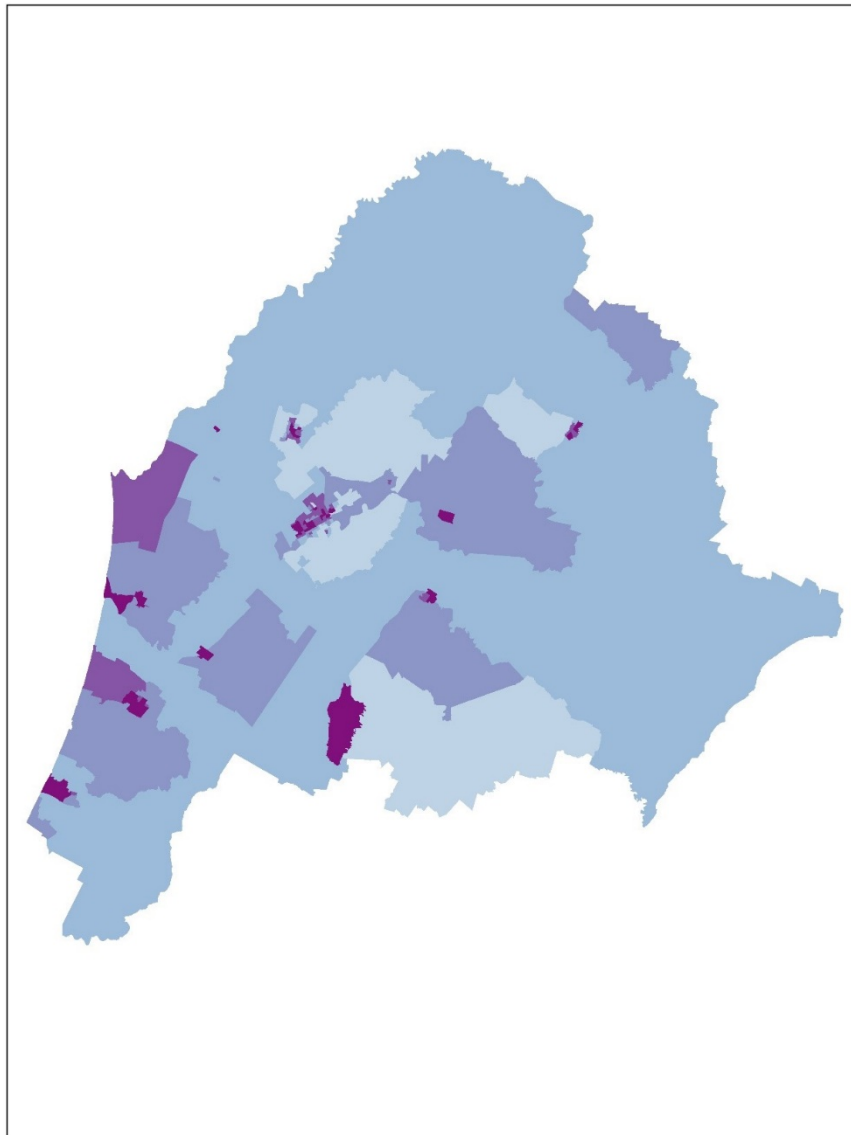


A deprivation and demographic profile of the MidCentral DHB



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

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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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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.

