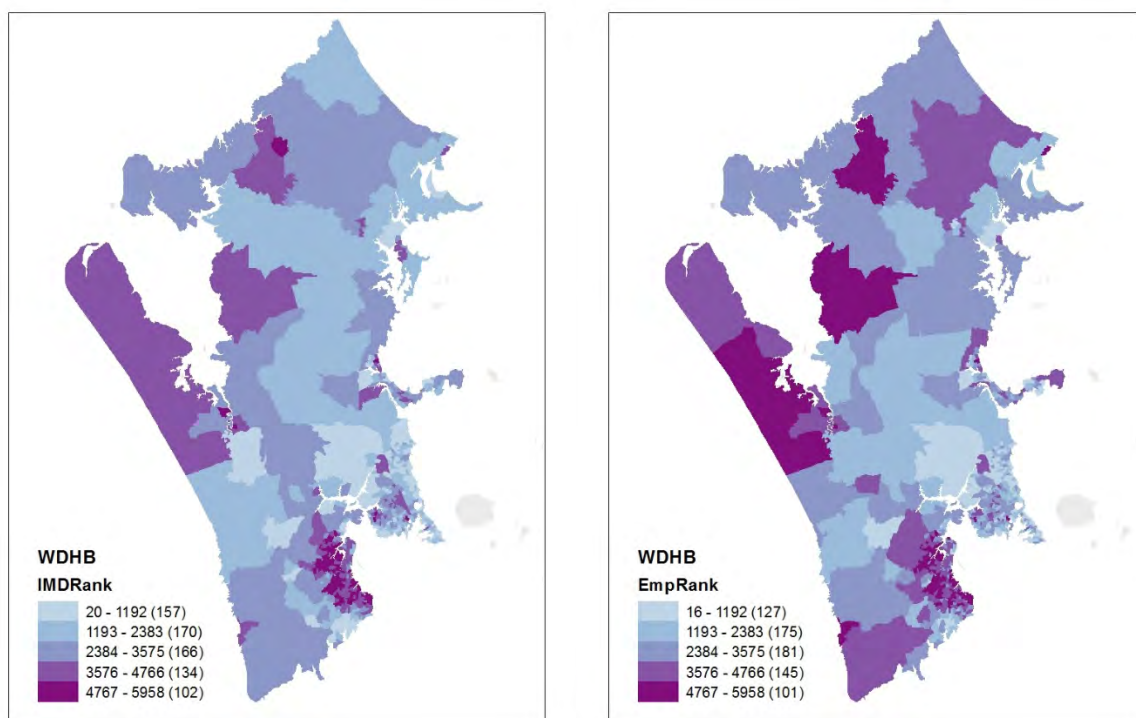


Figure 3. Distribution of overall IMD and employment deprivation in the WDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows relatively low levels of Q5 deprivation in the WDHB in 2013, with 13.9% (102/729) of data zones among the most deprived 20% in NZ (Q5), and 21.5% (157/729) in the least deprived 20% in NZ (Q1). The median IMD rank in the WDHB was 2626, 5.9% (353 ranks) better than the NZ median of 2979. The majority of Q5 data zones were in Henderson, Ranui, Sunnyvale and Glen Eden. There were also some in Beach Haven (3), Northcote (2), Helensville (1), Parakai (2), Oweria (1) and Wellsford (2). Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the WDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the WDHB, 13.9% (101/729) of data zones were in the 20% most deprived in NZ for the Employment Domain, and 17.4% (127/729) of data zones were among the least deprived 20%. The median employment deprivation rank in the WDHB was 2777, 3.4% (203 ranks) better than the NZ median of 2979. The distribution of Q5 employment deprivation followed a similar pattern to overall IMD deprivation, except that some Q5 data zones were in areas such as Piha, Muriwai, Parakai, the Kaipara Coast and Wellsford.

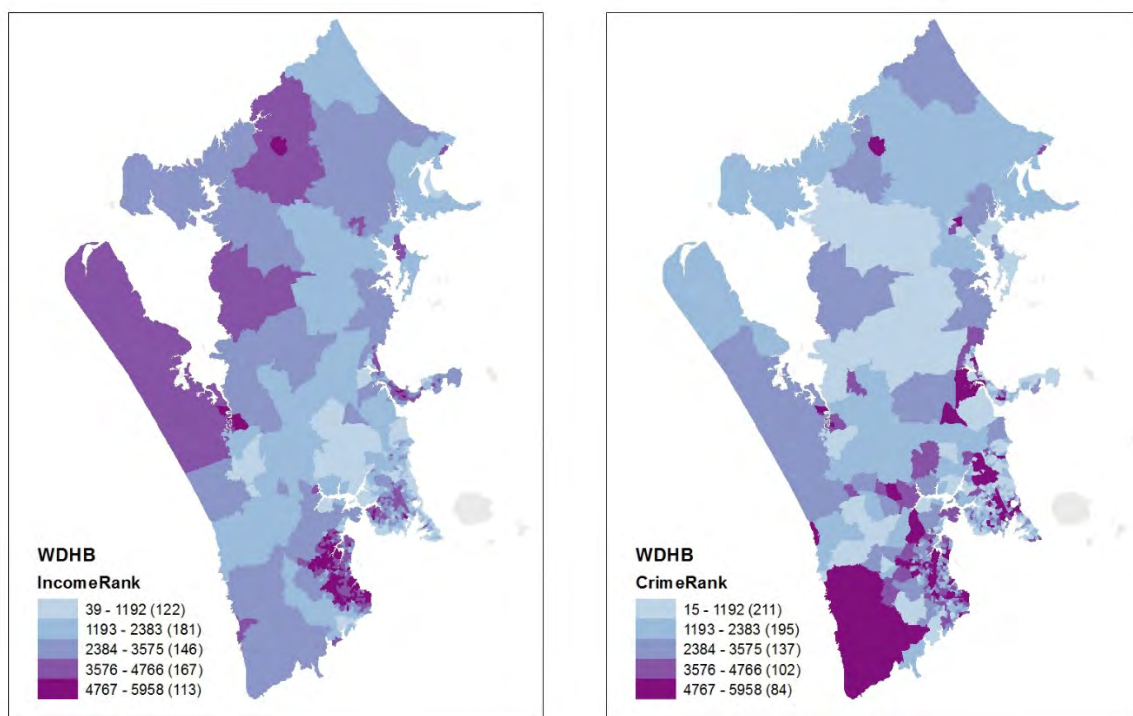


Figure 4. Distribution of income and crime deprivation in the WDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the WDHB, 15.5% (113/729) of data zones were among NZ's 20% most income deprived, and 16.7% (122/729) were among the 20% least income deprived. The median income deprivation rank in the WMDHB was 2835, 2.4% (144 ranks) better than the NZ median. The distribution of large rural data zones with Q5 income deprivation shows a very similar pattern to overall (IMD) deprivation, and the same is true of urban West Auckland and the North Shore when you zoom in to these areas.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the WDHB, 11.5% (84/729) of data zones were among the most deprived 20% for the Crime Domain, while 29.4% (214/729) were among the least deprived 20%. The median crime deprivation rank in the WDHB was 2022, 16.1% (958 ranks) better than the NZ median. Q5 rates of crime victimization occurred in urban areas such as Kumeu, Henderson, Te Atatu South, Ranui, Swanson, Chatswood, Northcote and Albany. They also occurred in more rural areas such as Anawhata, Piha, Karekare, Muriwai, Silverdale, Wellsford, Warkworth, Parakai and Helensville.

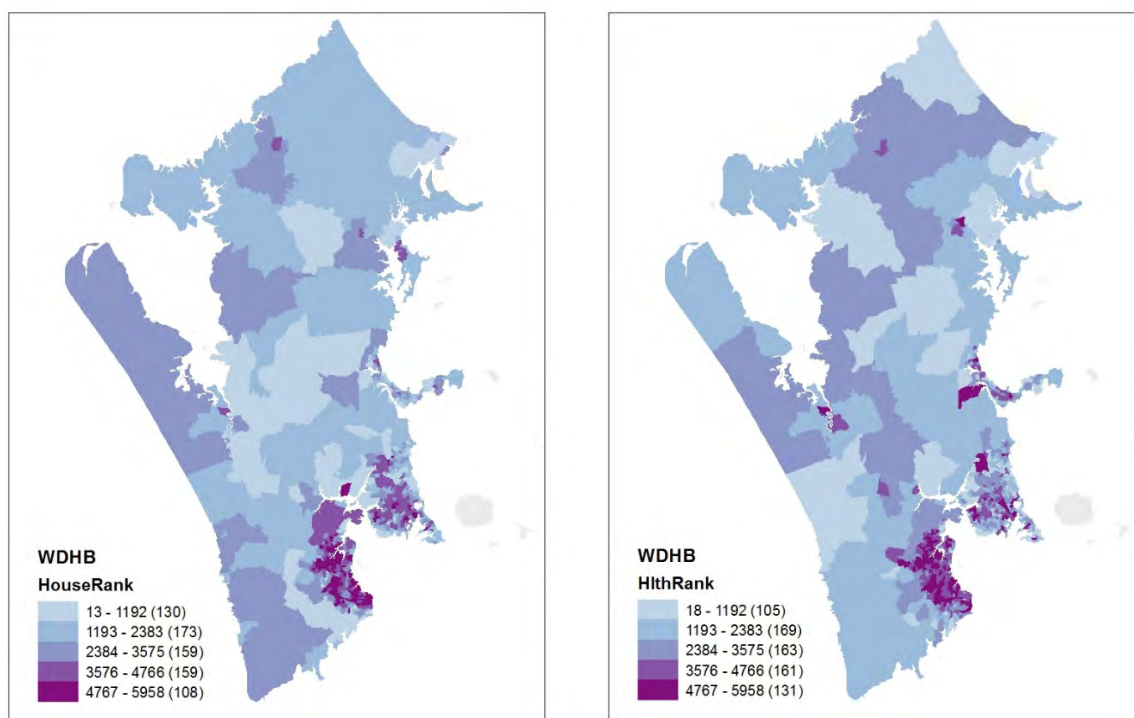


Figure 5. Distribution of housing and health deprivation in the WDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of weighting) and rented dwellings (40%) in 2013. In the WDHB, 14.8% (108/729) of data zones were among the most deprived 20% in NZ, and 17.8% (130/729) of data zones were in the least deprived 20%. The median housing deprivation rank in the WDHB was 2854, 2.1% (125 ranks) better than the NZ median. High (Q5) levels of housing deprivation occurred exclusively in urban areas, except for the rural area around Paremoremo. There were 16 Q5 data zones in the urban North Shore and 91 in urban West Auckland.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the WDHB, 18.0% (131/729) of data zones were among the 20% most health deprived in NZ, and 14.4% (105/729) were among the least deprived 20%. The median health deprivation rank in the WDHB was 2968, 0.2% (11 ranks) better than the NZ median. High (Q5) levels of health deprivation occurred primarily in urban parts of West Auckland and the North Shore, but they also occurred in Parakai, Silverdale, Manly, Orewa and Warkworth.

