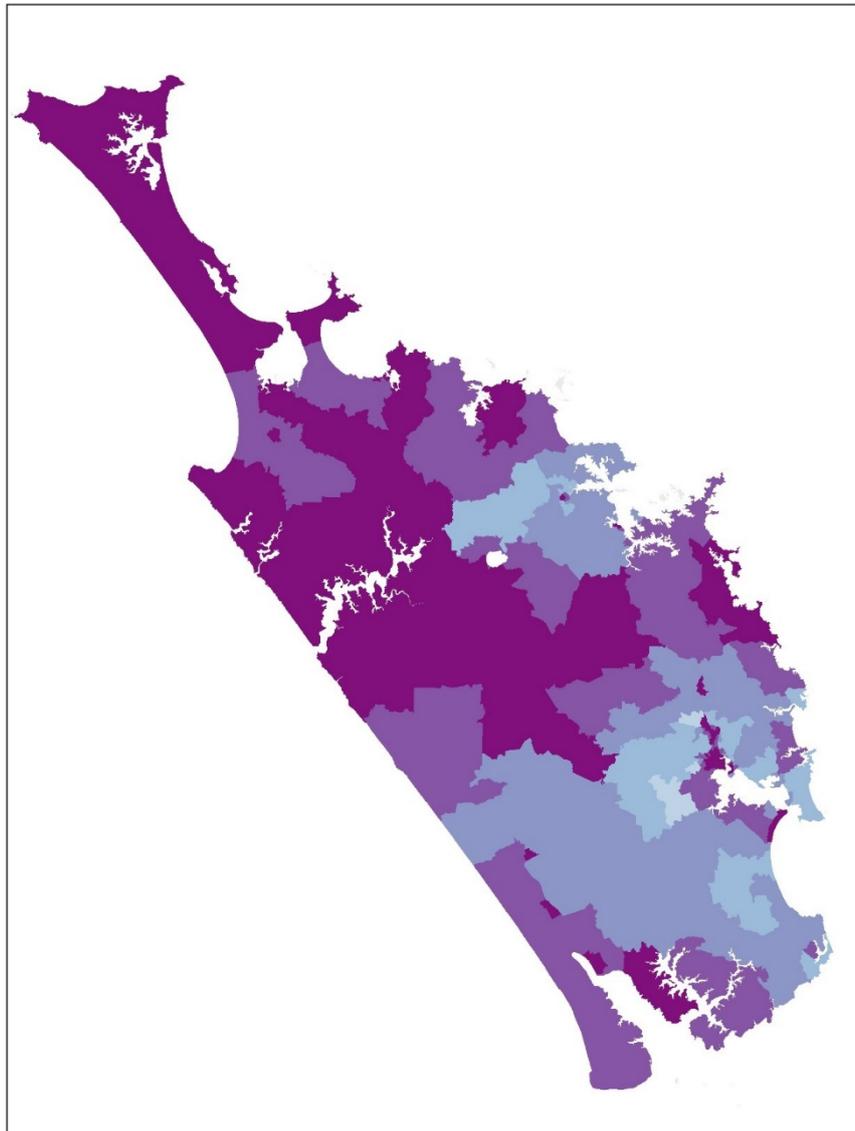


A deprivation and demographic profile of the Northland DHB



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

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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 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.

