

## 2 DATA SOURCES AND LIMITATIONS

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### 2.1 Introduction

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This section presents the data sources used in the design and development of the HNA 2008 report. In addition, further information is presented on: Ethnicity coding in 2006 Census, NZDeprivation Index, Process and data limitations and finally key recommendations for strategic consideration as part of the Waikato District Strategic Planning process.

### 2.2 Data Sources

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**National Minimum Dataset (NMDS):** The term hospitalisation includes patients admitted as a day or inpatients and excludes outpatients. The hospitalisation data for HNA 2008 was extracted from this dataset. NMDS is New Zealand's national hospital discharge data collection, implemented in 1993 and is maintained by the New Zealand Health Information Services (NZHIS). Since 1993, public hospitals have been submitting information in an agreed electronic format, and the information has been backdated to 1988. Since 1997, private hospitals have been submitting information on discharges for publicly funded events such as births, geriatric care to NMDS. NMDS contains principal and additional diagnoses, procedures, external causes of injury, length of stay and sub-specialty code and demographic information such as age, ethnicity and usual area of residence.

Some of the key issues that must be taken into account when interpreting the NMDS data are:

Inconsistencies in the way in which information about same day cases has been provided by different DHB and across at different times;

Changes in the clinical coding system used for diagnoses and procedures, in particular the change from the ICD-9 to ICD-10 (1999 onwards) coding system.

Modifications to and differing interpretations of the Australian coding standards which clinical coders must adhere to, e.g. a change from the coding standard which required diabetes to be reported as a co-morbidity wherever it occurred, to one which required it to be reported only if it contributes to the principal problem could be interpreted as a reduction in diabetes in the population.

Poor quality ethnicity information in historic data, improving slowly in more current data.

**National Mortality Collection:** Mortality data for HNA 2008 was extracted from this dataset. Deaths occurring in New Zealand each year are manually coded within NZHIS. For most deaths the Medical Certificate of Cause of

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Death provides the information required, although coders have access to the information residing in NMDS, NZ Cancer Registry (NZCR), Land Transport Safety Authority (LTSA), Police, Water Safety New Zealand and Environmental Science and Research (ESR).

**Client Claims and Payments System (CCPS):** The data from this system was extracted for HNA 2008 in order to assess disability support services for Older People. Currently, most demographic information on disability support services is provided through the CCPS payment system. The system is based in the Ministry of Health HealthPAC office in Dunedin and it collects data supporting payments for DHB and Ministry of Health funded services, including residential care, home based care, carer support, respite care, transport and accommodation to attend treatment. Predominantly intended to hold eligibility and payment information, it has been adapted over the years to provide demographic information on those services paid for on a fee for service basis based on individual 'client' eligibility and at least partly by public funding. It does not hold information on services funded by private individuals or on those paid on a capacity basis.

It is difficult to extract data from this system to report on service delivery and utilisation. DHB users become familiar with their own areas of responsibility (age related services) but as the data in the system is unstructured, analysis and reporting of other services is problematic and open to the risk of misinterpretation.

## 2.3 Ethnicity Coding in 2006 Census

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In 2006 Census, within "Other" ethnic group, a new category was created to allow for the responses of those identifying as a "New Zealander". In previous years, this sub-category has been assigned to the European ethnic group. In 2006, a total of 429,429 individuals (10.6% of the NZ population) identified themselves as a New Zealander, a significantly large increase from previous years and a trend which will continue to pose serious threat to the availability of valid population denominators for use with health sector data. As yet the consequences of this change have not yet been fully addressed by the health sector.

In New Zealand, at present 3 ethnic groups are stored electronically in the NMDS and Mortality Collections and Statistics New Zealand's prioritisation algorithms being used if more than 3 ethnic groups are identified.

All ethnic specific analysis presented in this HNA is for the 1998 year onwards. Statistics New Zealand's Level 1 Ethnicity Classification is used, which recognises 4 ethnic groups: Maori, Pacific People, Asian, Other ethnic group.

Asians include:

- Asians not further defined
- Chinese
- Indian

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- Other Asians
- South East Asians

Other Includes:

- African
- European not further defined
- Latin American
- Middle Eastern
- Not stated
- NZ European
- Other
- Other European

## 2.4 NZ Deprivation Index

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The NZ Deprivation Index (NZDep) is a small area index of deprivation, which has been used as a proxy for socioeconomic status in this report. The key concept underpinning small area indexes of deprivation is that the socioeconomic environment in which a person lives can confer risks/benefits which may be independent of their own social position within a community. It provides information about the wider socioeconomic environment in which a person lives, rather than about their individual socioeconomic status.

**Decile:** NZDep provides deprivation scores at meshblock level (Statistics NZ areas containing approximately 90 people), for the purposes of mapping to national datasets, these are aggregated to Census Area Unit level (~1,000-2000 people). Individual area scores are then ranked and placed on an ordinal scale from 1 to 10, with decile 1 representing the least deprived 10% of small areas and decile 10 representing the most deprived 10% of small areas.

**Quintile:** In 2001 New Zealand Deprivation Index (NZDep01) was used as the measure of socioeconomic status (Salmond and Crampton 2002). NZDep01 Quintile 1 is the least deprived quintile and NZDep01 Quintile 5 is the most deprived quintile.