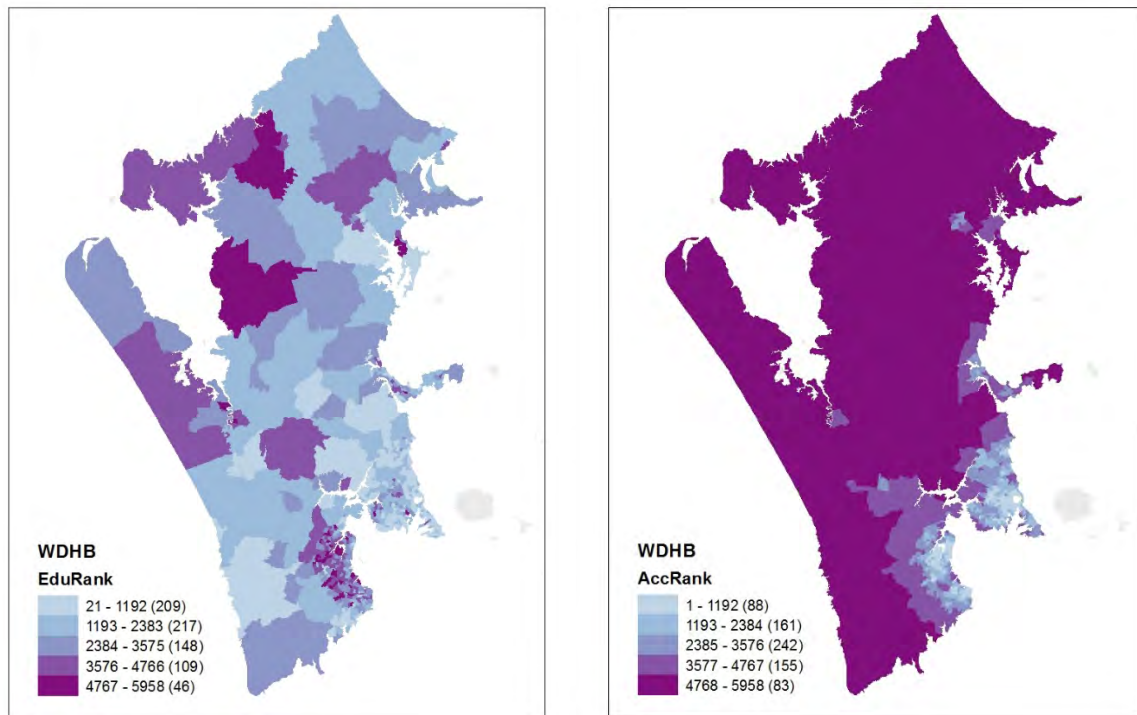


Figure 6. Distribution of education and access deprivation in the WDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the WDHB, only 6.3% (46/729) of data zones were among NZ's 20% most education deprived, while 28.7% (209/729) were among the least deprived 20%. The median education deprivation rank in the WDHB was 1950, 17.3% (1029 ranks) better than the NZ median. Data zones with Q5 education deprivation were distributed primarily in urban areas in the south-eastern parts of the DHB. Some also occurred in rural areas such as the Kaipara Coast, Mahurangi East and to the west of Wellsford.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the WDHB, 11.4% (83/729) of data zones were among NZ's 20% most access deprived, while 12.1% (88/729) were in NZ's 20% least deprived. The median access deprivation rank in the Waitemata DHB was 2958, 0.4% (21 ranks) better than the NZ median. Access to services was very good (Q1) in and around urban areas in the south-eastern part of the DHB and moderate (Q3) in parts of Whangaparaoa, Warkworth and Huapai. Access was poor in rural parts of the DHB.

Age profile of the Waitemata DHB

According to the 2013 census, the WDHB had a total population of 525,357 people living in 729 data zones, with a mean of 721 people each (range: 501 to 1086).

| Mean data zone proportions for five age groups in the WDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Waitemata DHB | 20.5% | 13.6% | 27.1% | 25.7% | 13.1% |
| New Zealand ³⁶ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 0.1% | -0.2% | 1.5% | -0.1% | -1.2% |

Table 2. Mean data zone proportions for five age groups in the WDHB

Table 2 shows that the age profile of the WDHB differs most from the national age profile in that it has 1.5% more people aged 25-44 and 1.2% fewer people aged 65+. Figure 7 shows the distribution of people in these two age groups.

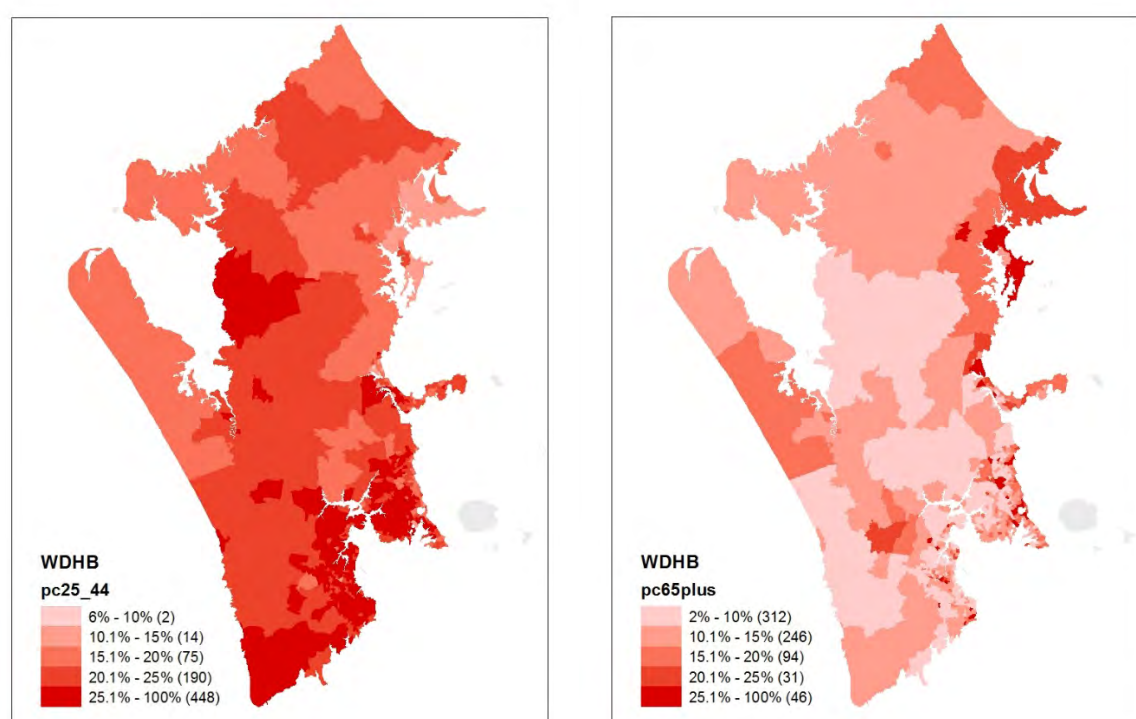


Figure 7. Distribution of people aged 65+ and people aged 25-44 in the WDHB

Ethnicity profile of the Waitemata DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the WDHB ranged from 0.0% to 31.1%. The overall proportion of Māori in the WDHB was 9.3%, much lower than the national proportion of

³⁶ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

14.9%. The proportion of Māori per data zone was greatest in a data zone located in Parakai (31.3%), followed by Beach Haven (30.0%) and Paremoremo (27.1%).

The proportion of Pacific ethnicity living in data zones within the WDHB in 2013 ranged from 0.0% to 48.5%. The overall proportion of Pacific ethnicity was 8.0%, which is higher than the national proportion of 7.3%. The proportion of Pacific was greatest in a data zone located in Ranui (48.5%), followed by Northcote (44.7%) and Henderson Valley (42.5%).

The percentage of New Zealand European and Other ethnicities (NZE0) living in data zones within the WDHB ranged from 47.7% to 100.0%. The overall proportion of NZEO was 91.4%, which is greater than the national proportion of 87.5%. The lowest proportions of NZEO (<50%) lived in Ranui and Northcote.

