



Rural Health Indicators Project

Comparison of specific Independent Urban Areas within three District Health Boards

Report Three

Prepared by New Zealand Institute of Rural Health

Comparison of Specific Independent Urban Areas Within Three District Health Boards



This document is the final report of a series on Rural Health Indicators prepared by the New Zealand Institute of Rural Health.

This report follows **The Rural Health Indicators Project Report One – Developing a Rural Health Indicator Framework** and must be read in conjunction with **Annexe 1 Rural Health Indicators and a comparison of five District Health Boards Incidence of Disease, Mortality and Secondary Care Activity Project Report Two.**

DISCLAIMER: While all reasonable endeavour has been made to ensure the accuracy of the investigations and the information contained in this report, New Zealand Institute of Rural Health expressly disclaims any and all liabilities contingent or otherwise that may arise from the use of the information.

Glossary of Terms

CVD	Cardiovascular Disease
COPD	Chronic Obstructive Pulmonary Disease
Deprivation Decile	A measure of socio-economic deprivation.
Infant Mortality Rate	Infant mortality rate (IMR) indicates the number of deaths of babies under one year of age per 1,000 live births. The rate in a given region, therefore, is the total number of newborns dying under one year of age divided by the total number of live births during the year, then all multiplied by 1,000.
ICD 10 Coding	The International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) is a coding of diseases, signs and symptoms, abnormal findings, complaints, social circumstances and external causes of injury or diseases, as classified by the World Health Organization (WHO).
Labour Force	The labour force is defined as the population aged 15 years and over who are either employed or unemployed
LOS	Length of Stay
NMDS	The NMDS is a national collection of public and private hospital discharge information, including clinical information, for inpatients and day patients. Unit record data is collected and stored. All records must have a valid NHI number.
Potentially Avoidable Mortalities (PAM)	Deaths that are classified as premature, under 75 years of age and potentially treatable.
Secondary Care	Health services such as diagnostics and surgery accessed through referral by a primary health care clinician.

Executive Summary

Purpose of Report

The New Zealand Institute of Rural Health has developed a set of rural health indicators, which includes the incidence of cardiovascular disease, malignancy, renal disease and respiratory disease (report one). Analysis of three District Health Board populations indicated the highest incidences of cardiovascular, malignancy, renal and respiratory disease occurred principally in Independent Urban Areas (report two).

In seeking answers to why Independent Urban Areas (IUAs) populations have the highest incidence of cardiovascular disease, malignancy, renal and respiratory disease hospital discharges; additional work and analysis has taken place. The purpose of this report is to compare certain aspects of demographic and socio-economic data with the National Minimum Data Set (NMDS) discharge data between independent urban areas within selected District Health Boards (DHBs) - Northland, Waikato and Southern, against entire DHB areas and between DHBs.

Each of the three DHBs overall demographic pictures has been analysed against the demographics of their four chosen Independent Urban Areas. This has then been completed by a comparison of the overall DHB NMDS discharge data against the Independent Urban Areas discharge data for Cardiovascular, Malignant, Renal and Respiratory Disease for the period 2005-2009.

Methodology

To carry out a further review and analysis of Independent Urban Areas and why they appear to have the highest prevalence of chronic disease a six point methodology has been used. It is as follows:

1. A random choice of 12 Independent Urban Areas across three DHBs to represent typical Independent Urban Areas in New Zealand,
2. Obtaining demographic and socio-economic information and data from Statistics NZ¹ and infant mortality rates² (See Appendix 1) for each Independent Urban Area selected,
3. Matching this with historical fact and anecdote for each Independent Urban Area about commerce or industry in that particular Independent Urban Area,

¹ Statistics New Zealand (2011) Information obtained on Census 2006 for specific Independent Urban Areas for New Zealand Institute of Rural Health

² <http://www.fags.org/childhood/In-Ke/Infant-Mortality.html> accessed 19th March 2012

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4. Using the NZ Deprivation Index³ as a key measure for socio economic status for each Independent Urban Area,
5. Identifying prevalence of disease for each Independent Urban Area by using the proxy of discharge for cardiovascular, malignant, renal and respiratory diseases for relative comparison to and between DHBs,
6. Referencing the findings to each individual DHBs Annual Plan 2011/2012 or Population Health plans or programmes and Health Needs Analyses, where available.

Independent Urban Areas for Review

The following Independent Urban Areas have been selected for further analysis:

Table 1: Independent Urban Areas for Comparison

Northland DHB	Waikato DHB	Southern DHB
Dargaville	Matamata	Alexandra
Kaikohe	Te Kuiti	Cromwell
Kaitaia	Tokoroa	Gore
Kerikeri	Waihi	Te Anau

The results of comparing demographic and socio economic issues between the DHBs and Independent Urban Areas have demonstrated the following:

Age

In Northland areas where larger proportions of Maori are domiciled, there are increased percentages of young children.

When looking at all the Independent Urban Areas the ten year band of the 15 to 24 age group appears low. This could be that young people go looking for employment in larger urban areas.

Dargaville and Kerikeri have at least 20% of their population in the 65+ age group, contrasted with Kaikohe and Kaitaia with well below 15% in the 65+ age group.

³ Salmond, C., Crampton, P., Atkinson, J.,(2007), *NZDep2006 Index of Deprivation User's Manual* , August 2007, Department of Public Health, University of Otago, Wellington

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On average Maori are admitted 15 years younger for hospital procedures. There is correlation between Maori and higher rates of deprivation and early onset of long term conditions such as heart disease and diabetes and cancer.