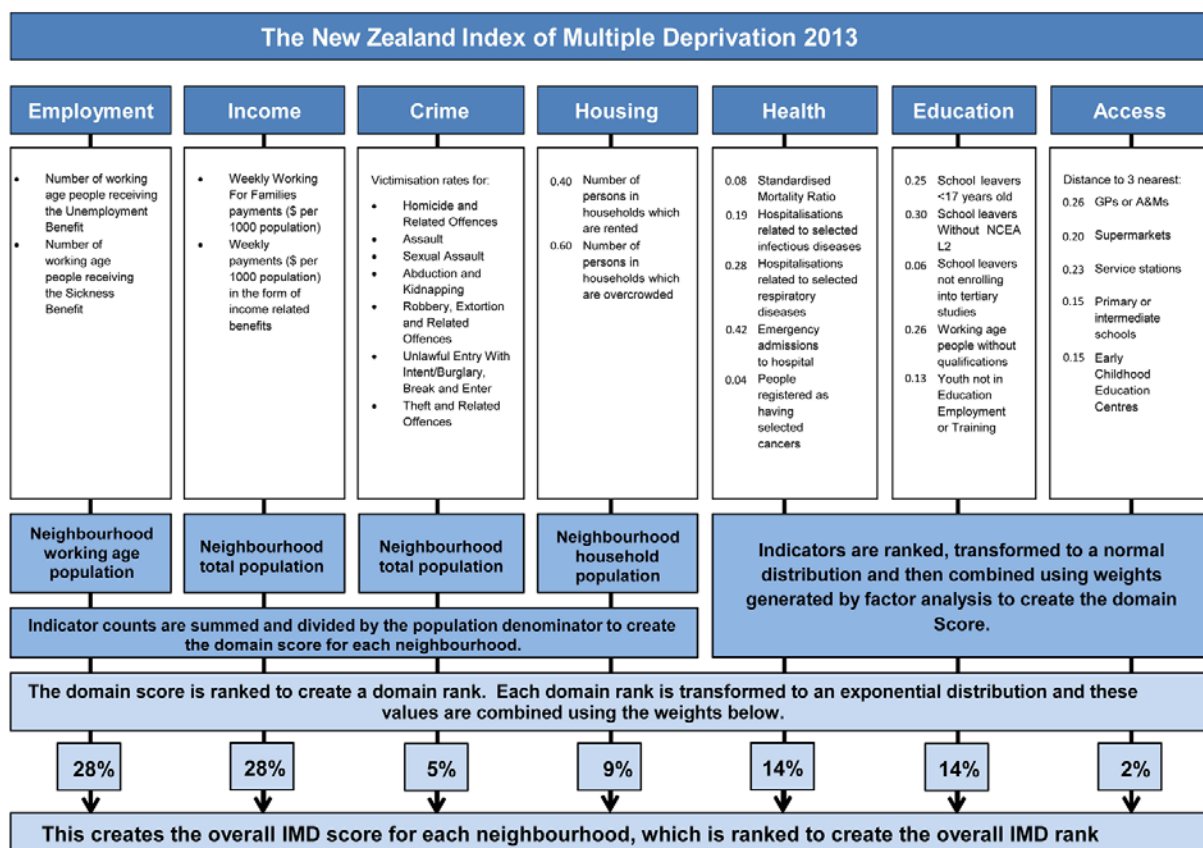


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

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.

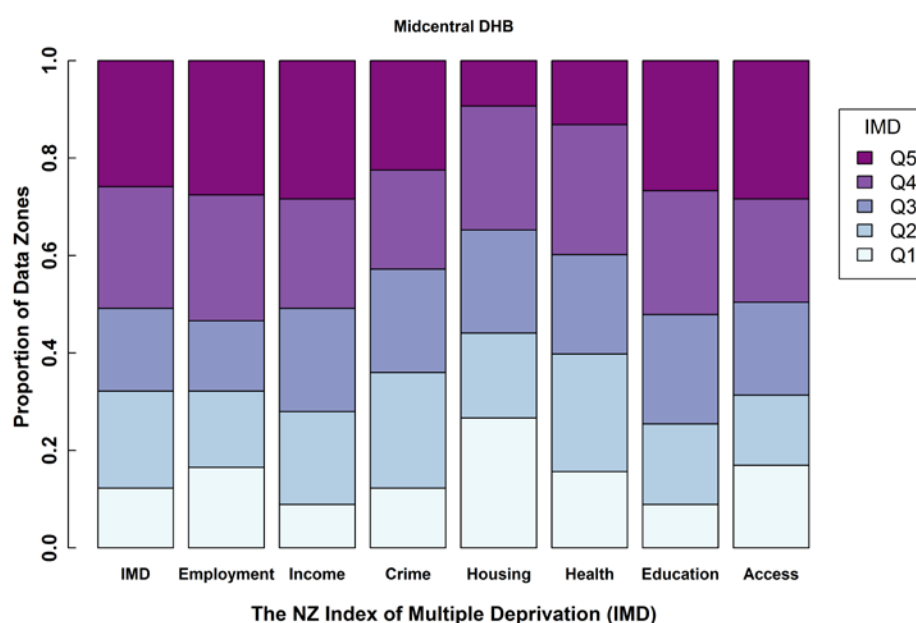


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the MCDHB

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 ¹ 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

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).