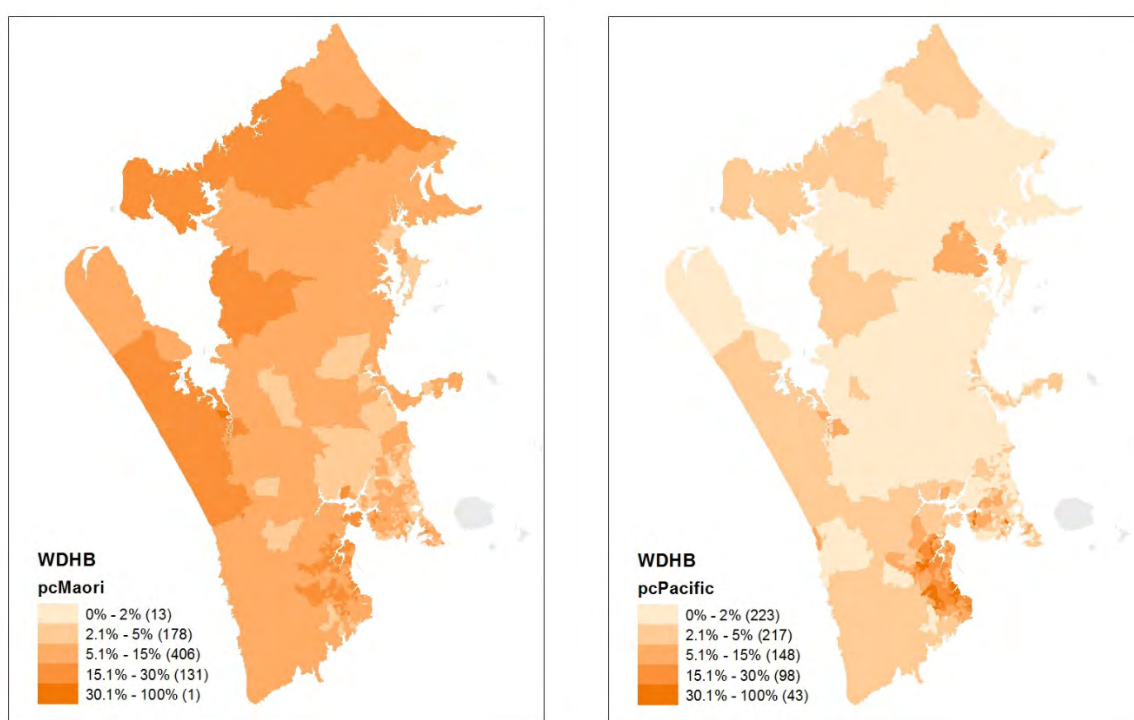
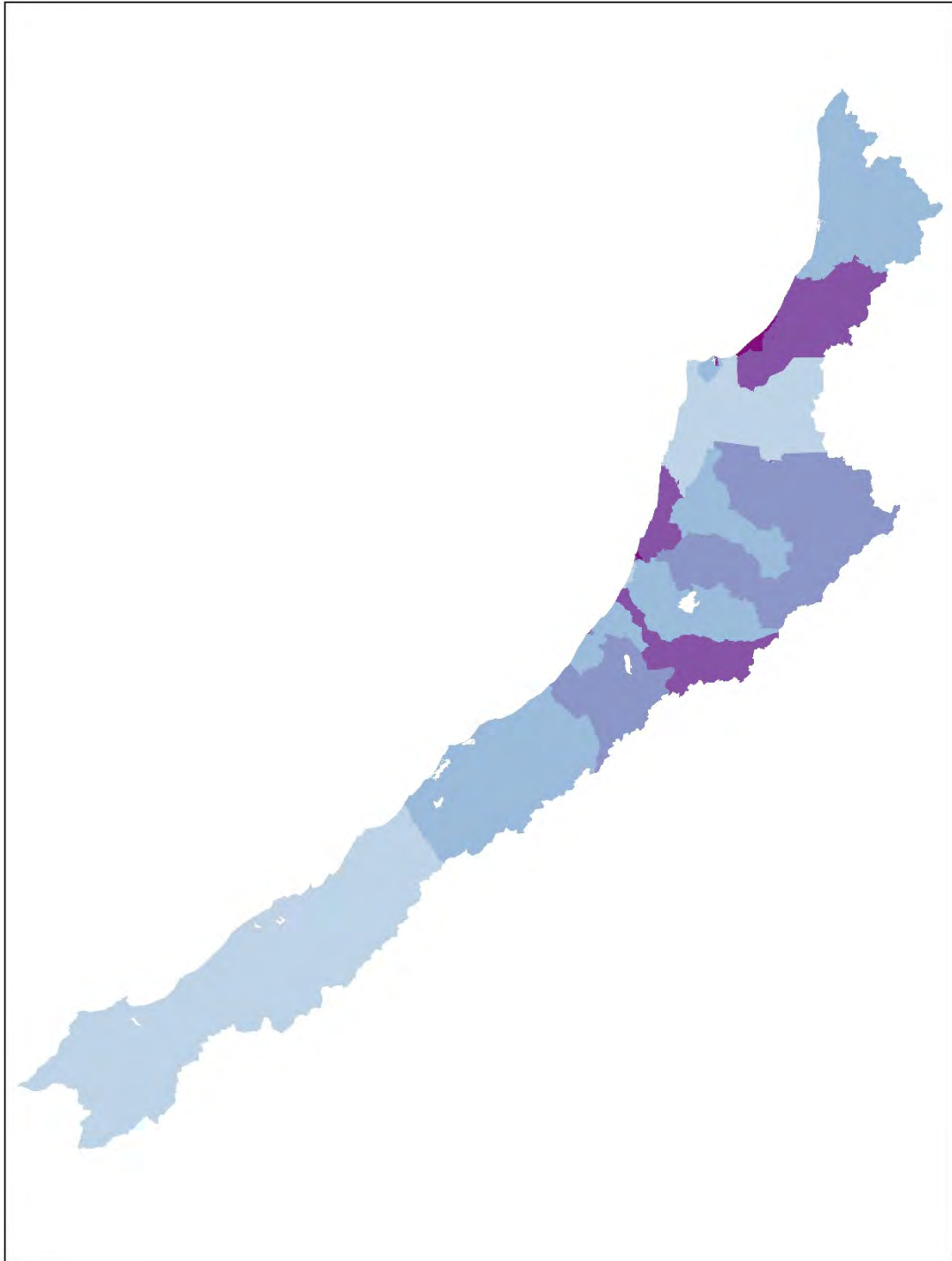


Figure 8. Distribution of Māori and Pacific people in the WDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](http://www.imd.org.nz).

West Coast DHB



West Coast DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the West Coast DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

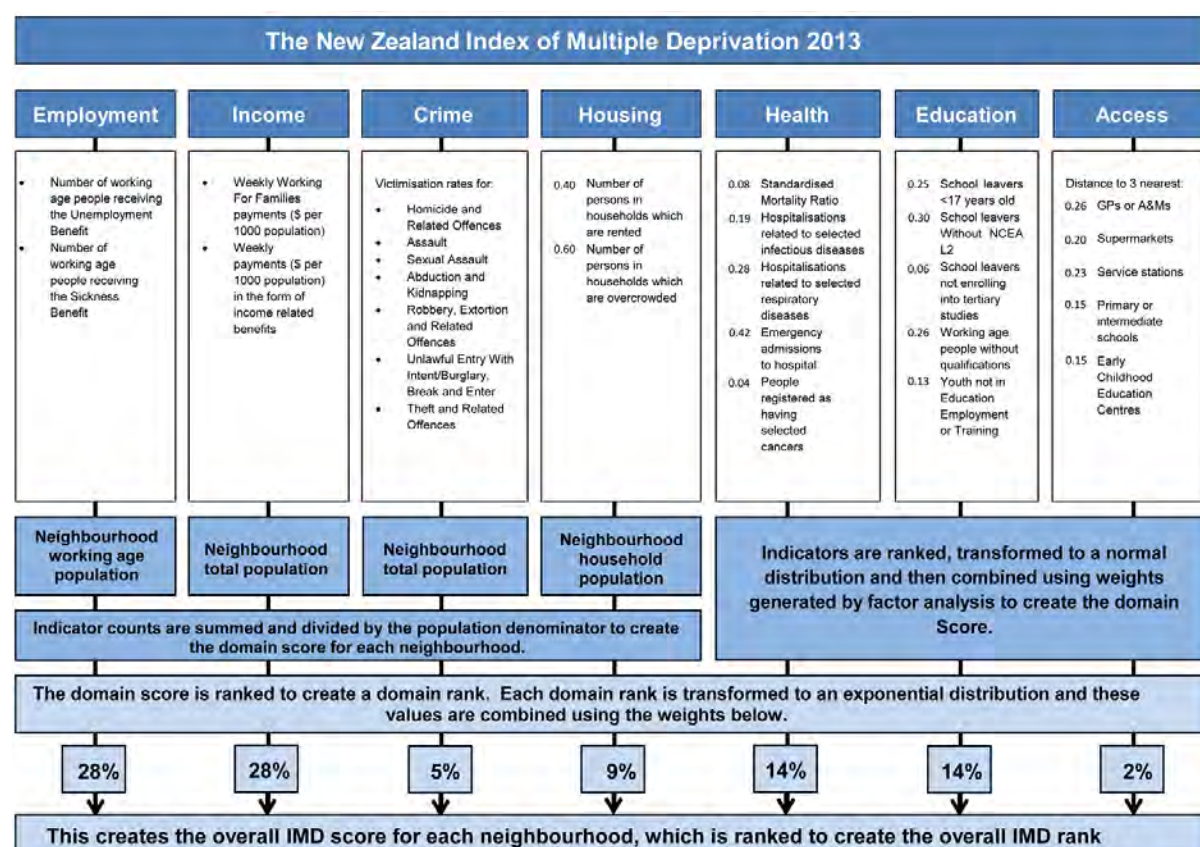


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the West Coast DHB (WCDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the WCDHB were the same as for all of NZ, we would see 20% of the WCDHB's 48 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was greater than 20% for the Employment, Education and Access domains. The proportion of data zones with Q4 deprivation was also greater than 20% for overall IMD deprivation, Employment, Income, Education and Access. The WCDHB had moderate levels of overall IMD deprivation, with 39.6% (19/48) of its data zones in Q4 or Q5.

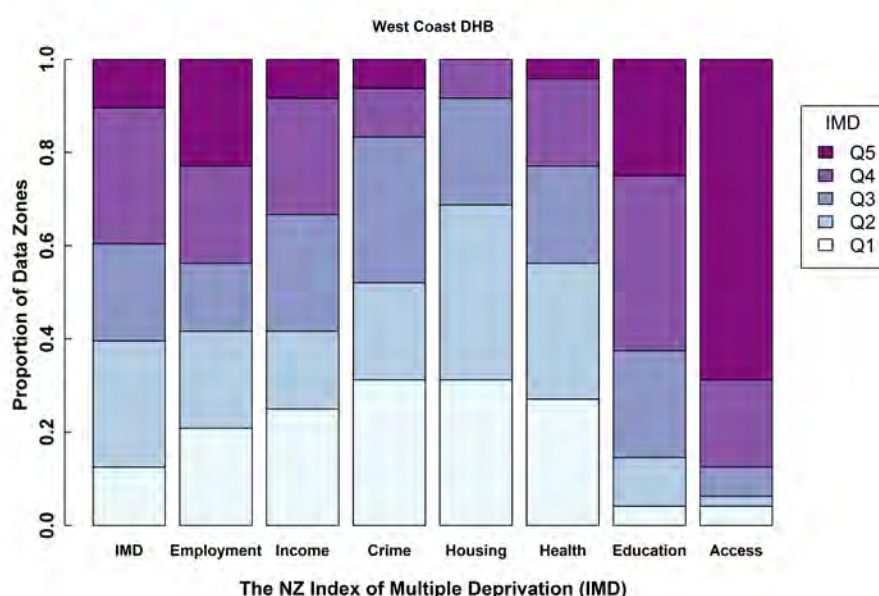


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the WCDHB

Table 1 shows summary statistics by domain for the five WCDHB data zones that were among NZ's 20% most deprived (Q5) for the overall IMD and reveals the contributions of different domains. High (Q5) median deprivation ranks for Education (5556) and Employment (5395) were contributing to high overall deprivation in these five data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ³⁷ IMD deprivation ranks by domain for 5 data zones with Q5 IMD | | | | | | | | |
|--|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4809 | 5040 | 3500 | 2496 | 1926 | 2226 | 3320 | 1002 |
| Max | 5110 | 5682 | 4863 | 5722 | 3897 | 5194 | 5843 | 5875 |
| Median | 5011 | 5395 | 4556 | 3704 | 3485 | 4522 | 5556 | 4462 |

Table 1. Minimum, maximum and median IMD deprivation ranks by domain for 5 WCDHB data zones with Q5 IMD deprivation