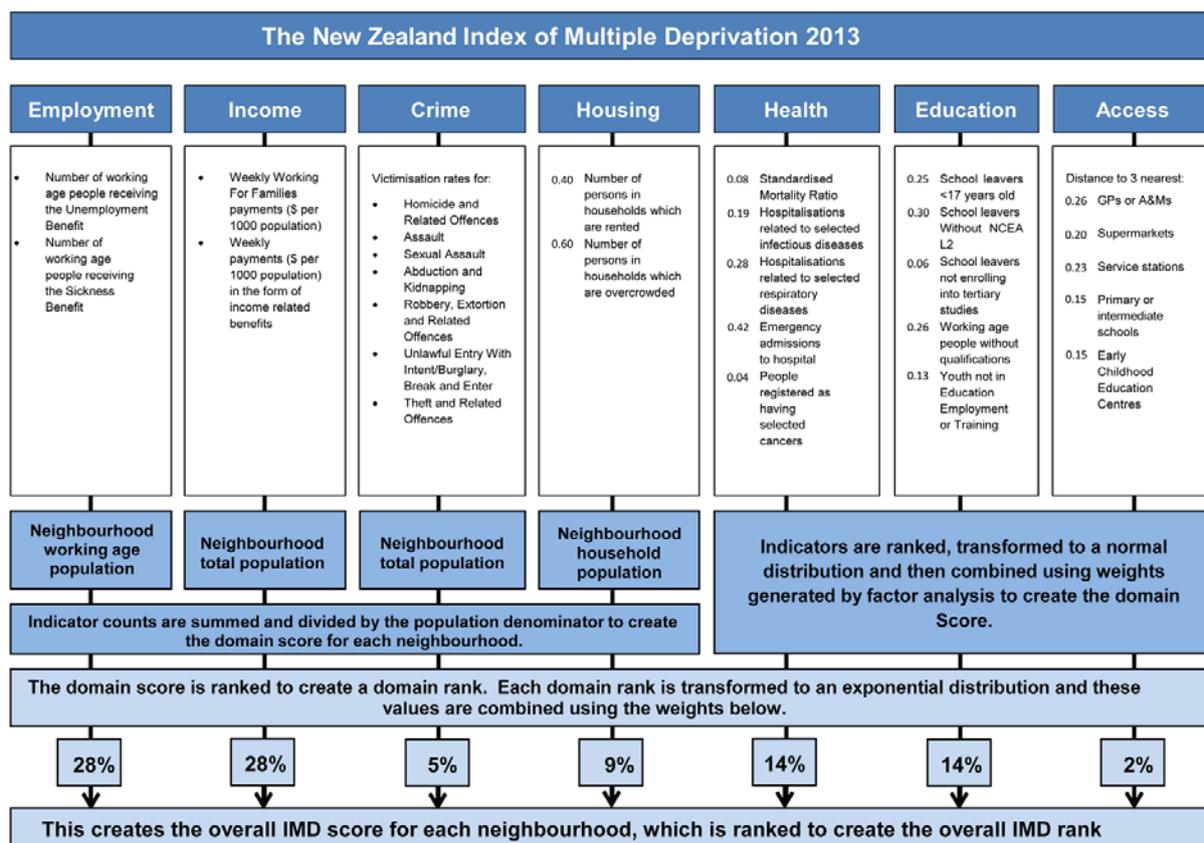


Figure 1. Flow diagram showing the IMD, its indicators, domains and weights. Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

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.

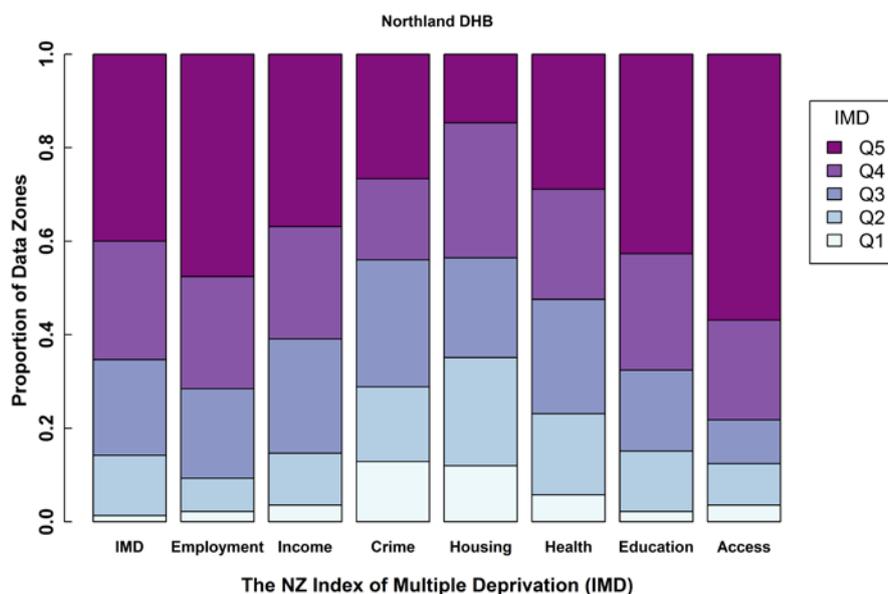


Figure 2. Stacked bar chart showing overall deprivation and seven domains in the NDHB

Table 1 shows summary statistics by domain for 90 NDHB data zones that were among NZ's 20% most deprived (Q5) data zones 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 ¹ 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

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).