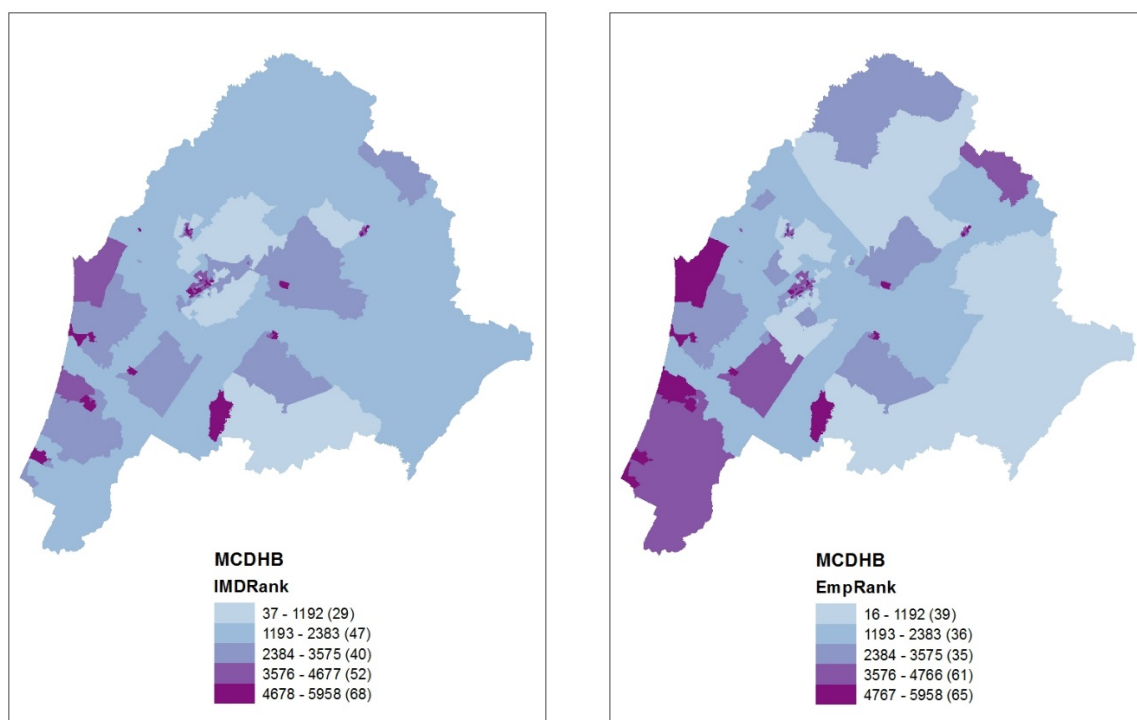


Figure 3. Distribution of overall IMD and employment deprivation in the MCDHB

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.