³⁷ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

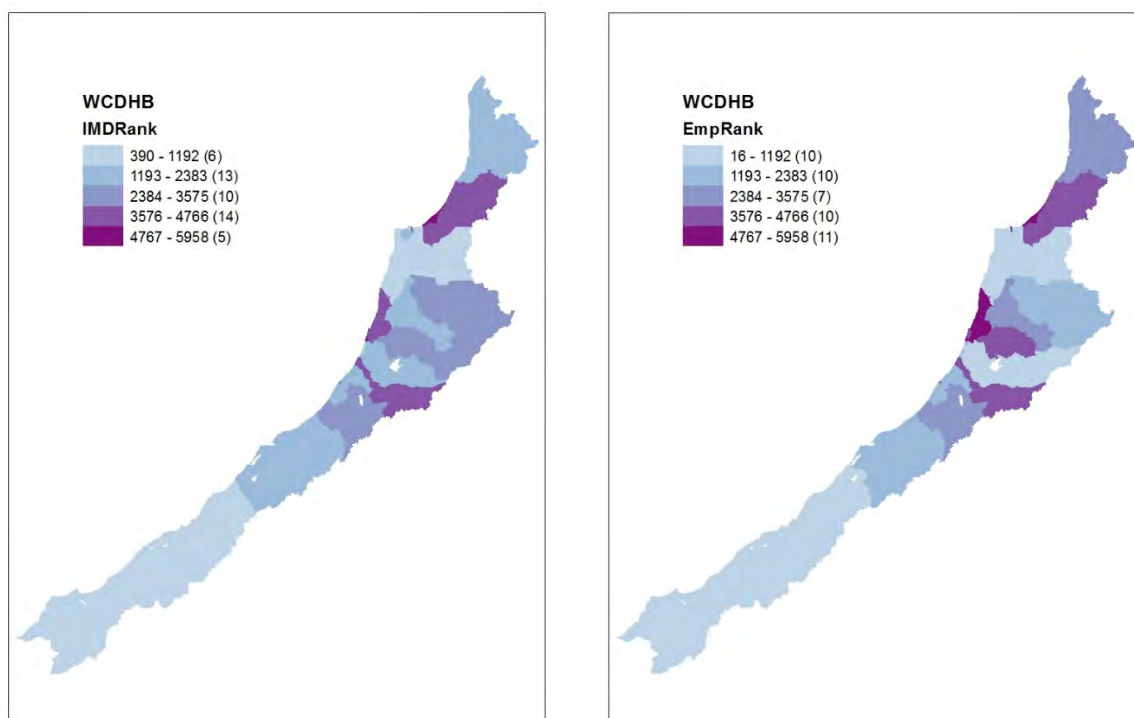


Figure 3. Distribution of overall IMD and employment deprivation in the WCDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows relatively low levels of Q5 deprivation in the WCDHB. Only 10.4% (5/48) of data zones were among the most deprived 20% in NZ (Q5), while 12.5% (6/48) of data zones were among the least deprived 20% in NZ (Q1). The median IMD rank in the WCIMD was 2955, 0.4% (25 ranks) better than the NZ median of 2979. Three of the five Q5 data zones were in Greymouth and the other two were in Westport and Waimangaroa. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the WCDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the WCDHB, 22.9% (11/48) of data zones were among the 20% most deprived in NZ for the Employment Domain, while 20.8% (10/48) were in the least deprived 20%. The median employment deprivation rank in the WCDHB was 3319, 5.7% (340 ranks) worse than the NZ median. The distribution of Q5 employment deprivation followed a similar pattern to overall IMD deprivation, but there were six more Q5 data zones. There were three in Westport, one in Waimangaroa, four in Greymouth, and one each in Runanga, to the west of Blackball (rural), and Hokitika.

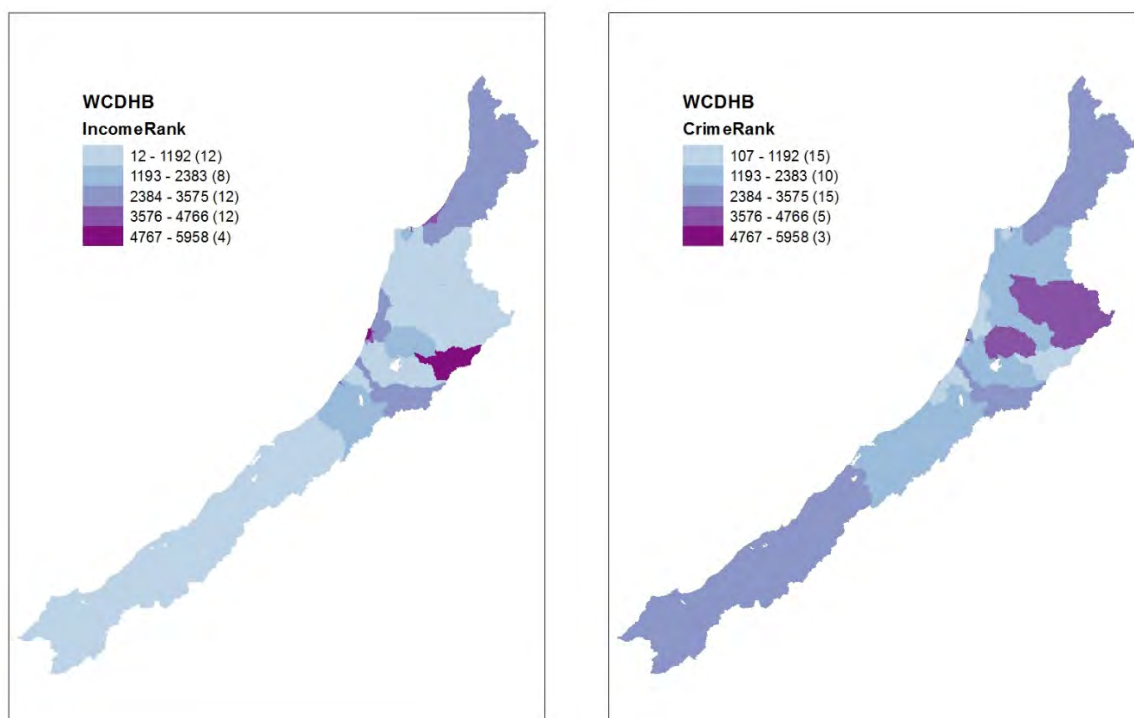


Figure 4. Distribution of income and crime deprivation in the WCDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the WCDHB, only 8.3% (4/48) of data zones were among NZ's 20% most income deprived, while 25.0% (12/48) of data zones were among the 20% least income deprived. The median income deprivation rank in the WCDHB was 2666, 5.3% (314 ranks) better than the NZ median. Three of the four Q5 income deprived data zones were located in Greymouth and one was a large rural data zone near Lake Haupiri.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the WCDHB, only 6.3% (3/48) of data zones were among NZ's 20% most deprived for the Crime Domain, while 31.3% (15/48) were among the 20% least deprived. The median crime deprivation rank in the WCDHB was 2333, 10.9% (647 ranks) better than the NZ median. High (Q5) rates of crime victimization occurred in two data zones in Westport and one in Greymouth. Q4 rates of crime victimization occurred in Westport, Greymouth and Hokitika, but also in two large rural data zones, one in and around Arnold Valley, and the other to the south of Reefton.

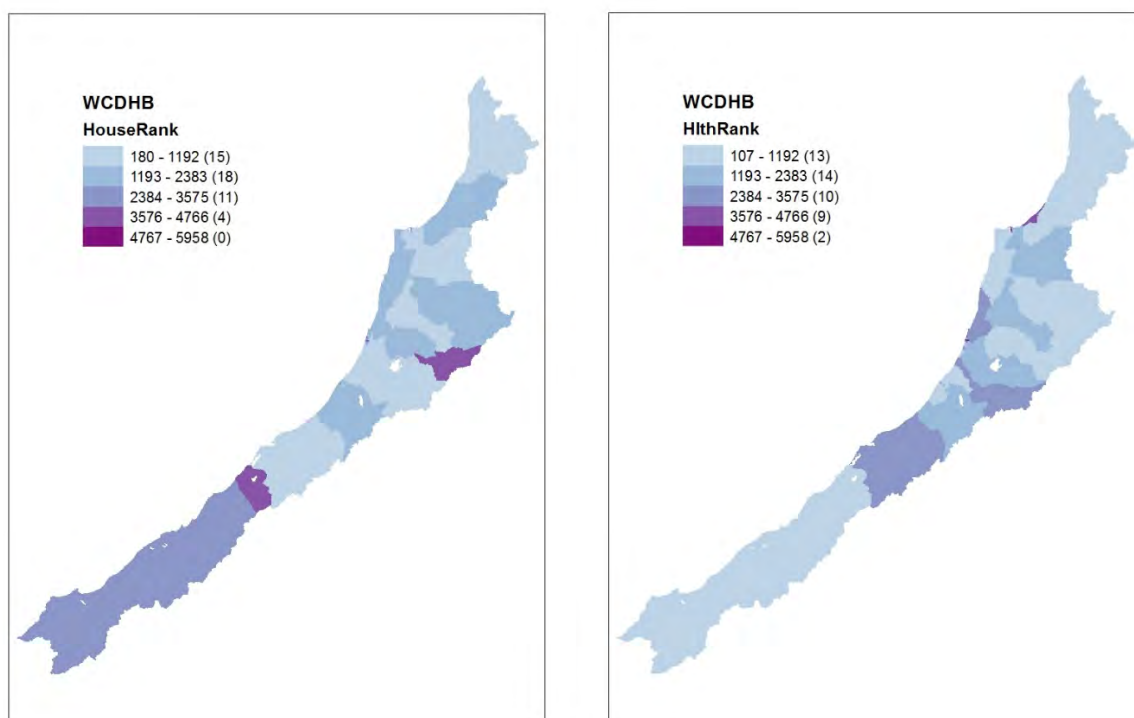


Figure 5. Distribution of housing and health deprivation in the WCDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%) in 2003. In the WCDHB, 0% (0/48) of data zones were among the most deprived 20% in NZ, while 31.3% (15/48) of data zones were among the least deprived 20%. The median housing deprivation rank in the WCDHB was 1893, 18.2% (1087 ranks) better than the NZ median. There were four data zones with Q4 housing deprivation in Franz Josef, Greymouth (2) and a large rural data zone near Lake Haupiri.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the WCDHB, only 4.2% (2/48) of data zones were among the 20% most health deprived in NZ, while 27.1% (13/48) were among the 20% least deprived. The median health deprivation rank in the WCDHB was 2272, 11.9% (707 ranks) better than the NZ median. The two data zones with Q5 health deprivation were located in Westport and Greymouth.