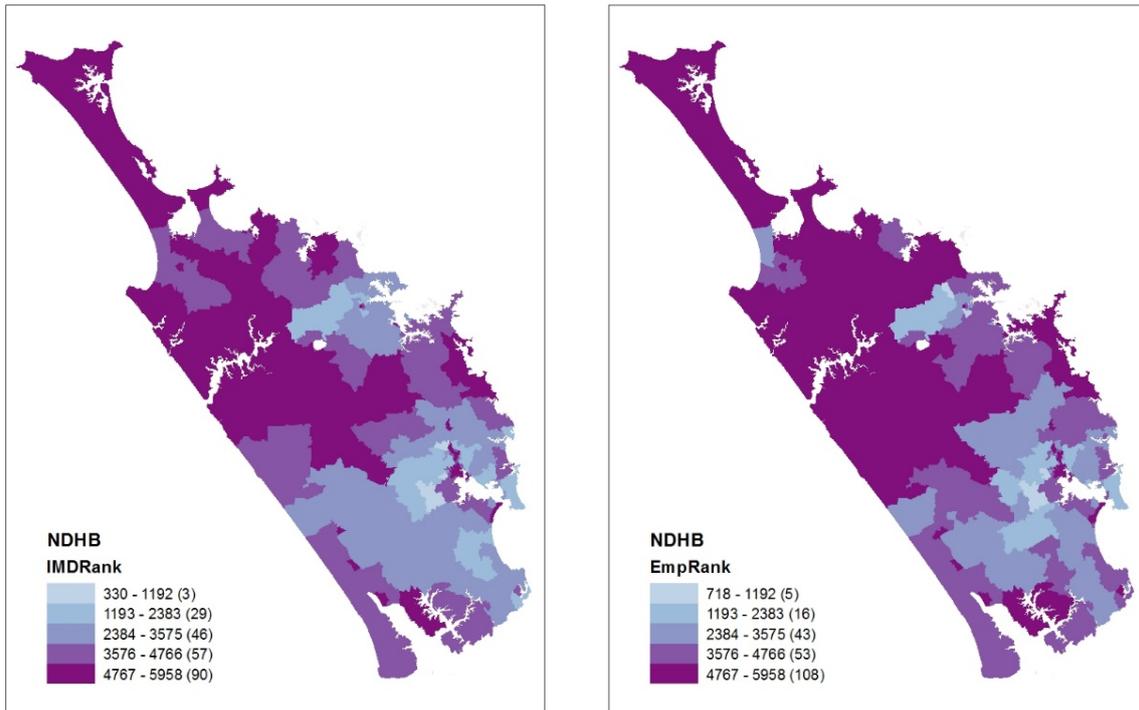


Figure 3. Distribution of overall IMD and employment deprivation in the NDHB

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.