## 2.5 Process and Data Limitations

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The analysis and assessment of health and population priorities outlined in this HNA 2008 were based largely on the information stored in the NZHIS databases. As the key findings and recommendations are based on the assessment of the limited data, it is recommended that the Waikato DHB consider the suggestions outlined below in this section.

### 2.5.1 Process Limitations

**Virtual Strategic Team:** The HNA sets the foundation for the organisational strategic plan. This HNA has relied predominantly on the national datasets of mortality and morbidity for analysis and recommendations. Although the draft HNA is circulated internally and externally to relevant stakeholders, the review

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of such a high volume of information has inherent problems as it limits the ability to effectively utilise the pool of extensive knowledge base scattered across the organisation to clearly assess and collectively identify the strategic health and population priorities. With the current approach it is also possible that the reviewers may agree or disagree to certain facts and figures and may not have adequate time to provide sufficient information that reflects the real situation.

Hence, it is recommended that in the future, a corporate strategic team containing experts from across the organisation (including relevant external organisations) is established to work on the development of the HNA and the strategic plan. This team could either be a virtual team or a permanent team depending on the availability of finance and resources.

### 2.5.2 Data Limitations

**Quality and Integrity of Data:** The key findings and recommendations outlined in this HNA were based on the mortality and morbidity data in NZHIS systems. Where possible, additional data from within Waikato DHB systems were analysed, eg Emergency Department and Patient Management System. NZHIS and the National Cancer registry lack vital information such as the staging of cancer at the time of registration. In addition, there are some inconsistencies across DHBs, as DHBs use some of the data fields to suit their specific requirements. For example, secondary and tertiary DHBs use Health Specialty codes in different ways. These varying practices reduce the quality and integrity of data for comparative analysis at the local and national levels.

**Primary Diagnosis:** The national mortality and morbidity data was analysed by the primary diagnosis, i.e in some instances any co-existing conditions (eg. diabetes as a contributing factor) are recorded on the national dataset but not included in the national analysis. Consequently, the contribution chronic conditions make to the ill-health of the population may be underestimated.

**Chronological differences across data:** There is a lack of consistency across the data collection and reporting. For example, at the time of HNA analysis, the mortality data was available up to 2004, the hospitalisation data was available up to 2006 (and part of 2007) and the cancer registrations were up to 2005. Similar differences were noticed in the life expectancy of Maori (information developed by Statistics NZ), which was based on 2002 population data not on the 2006 population.

**Health Service Utilisation Data:** Where possible, data from external entities were used in the HNA analysis, however, this will not provide a full picture of the extent of health service utilisation, as majority of the organisations neither have an automated system for data collection nor have consistent discipline in place for the type of information gathered for analysis. As effective and efficient utilisation of services are critical measures of achieving health outcomes, additional resources needs to be deployed (both financial and human resources) to identify cost effective means of information gathering and dissemination.

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**Ethnic Group Composition:** Statistics New Zealand national household survey identifies “primary” ethnicity of the population under the following three ethnic groups: Maori, Other (Includes Asians) and Pacific People. As the population demographics are not available by individual Asian ethnic breakdown, it is not feasible to calculate age standardised and age specific rates, eg. Asians. In addition, historically ethnicities were recorded inaccurately.

**Disability Support Services:** Confusing data was provided around the support of disabled and chronically medically ill people. As the Ministry of Health (MoH) pays for support services for physical disability, staff resources across the DHBs are not familiar with the data recorded by the MoH. The data analysis team within the DHB need to work closely with the MoH system administration teams.

**Mental Health Information:** Lack of integration and ongoing maintenance to MHINC resulted in large information gaps, inaccurate information. This problem is compounded by the fact that a large number of Non Government Organisations (NGOs) have disparate systems for data collection and analysis. Consequently, the mental health information provided in this HNA2008 must be treated with caution and DHBs need to work closely on the timely implementation of the new PRIMHD system for robust future analysis.

**Leading Causes of Illness:** The leading causes of hospitalisation and mortality outlined in this HNA were analysed by individual ethnic group. Based on the analyses, it is evident that the health priorities were consistent across the ethnic compositions. No major health priority was identified that was specific to an ethnic group.

**CCPS Data:** This system collects the payment information for disability support services for older and disabled people. The system has gone through numerous modifications over time resulting in inaccurate information and lack of clear understanding of the data. The above problem is compounded by the fact that the CCPS system always treated the four regions in different ways. It is absolutely essential for the DHBs to reassess and rewrite or replace this vital system for effective future planning.

## **2.6 Future HNA Analysis - Recommendations**

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It is recommended that future analysis of HNA includes:

**National Non Admission of Patient Collection (NNPaC)** data. This is a new national collection of outpatient, emergency and domiciliary patient information.

**Secondary diagnoses:** Additional information to identify the potential benefits of reducing contributing factors such as chronic illness. This data may be from the national systems or from other disparate systems.

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**Chronic Illness Registers:** These will hold valuable supplementary data such as information on the stage of illness at the time of registration for chronic diseases, eg. Cancer register.

**Primary Health Organisation data:** As it becomes available from PHOs

In addition to the strategic team mentioned above, it is important that stakeholders are identified and involved early. This involvement must be encouraged by DHB management. Once broad analysis has indicated areas for detailed work, stakeholders, especially clinical teams, should be advised by their management to suggest recent and relevant source material and data collections outside the national data collections. For each area, a synopsis of planned analysis should be reviewed at an early stage so the planners and analysts can be informed and advised by specialist clinical knowledge.