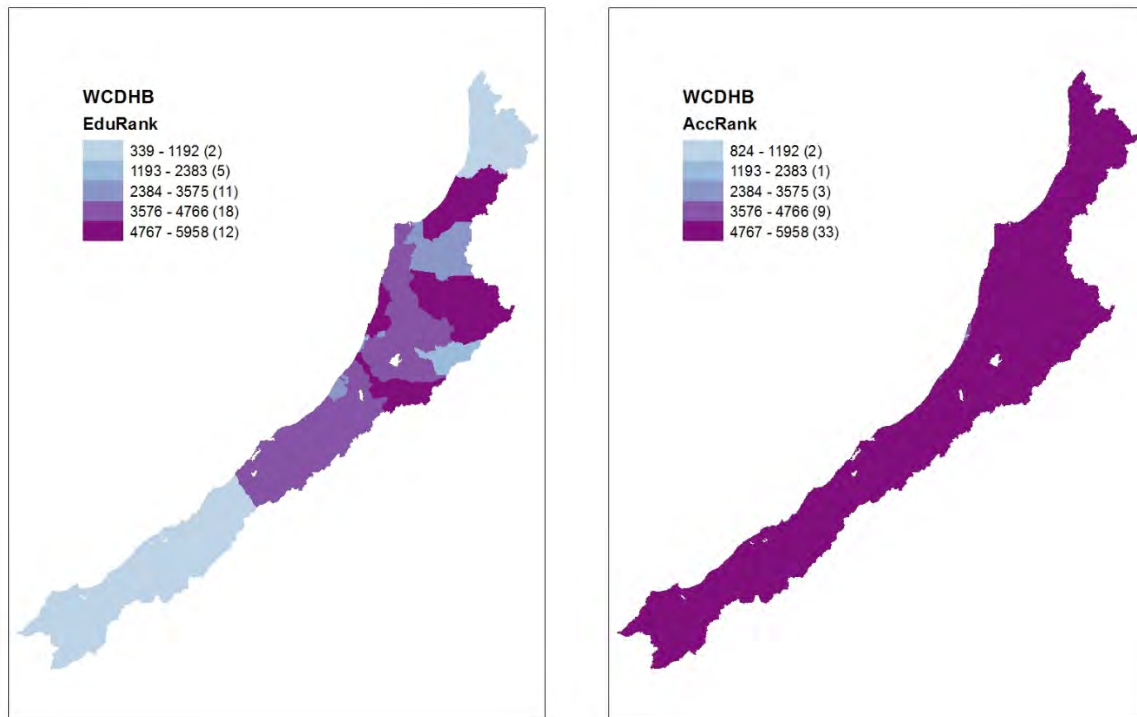


Figure 6. Distribution of education and access deprivation in the WCDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the WCDHB, 25.0% (12/48) of data zones were among NZ's 20% most education deprived, while only 4.2% (2/48) were in the least deprived 20%. The median education deprivation rank in the WCDHB was 3959, 16.4% (980 ranks) worse than the NZ median. High Q5 levels of education deprivation were located in four urban data zones (three in Greymouth and one in Westport) and in eight rural data zones: Waimangaroa, a large rural data zone near Waimarie, another to the south of Reefton, another to the west of Blackball, and one along the Arthur's Pass road.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the WCDHB, 66.8% (33/48) of data zones were among NZ's 20% most access deprived, while only 4.2% (2/48) were in NZ's 20% least deprived. The median access deprivation rank in the WCDHB was 5611, 44.2% (2632 ranks) worse than the NZ median. Predictably, the entire rural part of the WCDHB had Q5 access deprivation.

Age profile of the West Coast DHB

According to the 2013 census, the WCDHB had a total population of 32,142 people living in 48 data zones, with a mean of 670 people each (range: 510 to 933).

| Mean data zone proportions for five age groups in the WCDHB | | | | | |
|---|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| West Coast | 19.1% | 10.9% | 23.1% | 30.7% | 16.1% |
| New Zealand ³⁸ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | -1.3% | -2.9% | -2.5% | 4.9% | 1.8% |

Table 2. Mean data zone proportions for five age groups in the WCDHB

Table 2 shows that the age profile of the WCDHB differs most from the national age profile in that it has 2.9% fewer people aged 15-24 and 4.9% more people aged 45-64. Figure 7 shows the distribution of people in these two age groups.

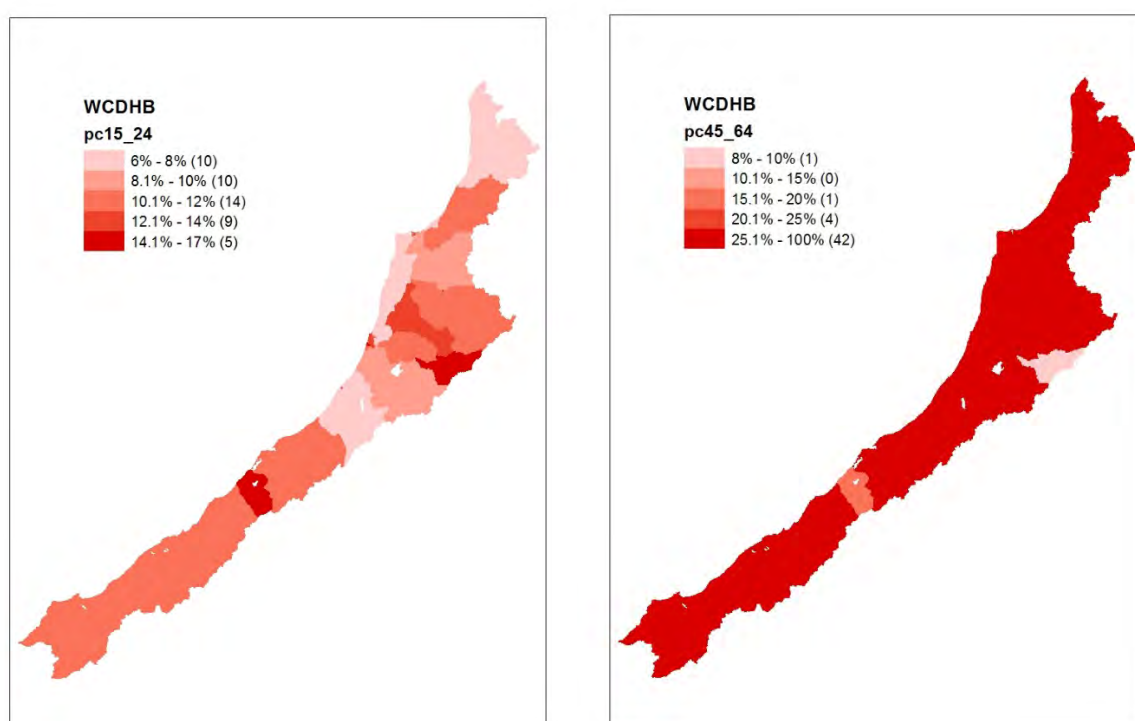


Figure 7. Distribution of people aged 15-24 and people aged 45-64 in the WCDHB

Ethnicity profile of the West Coast DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the WCDHB ranged from 5.4% to 20.8%. The overall proportion of Māori in the WCDHB was 10.6%, significantly lower than the national proportion

³⁸ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

of 14.9%. The proportion of Māori per data zone was greatest in two Hokitika data zones (20.8% and 19.1%).

The proportion of Pacific ethnicity living in data zones within the WCDHB in 2013 ranged from 0.0% to 3.4%. The overall proportion of Pacific ethnicity was 0.9%, much lower than the national proportion of 7.3%. The proportion of Pacific was greatest in a data zone located in Cobden (3.4%).

The percentage of New Zealand European and Other ethnicities (NZEO) living in data zones within the WCDHB ranged from 90.6% to 99.4%. The overall proportion of NZEO in the WCDHB was 96.0%. The lowest proportions of NZEO (<95%) were located in Cobden, Greymouth, Reefton and Westport, as well as in the entire southern part of the DHB, from just south of Franz Josef to well beyond Haast.