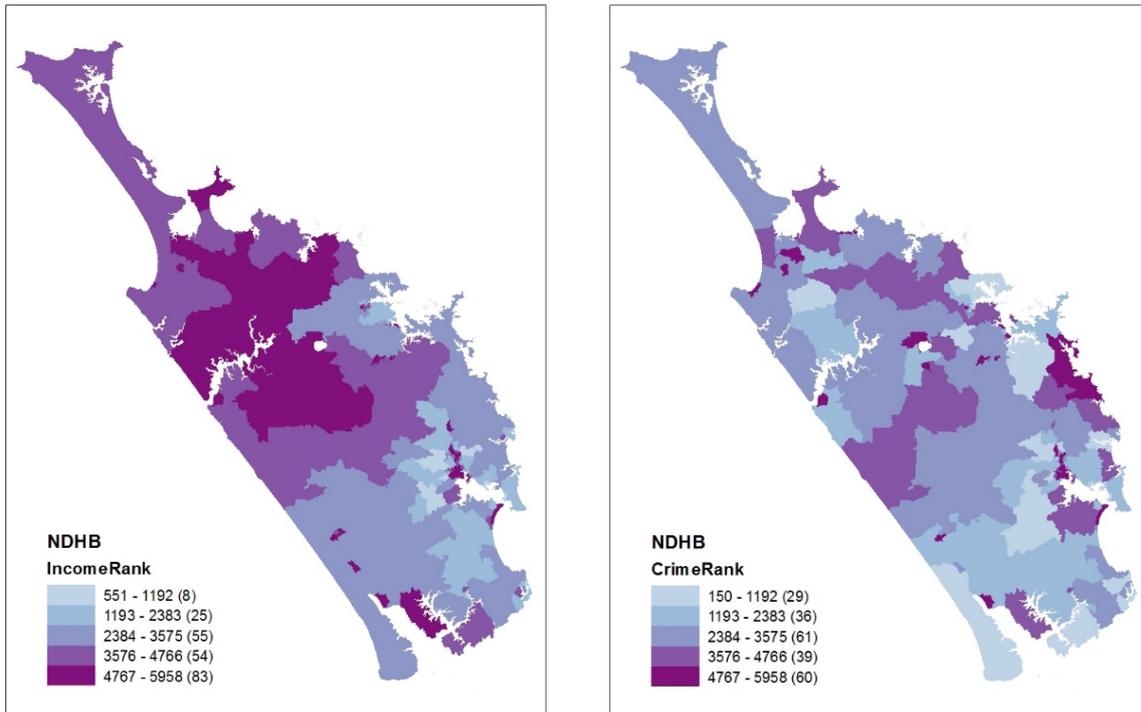


Figure 4. Distribution of income and crime deprivation in the NDHB

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.

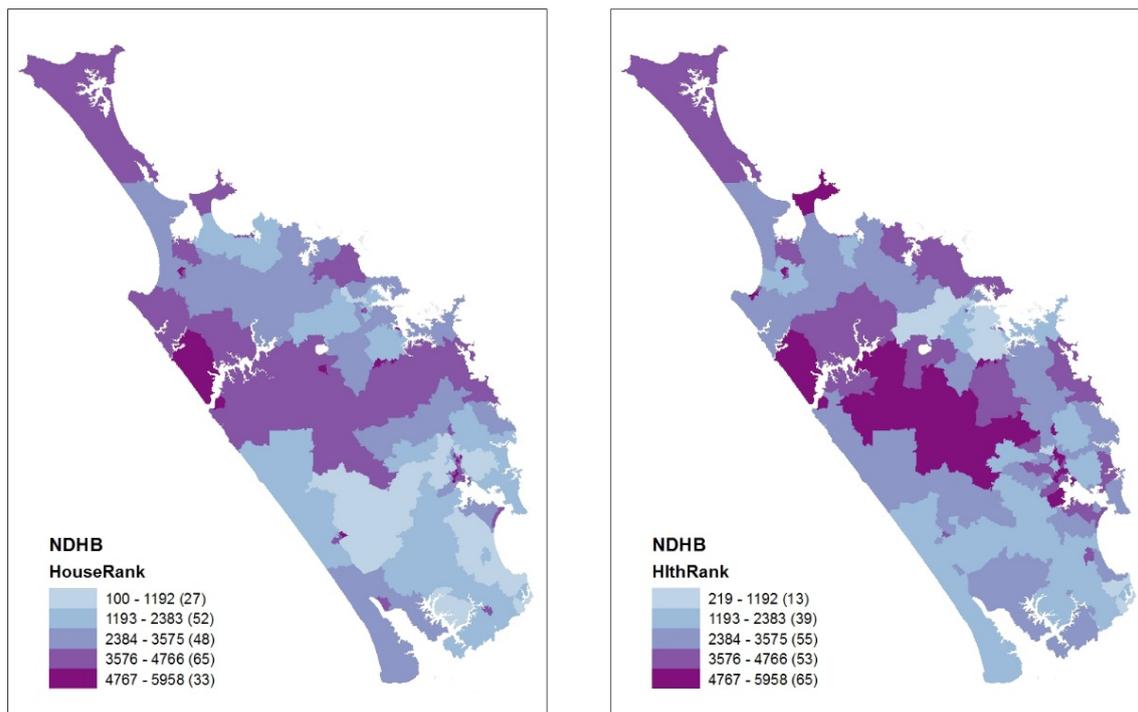


Figure 5. Distribution of housing and health deprivation in the NDHB

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.