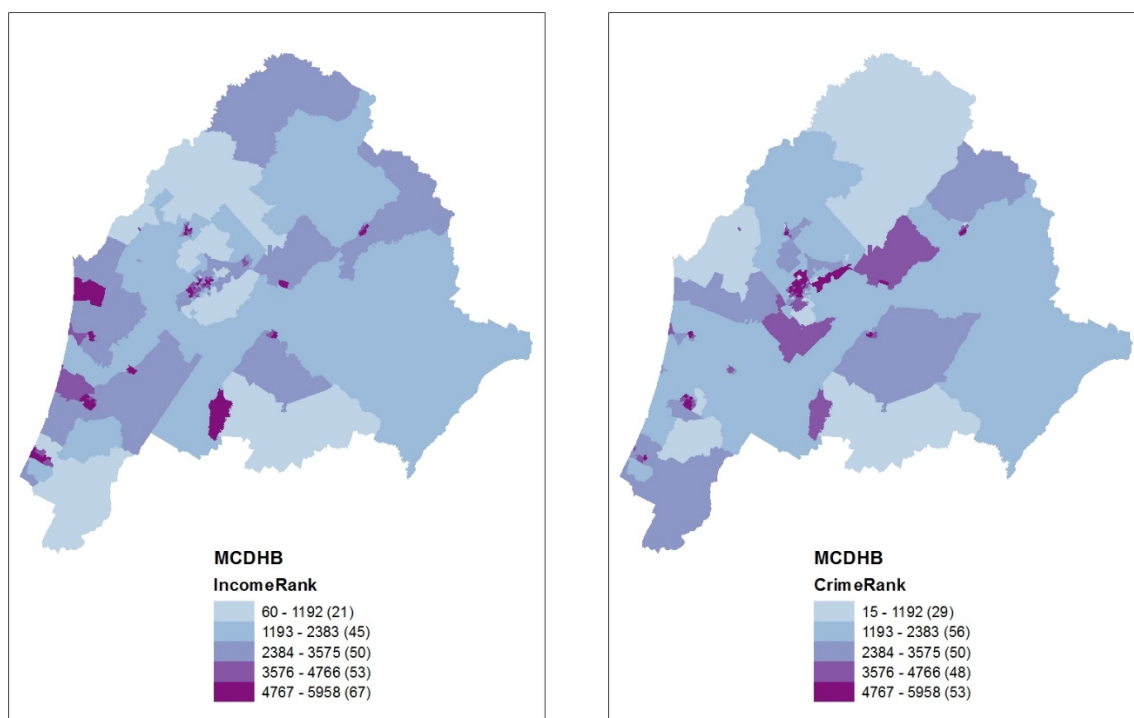


Figure 4. Distribution of income and crime deprivation in the MCDHB

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.

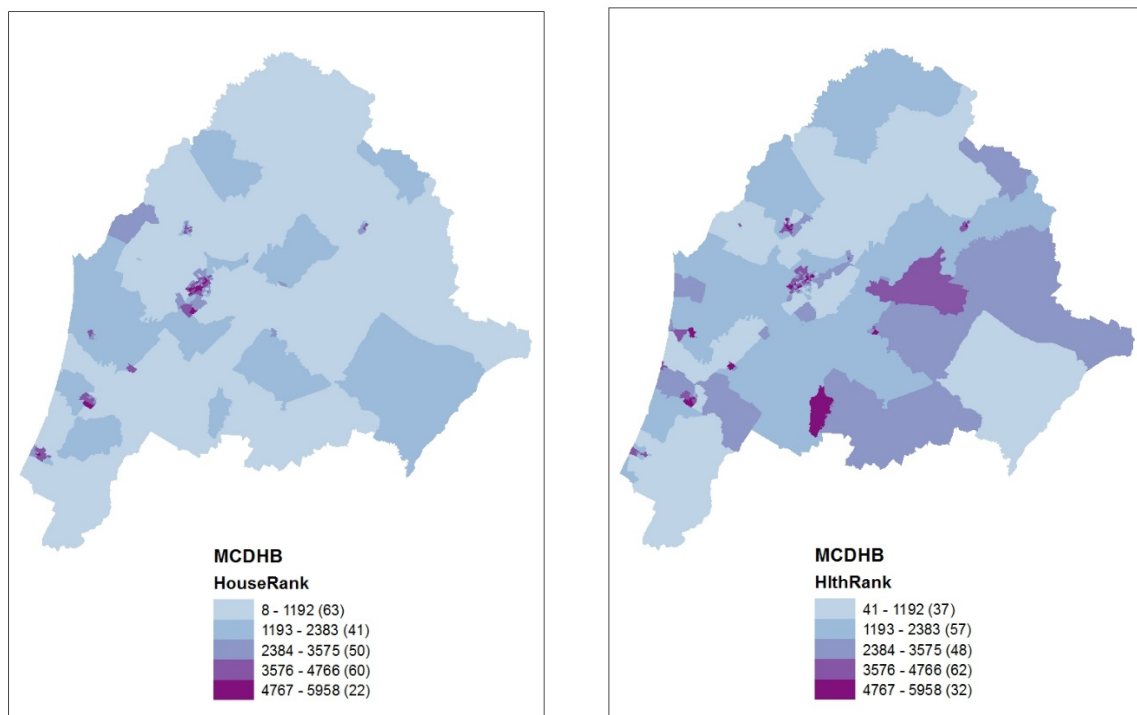


Figure 5. Distribution of housing and health deprivation in the MCDHB

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.

