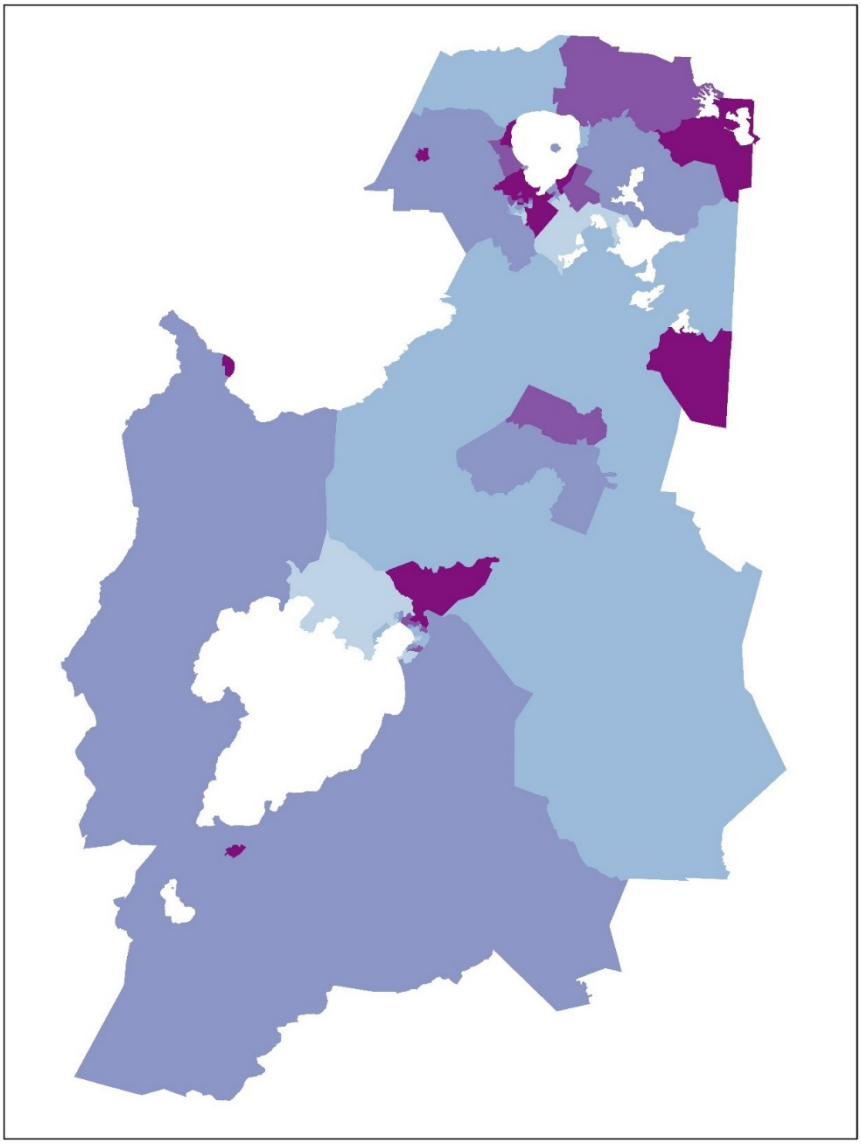
A deprivation and demographic profile of the Lakes DHB



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

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MEDICAL AND HEALTH SCIENCES

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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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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.