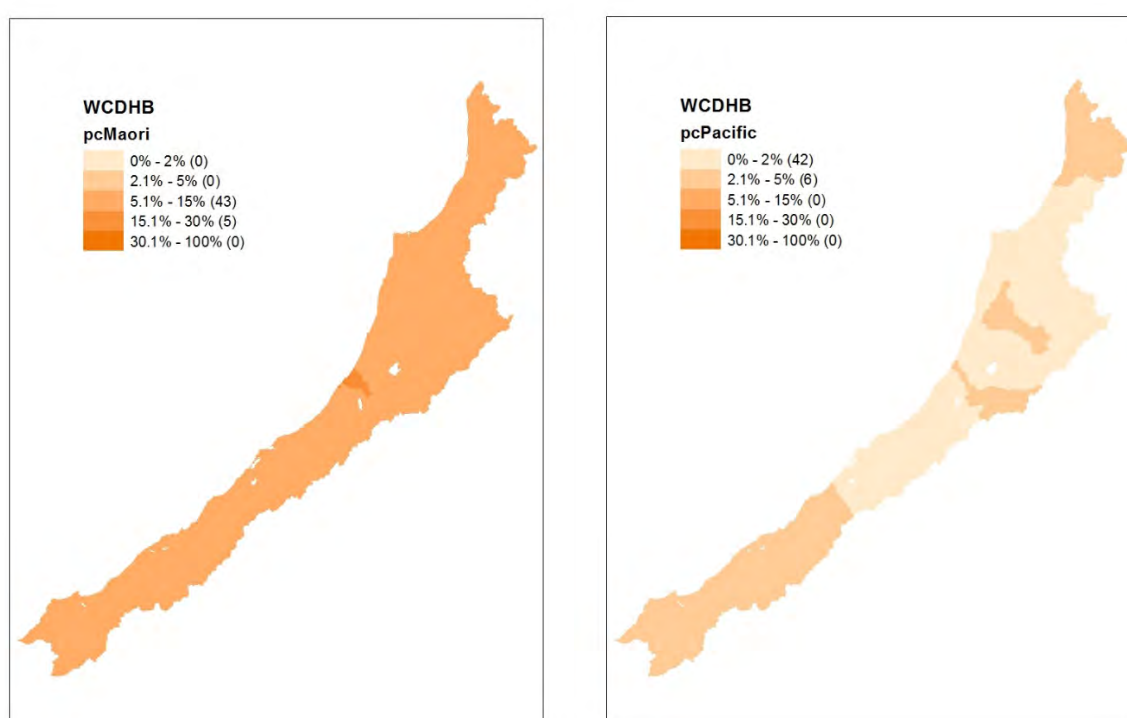
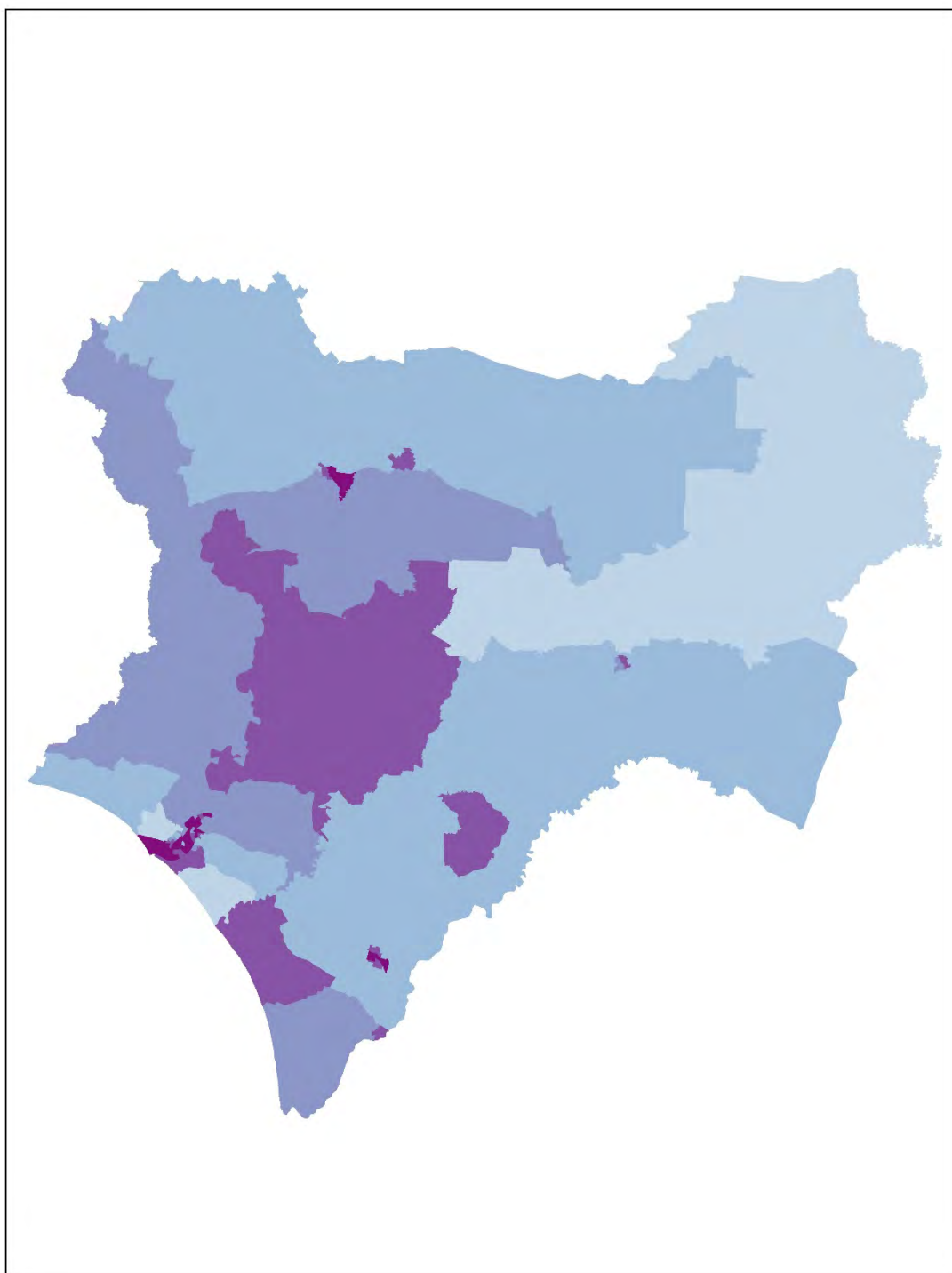


Figure 8. Distribution of Māori and Pacific people in the WCDHB

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at d.exeter@auckland.ac.nz. For downloadable spreadsheets of the IMD or NZ data zones, online interactive maps, publications and technical documentation, please go to the [IMD website](http://www.imd.ac.nz).

Whanganui DHB



Whanganui DHB, showing overall IMD deprivation with the most deprived areas shaded darkest

A deprivation and demographic profile of the Whanganui DHB

The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.

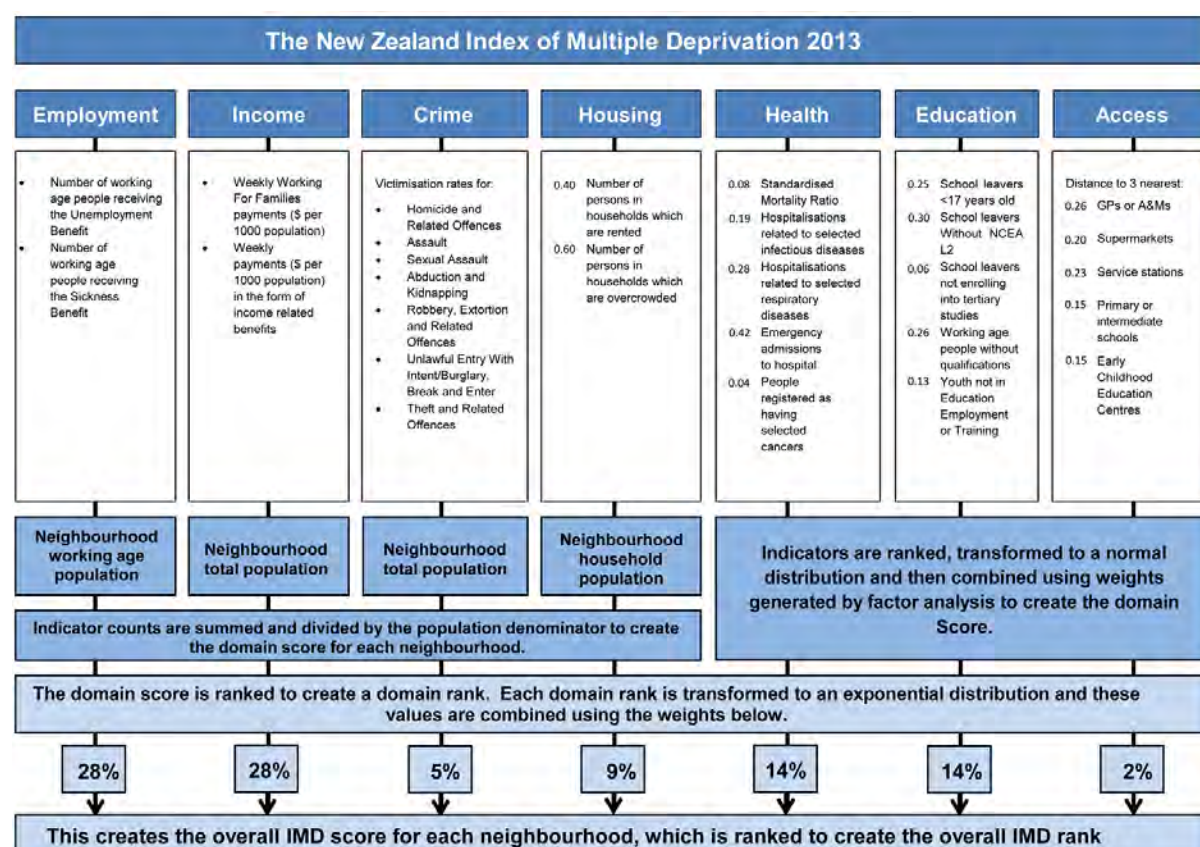


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Whanganui DHB (WDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances in the WDHB were the same as for all of NZ, we would see 20% of the WDHB's 90 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was greater than 20% for the IMD and all domains except for Housing. The proportion of data zones with Q4 deprivation was also greater than 20% except for Employment and Crime. The WDHB had high levels of overall IMD deprivation, with 58.9% (53/90) of its data zones in Q4 or Q5.

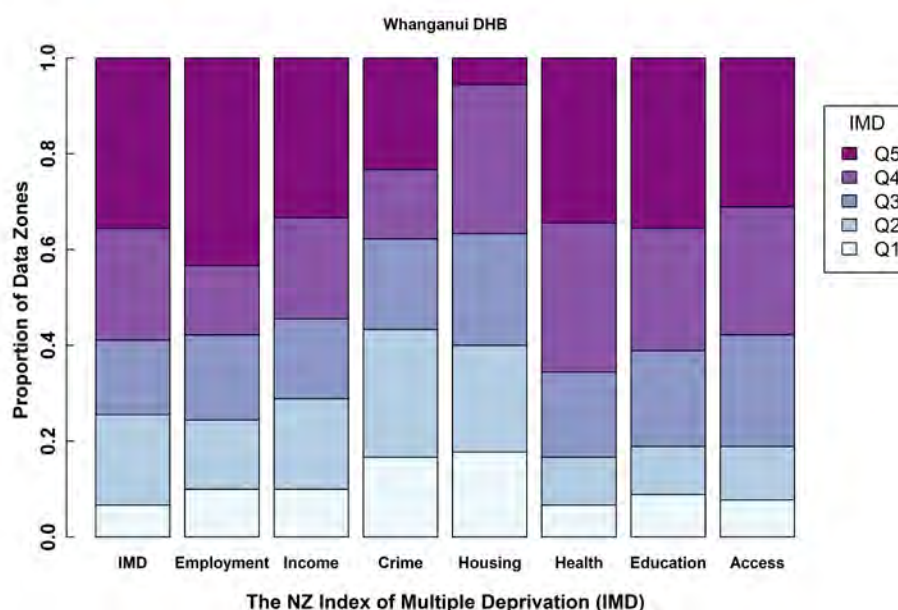


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the WDHB

Table 1 shows summary statistics by domain for 32 WDHB data zones that were among NZ's 20% most deprived (Q5) for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Income (5724), Employment (5448), Education (5324) Crime (5214) and Access (5189) were contributing to high overall IMD deprivation in these 32 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

| Min, max and median ³⁹ deprivation ranks by domain for 32 data zones with Q5 IMD | | | | | | | | |
|---|------|------------|--------|-------|---------|--------|-----------|--------|
| | IMD | Employment | Income | Crime | Housing | Health | Education | Access |
| Min | 4794 | 4443 | 4346 | 1338 | 2347 | 3886 | 2968 | 19 |
| Max | 5902 | 5934 | 5898 | 5929 | 5450 | 5896 | 5924 | 5477 |
| Median | 4004 | 5448 | 5724 | 5214 | 4626 | 4236 | 5324 | 5189 |

Table 1. Minimum, maximum and median deprivation ranks by domain for 32 data zones in the WDHB with Q5 IMD deprivation

³⁹ When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).