In the Waikato, Matamata and Waihi are both colloquially known as retirement areas, with nearly 25% and 22% respectively aged 65+ years old. The age groups, 25 - 44 years and 45 - 64 years, each account for approximately a quarter of the population within each Independent Urban Area. Te Kuiti and Tokoroa demonstrate high percentages of children under 15, correlating with the higher Maori population in these townships. These results are very similar in age structure when compared with the Waikato DHB population as a whole. Populations are predicted to grow with a notable increase in the proportion of older persons and decrease in younger persons through to 2026.

In Southern DHB area, Alexandra is colloquially known as a retirement area. The age groups, 25 - 44 years and 45 - 64 years, also account for approximately a quarter of the population within each Independent Urban Area each. Populations are predicted to grow with a notable increase in the proportion of older persons and decrease in younger persons through to 2031.

Gender

The gender split is evenly spread between males and females (49% and 51% respectively). This is the general picture for all Independent Urban Areas, regionally and nationally. There is a slightly larger percentage of females to males, as females live longer.

Ethnicity

Across New Zealand, approximately 13% identify as Maori. Nga Iwi o Te Tai Tokerau comprises 30% of the Northland population. Out of the total Maori population about half live in the Far North district in Kaikohe and Kaitaia, 40% in Whangarei and 10% in Kaipara.

In Waikato DHB, approximately 19% identifying as Maori. Te Kuiti (46.6%) and Tokoroa (37.4%) have the largest Maori populations. This correlates to higher levels of young people in these townships and a decreased proportion of over 65 years old. Maori still have a markedly decreased lifespan in relation to non-Maori.

In Southern DHB the Independent Urban Areas have low Maori ethnicity, typically 7-10% with high non Maori ethnicity of 85 -90 per cent.

Deprivation Score

Most of the Independent Urban Areas have high deprivation levels with Southern being the only DHB with relatively low deprivation.

Almost 50% of the population of Northland live within NZ Dep 6 to NZDep 10 scores with Kaikohe and Kaitaia being the most deprived areas of all. Maori experience poorer health status across a range of health and socioeconomic statistics. They comprise 30% of Northland's population, but 52% of the child and youth population, a key group for achieving long-term gains. Maori experience early onset of long term conditions, presenting to hospital services on average about 15 years younger than non-Maori.

All the Waikato Independent Urban Areas analysed have high deprivation levels - except for that of Matamata. Almost 50% of the people in each Independent Urban Area live in an area of mid to high social deprivation and about 40% are low-income earners. In all areas, Maori are more deprived than those identifying as non-Maori. There is evidence of higher levels of children being borne to <20 years of age mothers with high hospitalisation rates for childhood diseases.

The picture is different in Southern DHB as all the Independent Urban Areas analysed have low to mid social deprivation levels - except for Gore which reaches a peak of 15% at NZ Dep7.

Prevalence of Disease

The comparison across DHBs and Independent Urban Areas has confirmed that age, gender, ethnicity and life style behaviours common to your social and physical environment as well as some hereditary pre cursors all lead to determining health status. Independent Urban Areas with high socio-economic deprivation and Maori ethnicity biases demonstrate higher hospital discharge rates.

Each Independent Urban Area reviewed has duplicated the relevant DHB disease status for all its Independent Urban Areas. Te Anau has demonstrated some skewing of the results due to the small population numbers used.

For change to occur, it can not be a purely health system response. It requires government agencies to come together to collaborate across the spectrum of social welfare, housing, education, Iwi and health to support the people who live in these Independent Urban Areas.

Infant Mortality

The national infant mortality rate for the four years 2006-2010 is 5.1 deaths per 1,000 live births. Independent Urban Areas studied varies from 0 (Alexandra) to 13.8 deaths per 1,000 live births (Tokoroa).

Generally, the incidence of infant mortality follows the deprivation score, which is influenced by ethnicity in particularly Maori. More detail of infant mortality is contained in appendix I.

Conclusion

This report has compared certain aspects of demographic and socio-economic data with the National Minimum Data Set (NMDS) hospital discharge data between independent urban areas within the selected District Health Boards (DHBs) of Northland, Waikato and Southern, against the entire DHB area and between DHBs.

Using the six point methodology, comparison of the prevalence of disease across the DHBs and the Independent Urban Areas selected has demonstrated the similarities with issues for some disease processes within older age groups, gender, Maori ethnicity and higher social deprivation. It has demonstrated the same issues identified in Report Two - Comparison of Five DHBs.

Social and economic factors are shown to have the greatest influence on health. The relationship between socioeconomic deprivation and health outcomes demonstrates increasing levels of deprivation are associated with higher mortality rates, and higher rates of disease.

Research has shown that a number of demographic and socio-economic factors may impact a person's health. Those who live in poorer communities often suffer from greater ill health and shorter life expectancies. People who live in deprived areas are often without access to the best healthcare and struggle to prevent illness more than those in less deprived communities.

Many of the causes of ill health rest with social and economic factors such as housing, education and economic prosperity. The health sector cannot affect these directly, but DHBs can work on them collaboratively with other government and local body organisations.

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The way people live their lives and the behaviours they exhibit have an influence on health status. There are a wide range of influences, but key ones are smoking, diet, alcohol and other drugs and physical activity.

People who live in deprived areas suffer from greater health problems. What is not always clear is whether those areas are the cause of the problems or if ill health has caused the fall of some into deprivation. Those who suffer from mental or physical disabilities earn on average a fraction of the amount able-bodied citizens can command at work. As a result, in some cases illness leads to poverty rather than vice versa.

The disease prevalence and socio economic factors analysed in this report show that New Zealanders living in independent urban areas have a poorer state of health than counterparts living in the other six Statistics New Zealand geographical areas.