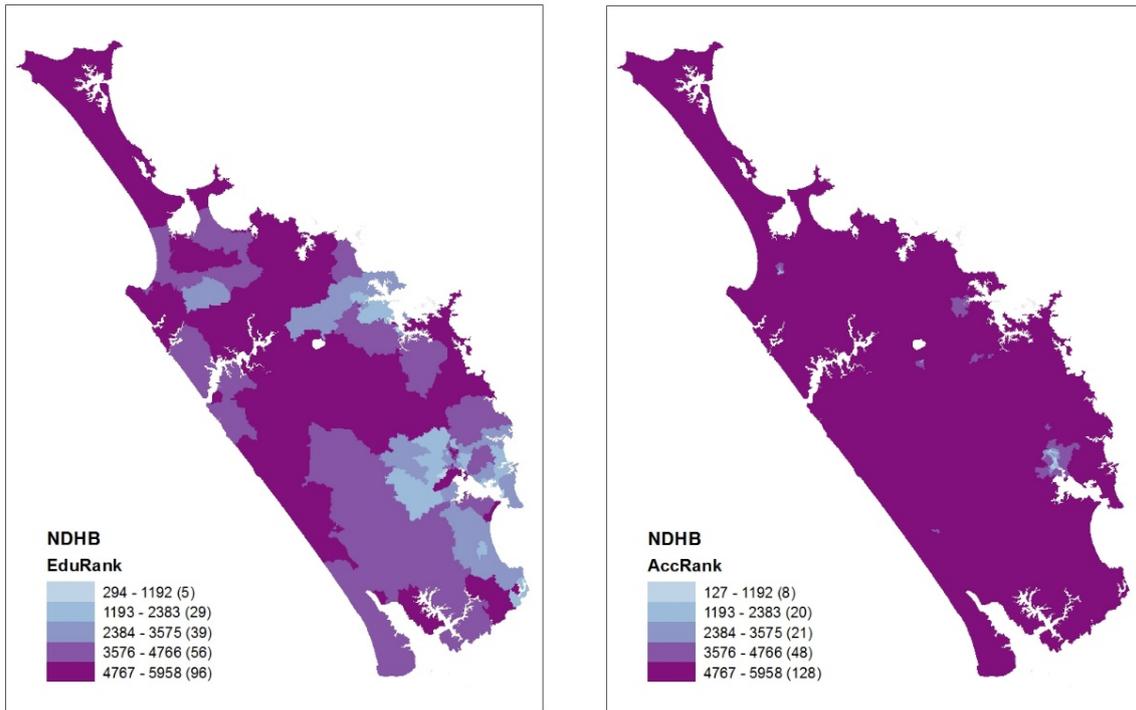


Figure 6. Distribution of education and access deprivation in the NDHB

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 ²	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.