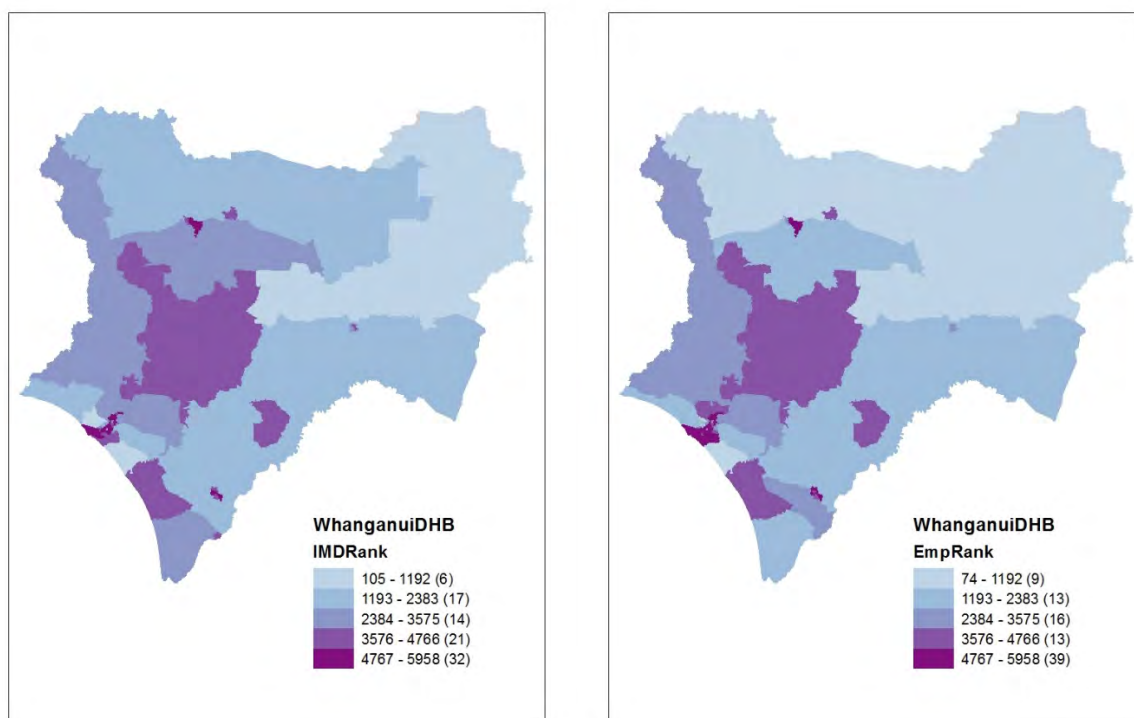


Figure 3. Distribution of overall IMD and employment deprivation in the WDHB

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows high levels of Q5 deprivation in the WDHB in 2013. 35.6% (32/90) of data zones were among the most deprived 20% in NZ (Q5), while only 6.7% (6/90) of data zones were in the least deprived 20% in NZ (Q1). The median IMD rank was 4004, 17.2% (1025 ranks) worse than the NZ median of 2979. The majority of Q5 data zones were in Whanganui, Whanganui East, Aramoho, College Estate and Castlecliff, but there were also some in Marton and Raetihi. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the WDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the WDHB, 43.3% (39/90) of data zones were among the 20% most deprived in NZ for the Employment Domain, while only 10.0% (9/90) were in the least deprived 20%. The median employment deprivation rank in the WDHB was 4260, 21.5% (1281 ranks) worse than the NZ median. The distribution of Q5 employment deprivation followed a similar pattern to overall IMD deprivation, except there were seven more Q5 data zones, six more in Whanganui and one more in Marton.

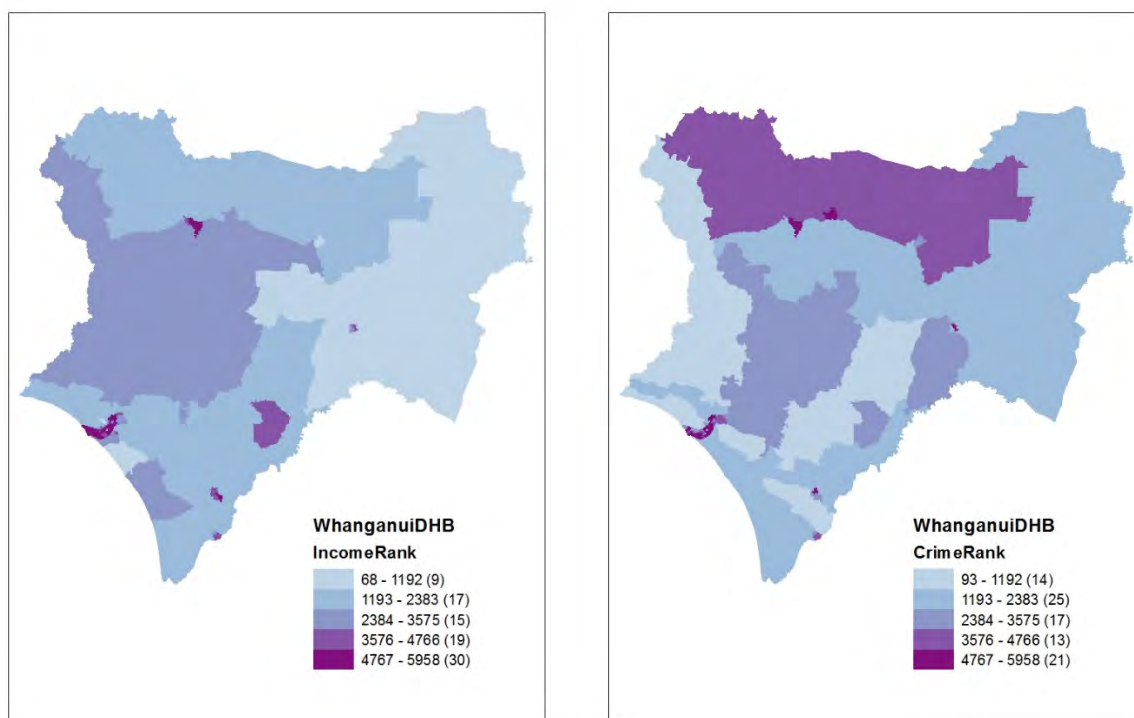


Figure 4. Distribution of income and crime deprivation in the WDHB

The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the WDHB, 33.3% (30/90) of data zones were among NZ's 20% most income deprived, while only 10% (9/90) were among the 20% least deprived. The median income deprivation rank in the WDHB was 3897, 15.4% (918 ranks) worse than the NZ median. The distribution of Q5 income deprivation followed a similar pattern to overall IMD deprivation, except there were two fewer Q5 data zones and two fewer large rural data zones with Q4 deprivation.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the WDHB, 23.3% (21/90) of data zones were among NZ's most deprived 20% for the Crime Domain, while 15.6% (14/90) were among the least deprived 20%. The median crime deprivation rank in the WDHB was 2858, 2.0% (121 ranks) better than the NZ median. The distribution of Q5 crime deprivation followed a similar pattern to overall IMD deprivation, except there were 11 fewer Q5 data zones. There were fewer data zones with Q5 crime deprivation in Whanganui and Marton, and more in Okahune and Taihape. Interestingly there is a large rural data zone stretching from Ruatiti and Horopito to beyond Waiouru with Q4 crime deprivation.

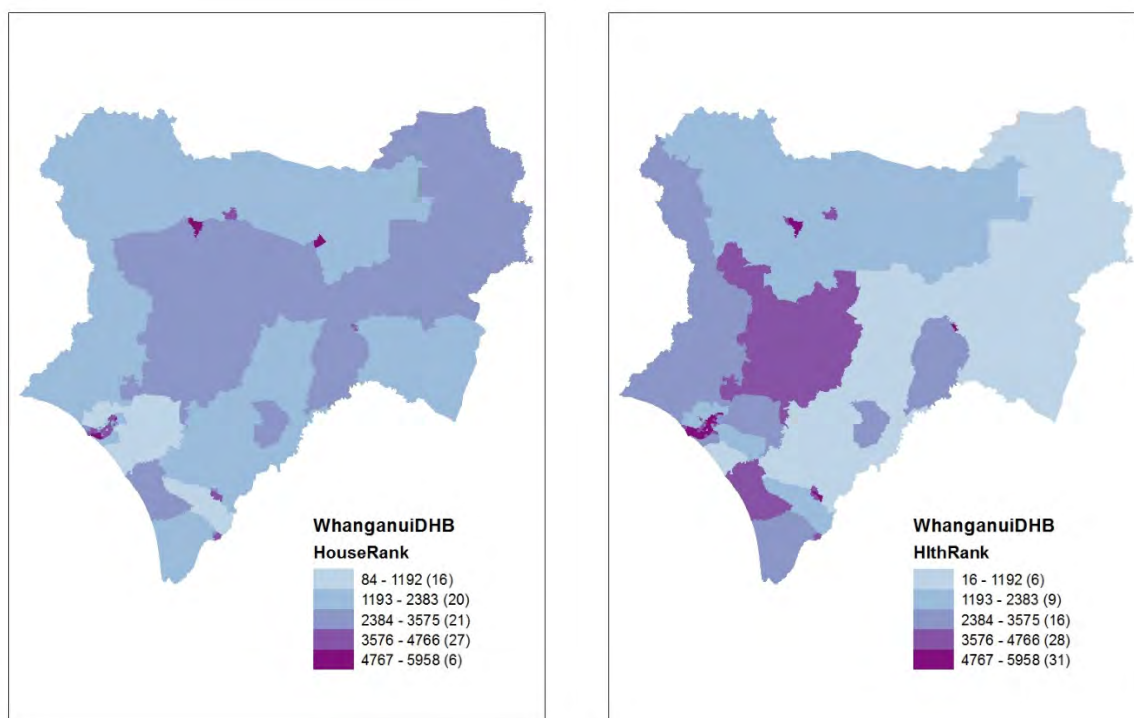


Figure 5. Distribution of housing and health deprivation in the WDHB

The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%) in 2013. In the WDHB, only 6.7% (6/90) of data zones were among the most deprived 20% in NZ, while 17.8% (16/90) were among the least deprived 20%. However, the median housing deprivation rank in the WDHB was 3039, 1.0% (60 ranks) worse than the NZ median. Four of the six data zones that had Q5 housing deprivation were located in Whanganui in Gonville (2), Castlehill and Wanganui East. Raetihi and Waiouru had one Q5 data zone each.

The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers. In the WDHB, 34.4% (31/90) of data zones were among the 20% most health deprived in NZ, while only 6.7% (6/90) were among the least deprived 20%. The median health deprivation rank in the WDHB was 4273, 21.7% (1294 ranks) worse than the NZ median. The 31 data zones with high (Q5) health deprivation were concentrated in the city of Whanganui, but there were four Q5 data zones in Raetihi, Marton (2) and Taihape. There was a very large rural data zone with Q4 health deprivation straddling Highway 4, and a smaller one near Rātana and Turakina.