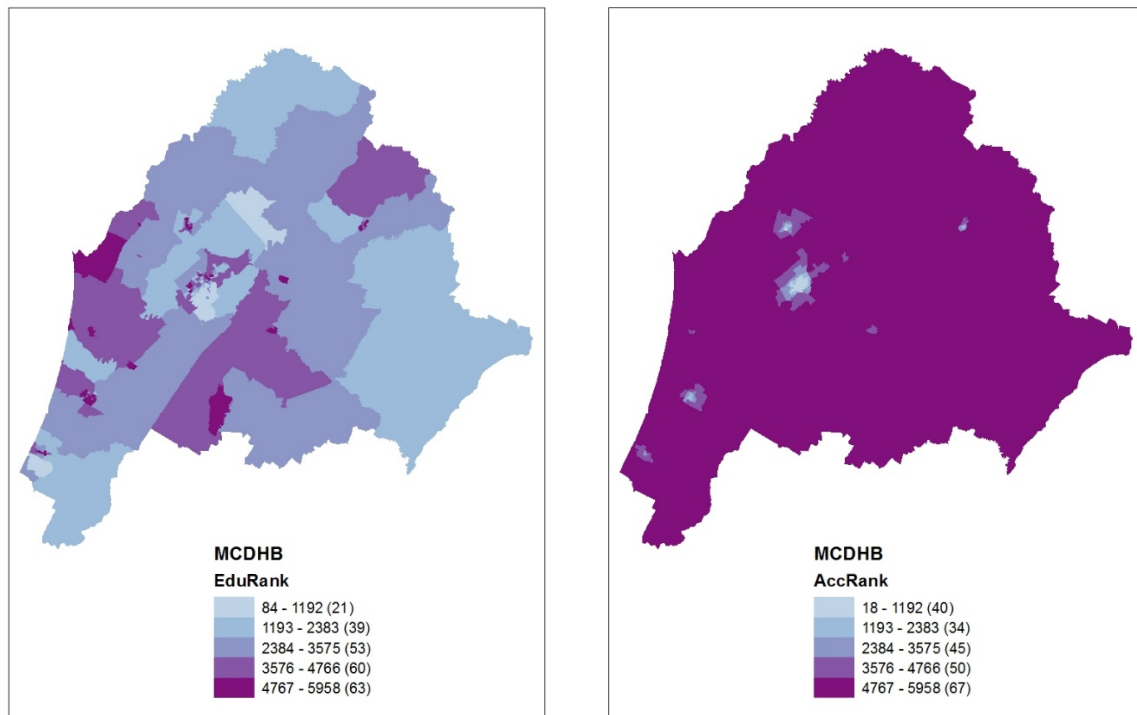


Figure 6. Distribution of education and access deprivation in the MCDHB

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 ²	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.