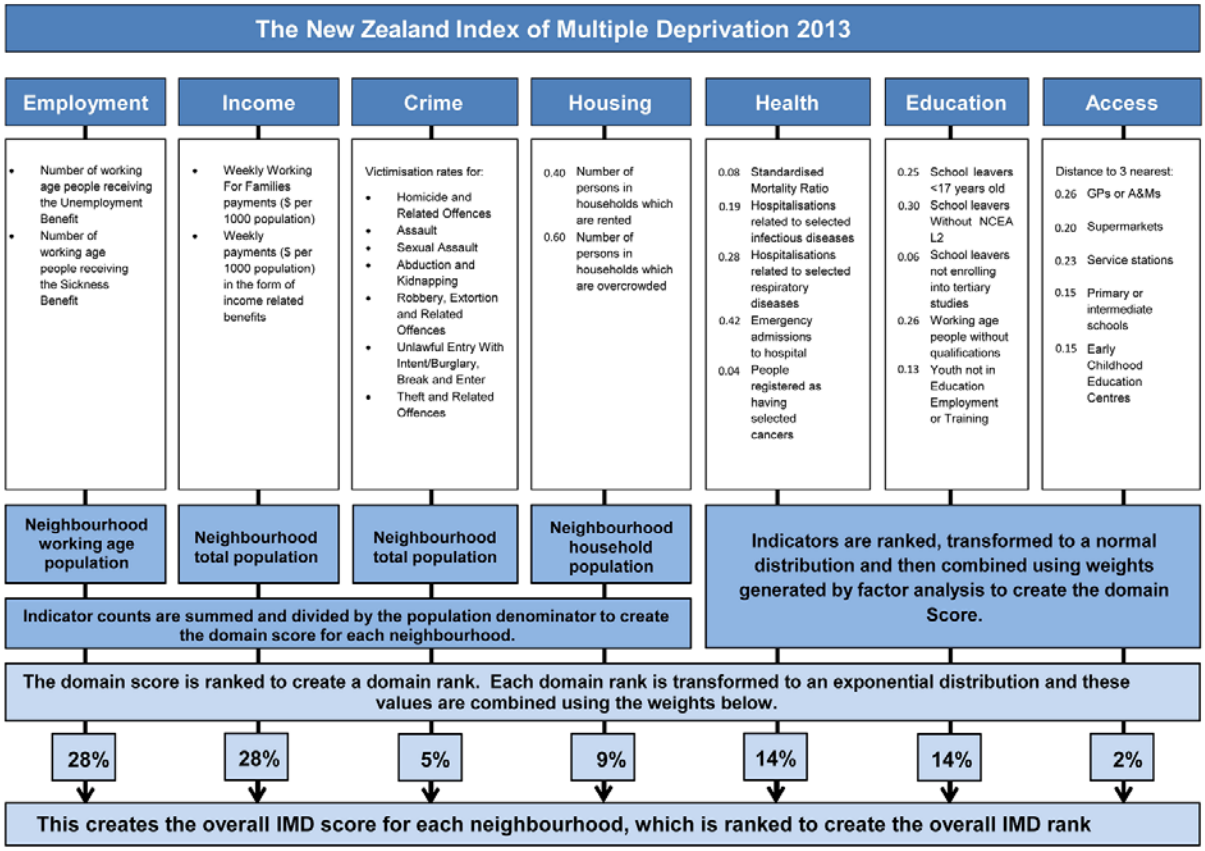

Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

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.

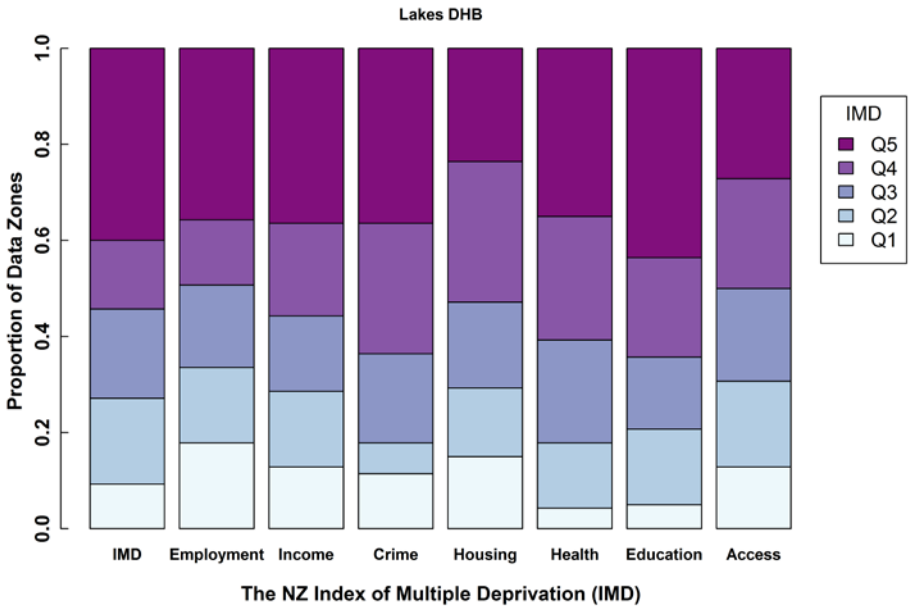

Figure 2. Stacked bar chart showing overall deprivation and seven domains in the LDHB

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[1] 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

[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).