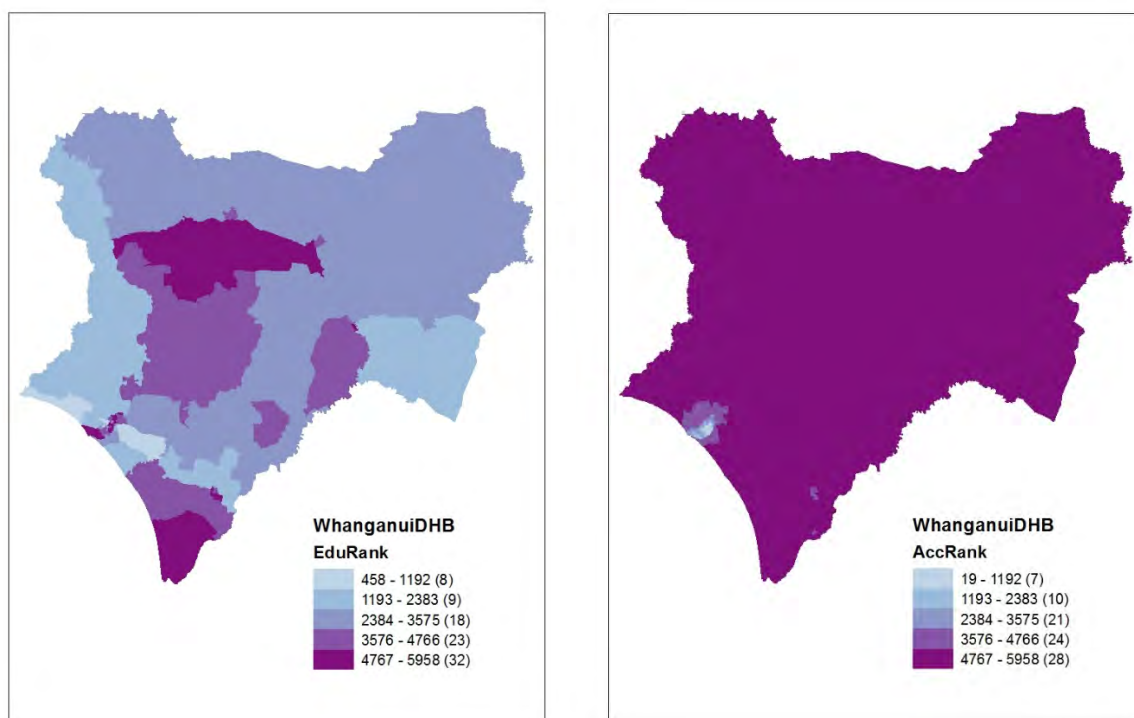


Figure 6. Distribution of education and access deprivation in the WDHB

The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET). In the WDHB, 35.6% (32/90) of data zones were among NZ's 20% most education deprived, while only 8.9% (8/90) were among the least deprived 20%. The median education deprivation rank in the WDHB was 4071, 18.3% (1092 ranks) worse than the NZ median. The distribution of education deprivation followed a similar pattern to overall IMD deprivation, but with the addition of two large rural data zones with Q5 education deprivation (one to the south of Raetihi stretching from Waipuna to Tangiwai and the other around Santoft), and two more with Q4 education deprivation (one south of Taihape and another southwest of Marton).

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the WDHB, 31.1% (28/90) of data zones were among NZ's 20% most access deprived, while only 7.8% (7/90) were in NZ's 20% least deprived. The median access deprivation rank in the WDHB was 4056, 18.1% (1077 ranks) worse than the NZ median. Predictably, the entire rural part of the WDHB had Q5 access deprivation.

Age profile of the Whanganui DHB

According to the 2013 census, the WDHB had a total population of 60,117 people living in 90 data zones, with a mean of 668 people each (range: 501 to 987).

| Mean data zone proportions for five age groups in the WDHB | | | | | |
|--|-------|-------|-------|-------|-------|
| Age group | 0-14 | 15-24 | 25-44 | 45-64 | 65+ |
| Whanganui DHB | 20.7 | 12.1 | 21.4 | 27.6 | 18.2 |
| New Zealand ⁴⁰ | 20.4% | 13.8% | 25.6% | 25.8% | 14.3% |
| Difference | 0.3% | 1.7% | -4.2% | 1.8% | 3.9% |

Table 2. Mean data zone proportions for five age groups in the WDHB

Table 2 shows that the age profile of the WDHB differs most from the national age profile in that it has 4.2% fewer people aged 25-44 and 3.9% more people aged 65+. Figure 7 shows the distribution of people in these two age groups.

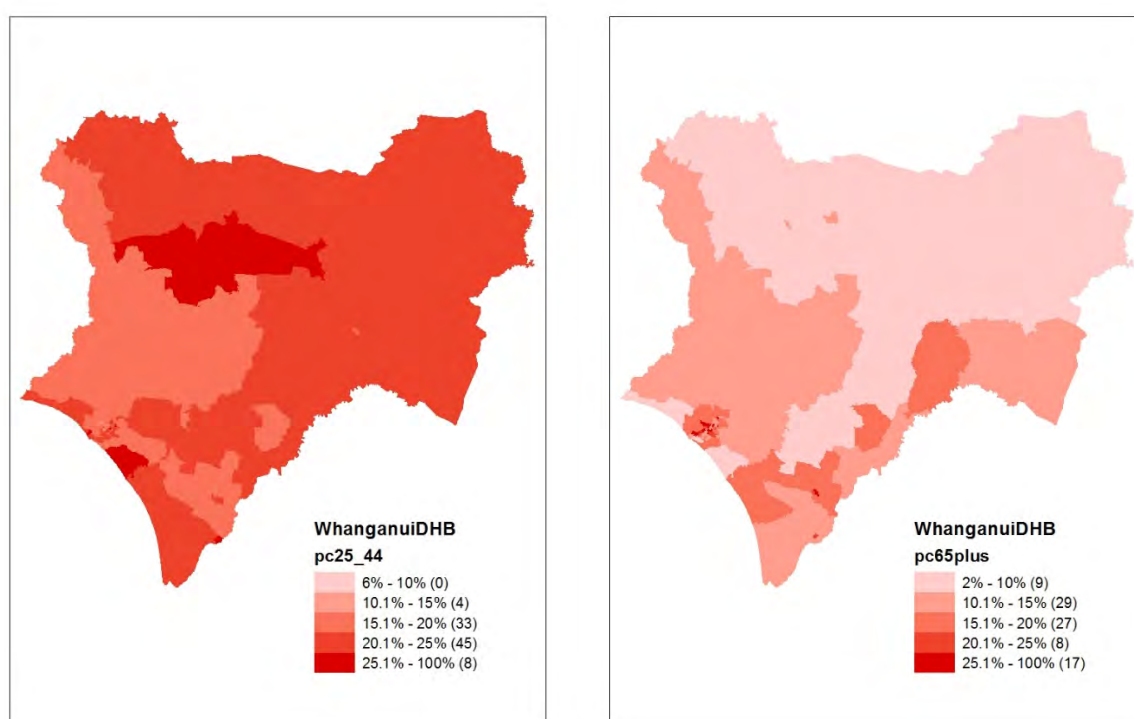


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the WDHB

Ethnicity profile of the Whanganui DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the WDHB ranged from 4.4% to 75.7%. The overall proportion of Māori in the WDHB was 24.7%, much higher than the national proportion of

⁴⁰ Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

14.9%. The proportion of Māori per data zone was greatest in a data zone located in Raetihi (75.7%), followed by Aramoho (71.2%), and there were high proportions of Māori (>50%) in Taihape and Rātana.

The proportion of Pacific ethnicity living in data zones within the WDHB in 2013 ranged from 0.0% to 13.7%. The overall proportion of Pacific ethnicity was 2.9%, much lower than the national proportion of 7.3%. The proportion of Pacific ethnicity was greatest in two data zones in Marton (13.7% and 9.5%), and there were relatively high proportions (>7%) in Castlehill, Gonville, Whanganui and Aramoho.

The percentage of New Zealand European and Other ethnicities (NZE0) living in data zones within the WDHB ranged from 42.0% to 98.3%. The overall proportion of NZEO was 84.8%, slightly lower than the national proportion of 87.5%. The lowest proportion of NZEO lived in Raetihi (42.0%).

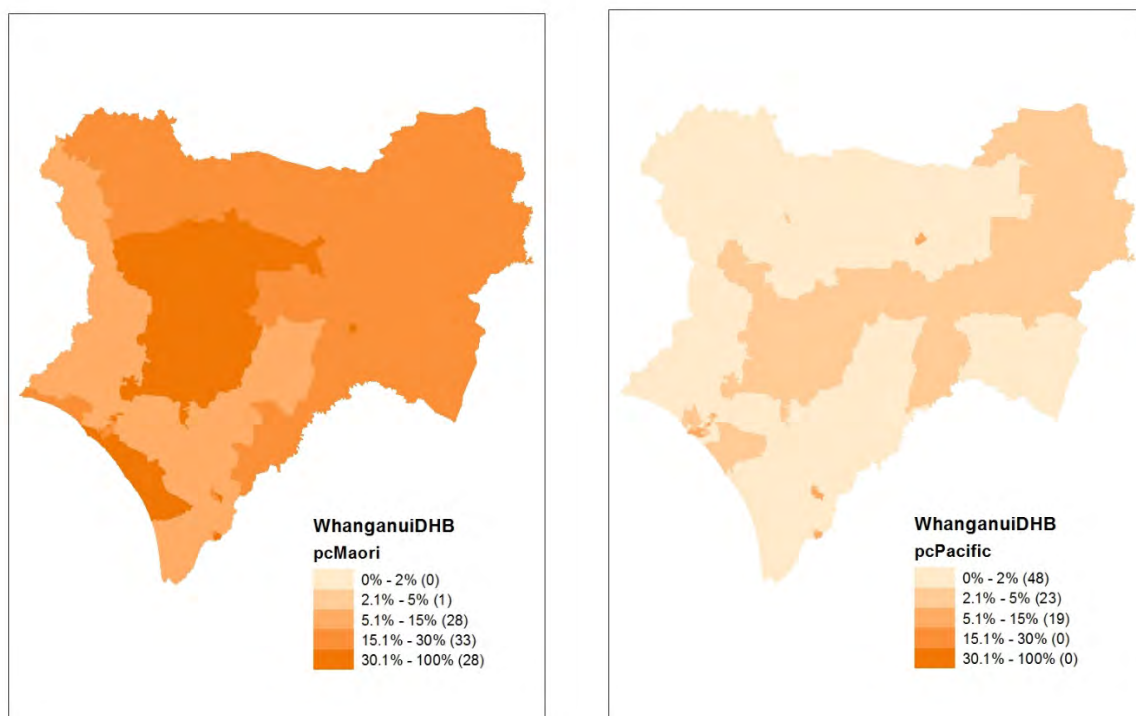


Figure 8. Distribution of Māori and Pacific people in the WDHB

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