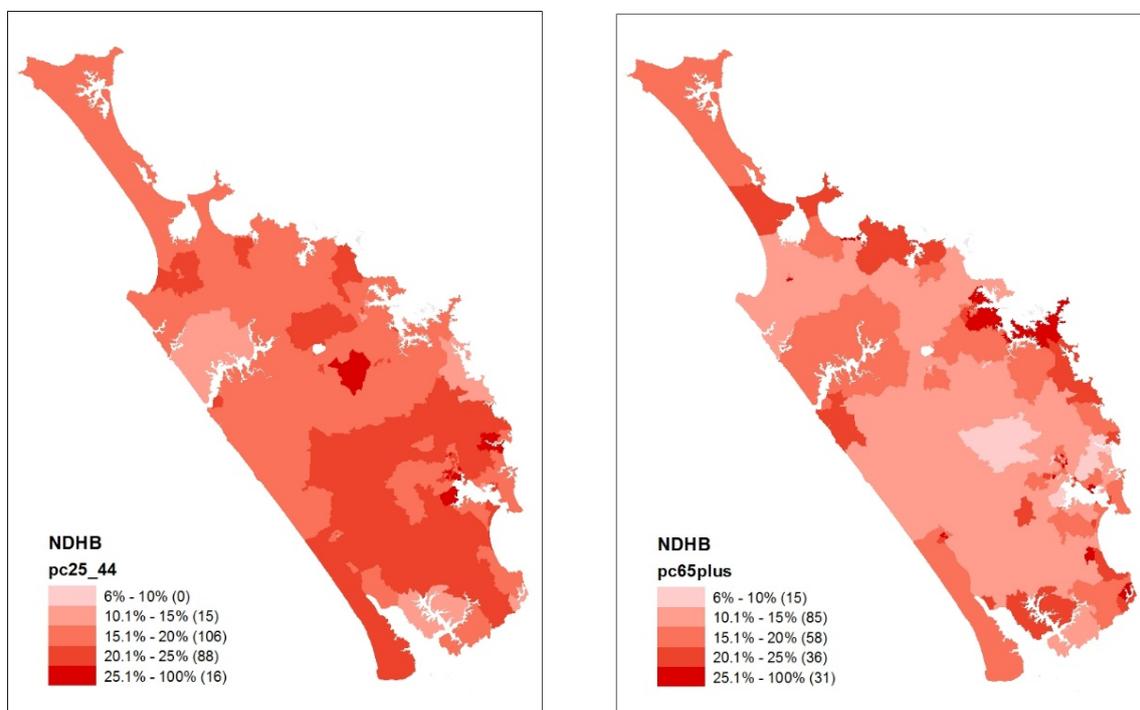


Figure 7. Distribution of people aged 25-44 and people aged 65+ in the NDHB

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 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 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.

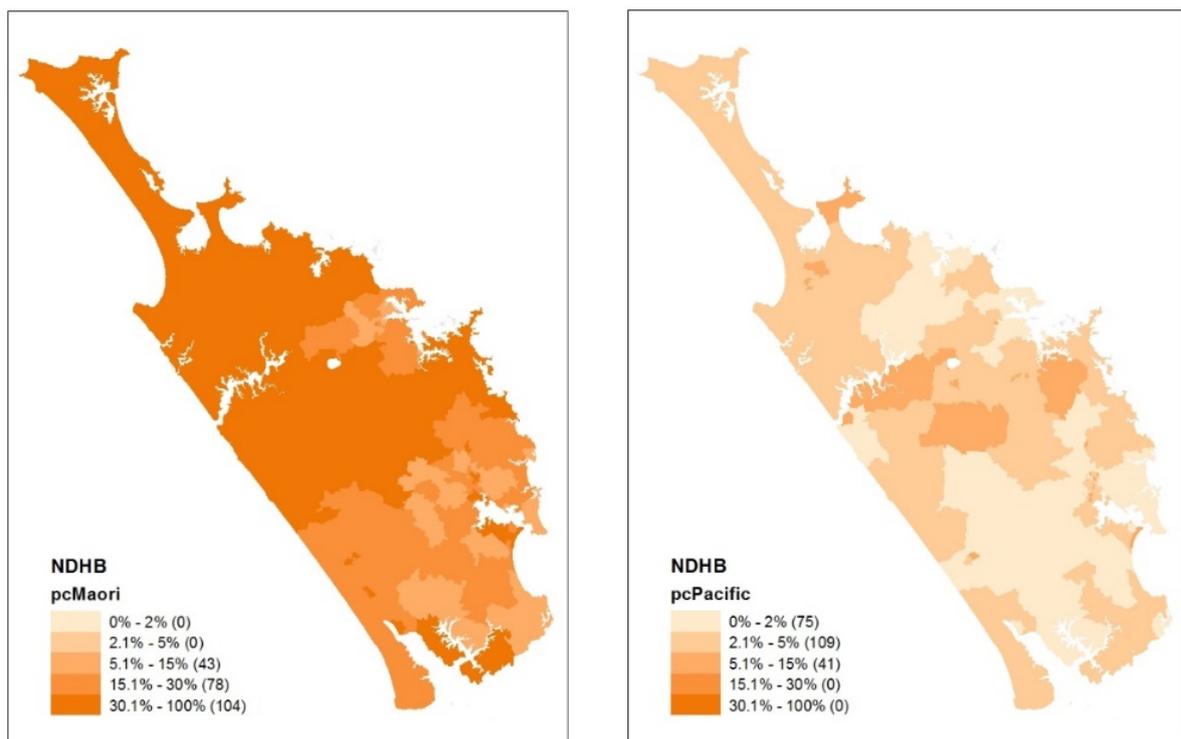


Figure 8. Distribution of Māori and Pacific people in the NDHB

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](#).