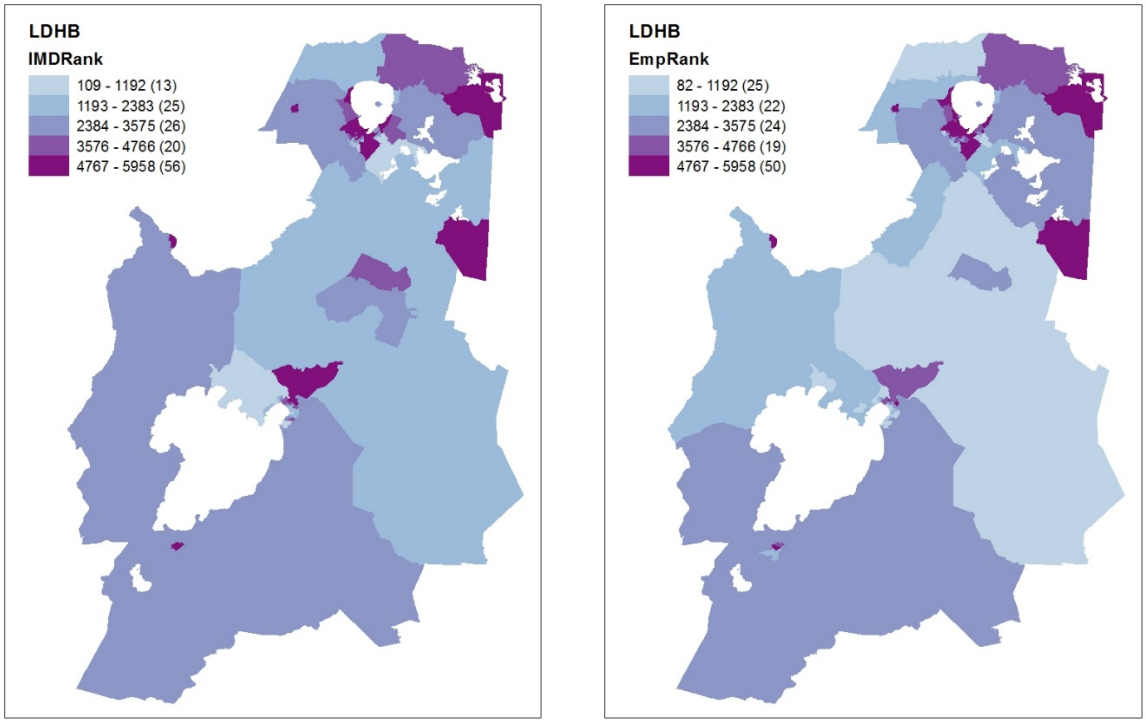

Figure 3. Distribution of overall IMD and employment deprivation in the LDHB

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.