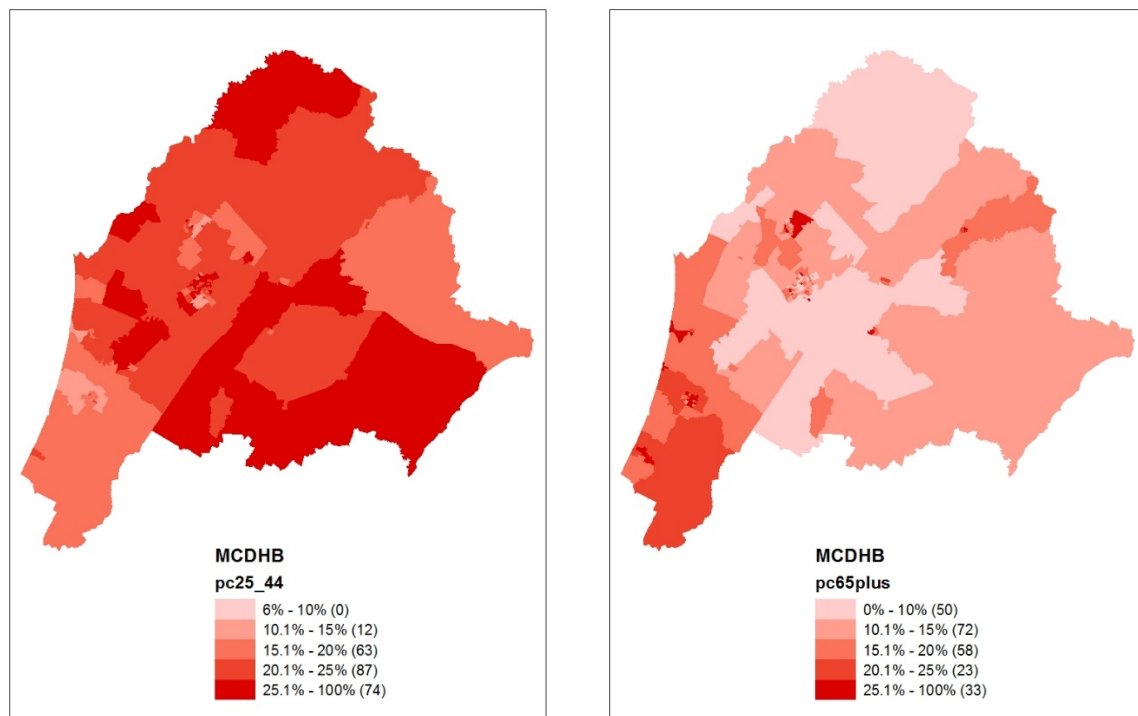


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the MCDHB

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.

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 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.

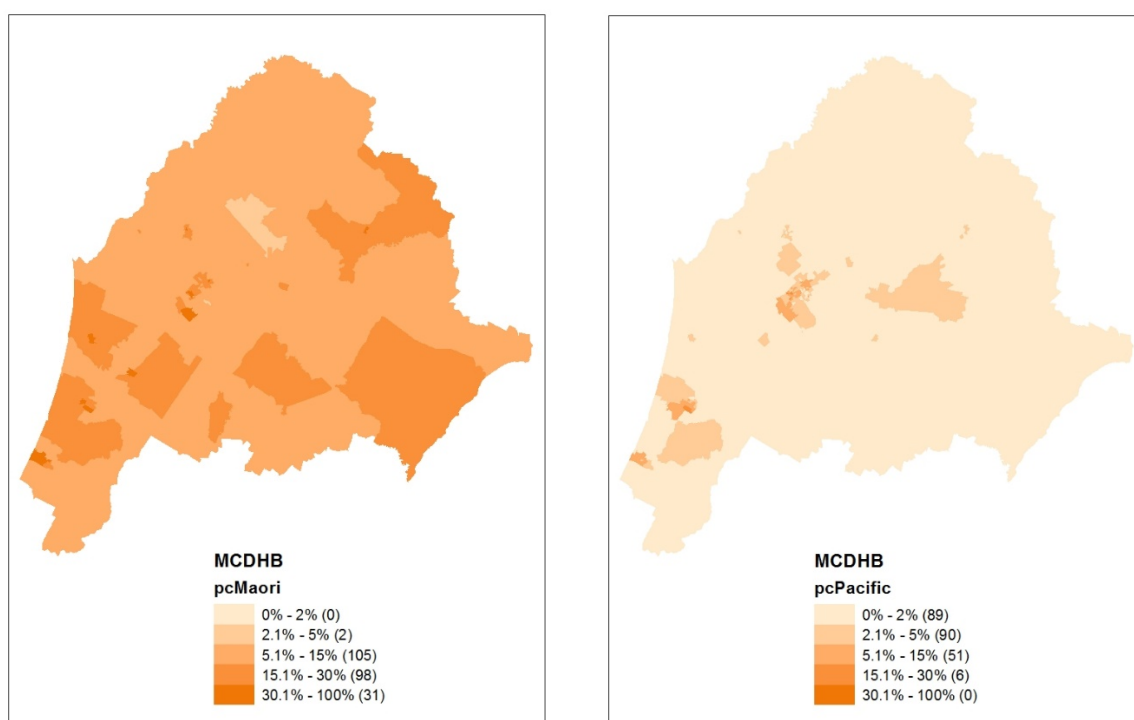


Figure 8. Distribution of Māori and Pacific people in the MCDHB

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](#).