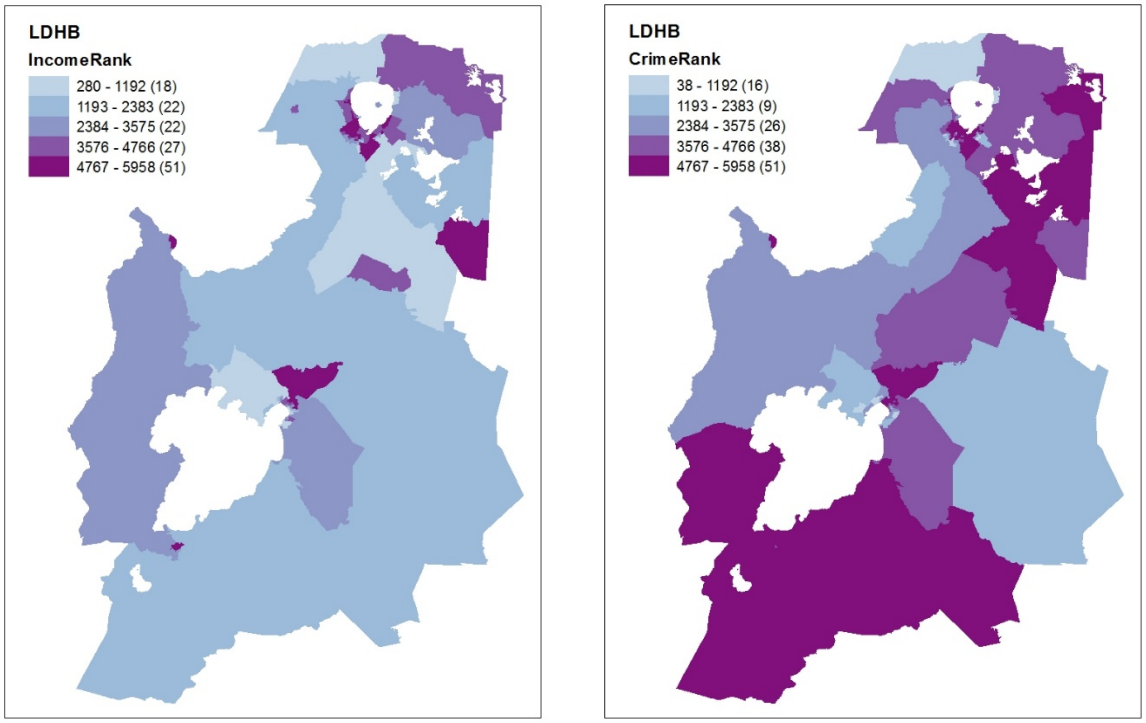

Figure 4. Distribution of income and crime deprivation in the LDHB

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.

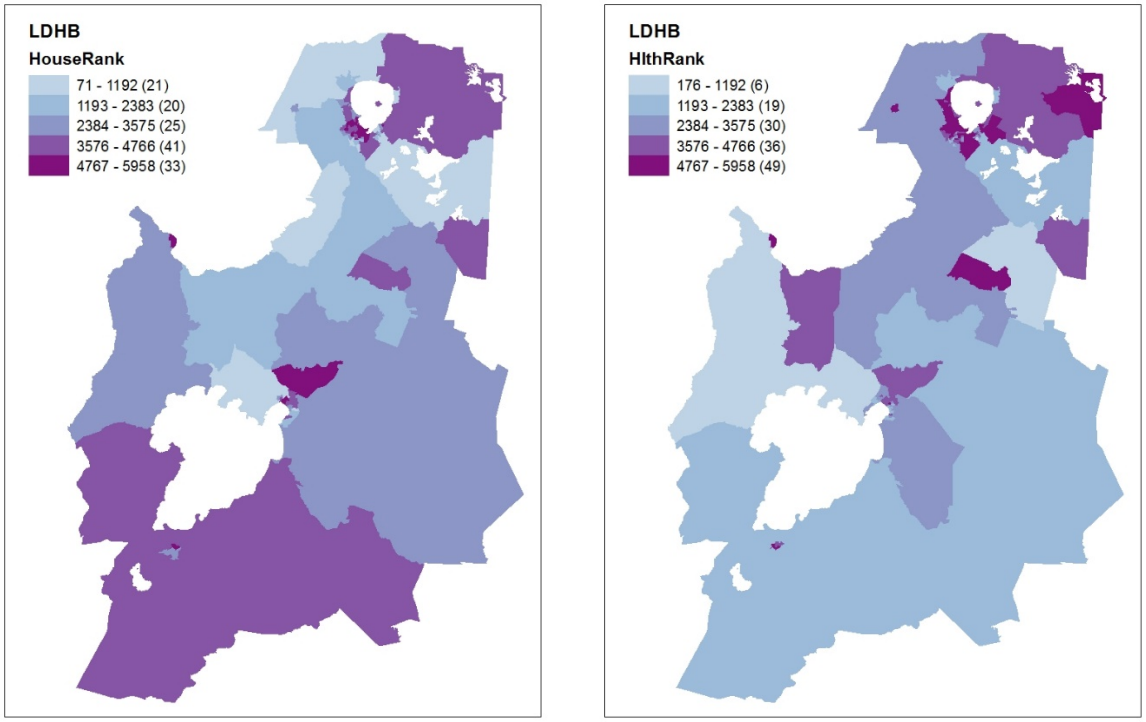

Figure 5. Distribution of housing and health deprivation in the LDHB

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.

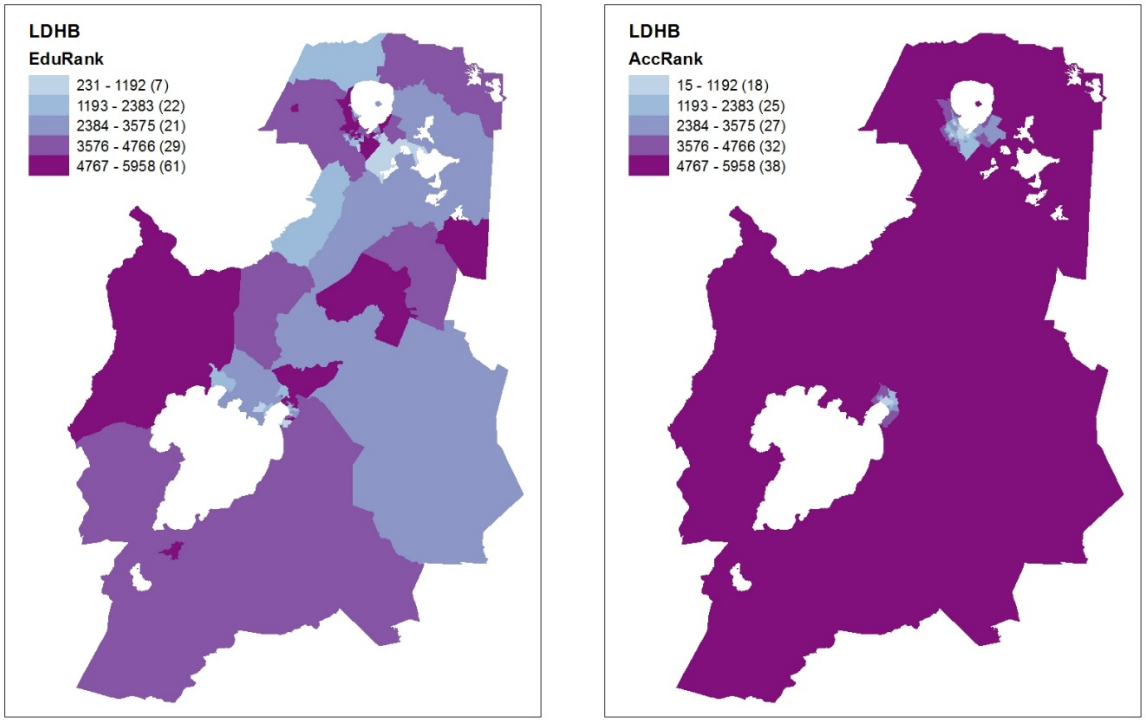

Figure 6. Distribution of education and access deprivation in the LDHB

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[2]	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.

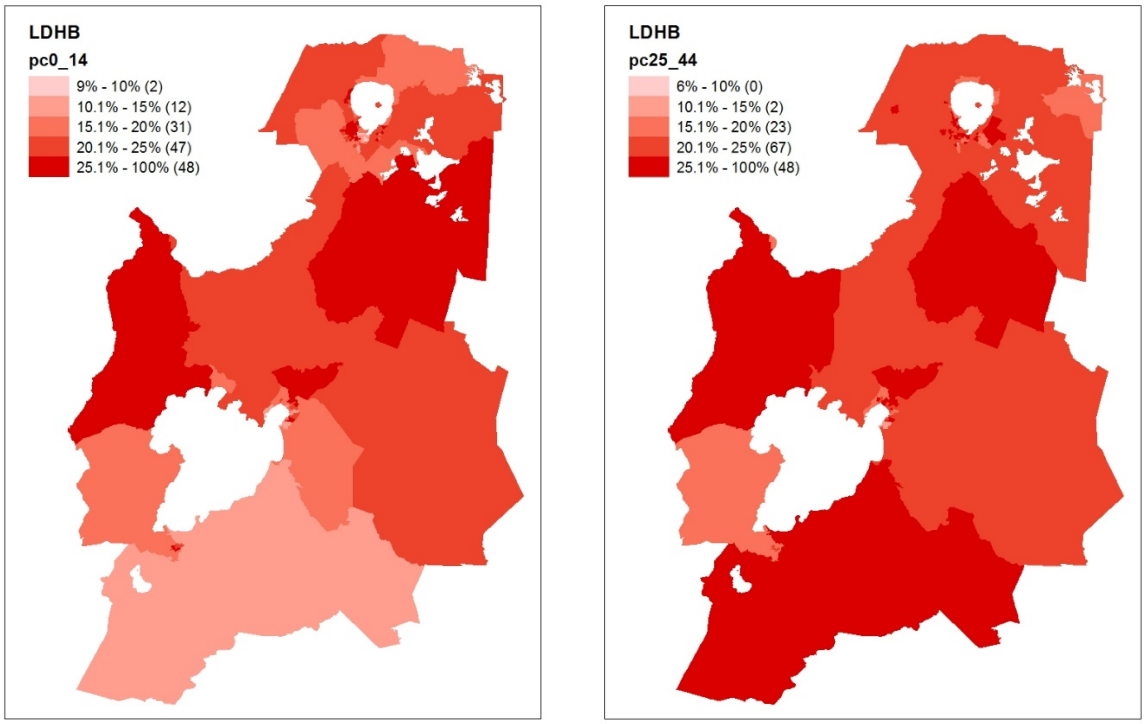

Figure 7. Distribution of children aged 0-14 and people aged 25-44 in the LDHB

[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 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 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.

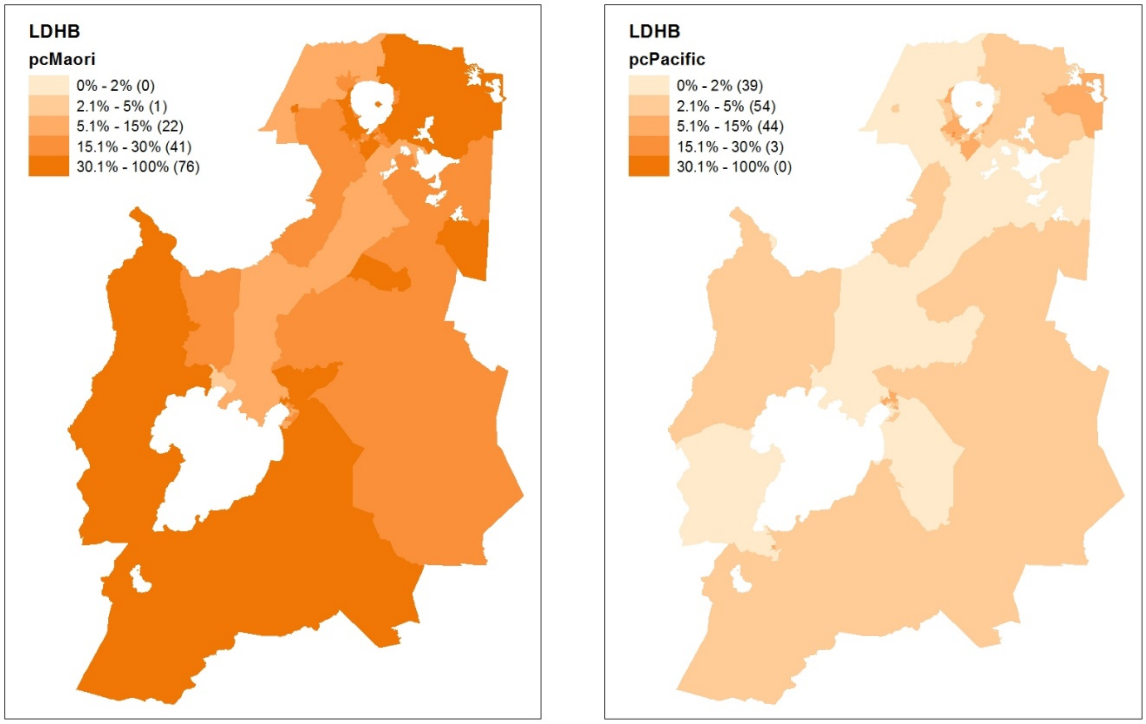

Figure 8. Distribution of Māori and Pacific people in the LDHB

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.