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NEW ZEALAND'S EXPERIENCE OF MEASURING HEALTH STATUS WITH HEALTH SURVEYS

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INTRODUCTION

Official health statistics in New Zealand are decentralised. The Ministry of Health compiles the majority of the statistics produced, mainly from administrative sources such as hospital morbidity and mortality records and notifiable disease registers (eg. cancers), but also from population health surveys. Statistics New Zealand (the national statistical office) and other government agencies also conduct surveys that are about or include elements of population health. This paper focuses on the main national population health survey programme and the New Zealand health monitor conducted by the Ministry of Health.

BACKGROUND TO POPULATION HEALTH SURVEYS IN NEW ZEALAND

National population health surveys are a more recent development in New Zealand. Generally they have been conducted in an ad hoc manner; some funded directly by Government and conducted by central agencies (eg. Ministry of Health and Statistics New Zealand) and others through health research funding and conducted by universities.

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An early example was the National Dietary Survey (Heart Foundation 1978). Similar surveys of adult nutrition status were carried out in 1989 (Life in New Zealand Survey, Hillary Commission), which also included measures of physical activity, and in 1997 (National Nutrition Survey, Ministry of Health)

A general national health survey was first undertaken in 1993/94, followed by others in 1996/97 and 2002/03. Statistics New Zealand on behalf of the Ministry of Health conducted the first two. The Ministry commissioned a commercial survey research company to conduct the 2002/03 survey. In 1996/97 Statistics New Zealand conducted a first national disability survey, co-sponsored by a consortium of agencies, including the Ministry of Health. This was a post-census survey, using the census to identify a target population. It was repeated in 2001 following the 2001 census and another is planned in 2006 to follow the census of that year.

Data on various aspects of smoking have been collected in alternate censuses and in annual surveys of adults since 1983 and fourth form secondary school students since 1997. Data on the use of other drugs, including alcohol, has been collected through telephone surveys carried out by the University of Auckland on several occasions, most recently in 1998 and 2001 (National Drug Surveys). The household economic survey conducted by Statistics New Zealand since the mid 1970s collects data on tobacco and alcohol expenditure by households. However, it is known to underestimate actual levels of expenditure due to under-reporting on these items.

In 1998/99 Statistics New Zealand conducted a time use survey that collected, among other things, time spent on health-related activities such as personal medical care, physical exercise, receipt of health services, etc.

In 2001 the University of Auckland also carried out a secondary school-based survey of adolescent health (Youth 2000 Adolescent Health Survey). In 1995 the University of Waikato carried out a social survey that included a major health component (New Zealand women: Family, Education and Employment.) In 2000 the Ministry of Social Policy commissioned a survey (Living Standards of Older People), which also included a major health component. Two other surveys currently in the field include a first national survey of child nutrition (Ministry of Health) and a first national survey of mental health (Ministry of Health and University of Auckland).

In 2002 the Ministry of Health established a programme of population surveys, entitled the 'New Zealand Health Monitor', which aims to ensure an ongoing commitment to population health monitoring through a funded programme of surveys. Previously, surveys were undertaken on an ad hoc basis, as and when funding could be secured. The NZ health monitor effectively commits a funding pool within Vote Health to supporting a series of key surveys over a ten-year cycle. The programme comprises:

- general health survey
- age-specific health surveys
- nutrition survey (separate child & adult surveys)
- mental health survey
- health behaviour survey
- CATI rapid response facility

This establishment of this survey programme will enable a series of smaller topic-focused surveys to be built around the major health survey and the health behaviours surveys. Examples include age group-specific surveys, such as children and older people, and methodologies such as CATI to provide information on 'topics of the day' – eg problem gambling. There are currently four health behaviour survey modules either in the field or in development: drugs, tobacco, alcohol, and sex and reproduction. These are designed to obtain data on behaviours in regard to these issues.

More details on the New Zealand health monitor are contained in an appendix to this paper.

In 2003 Statistics New Zealand established a programme of social surveys aimed at providing co-ordination across the government sector to ensure that a range of critical monitoring information was available and produced to a standard expected of 'Tier 1' official statistics. (These are statistics collected by Statistics New Zealand and other government agencies that are of prime national importance and which receive priority under the statistical co-ordination and management provisions of the Statistics Act.) The new social surveys programme will include some surveys in the NZ health monitor, such as the general health survey. It also includes other social surveys that relate to population health or include health elements such as:

- new longitudinal survey of family, income and employment dynamics (currently in the field)
- disability survey
- new general social survey
- housing survey
- time use survey.

GENERAL NATIONAL HEALTH SURVEYS

Three general national health surveys have been conducted in New Zealand in 1992/93, 1996/97 and 2002/03. These surveys have addressed four topic areas:

- health-related behaviour (protective and risk factors
- selected morbidity incidence (eg. heart disease, diabetes & asthma)
- reported health status
- use of health services

Provisional results of the latest 2002/03 survey were published in 2003 and more extensive descriptive analyses are being prepared and scheduled for publication in 2004.

The 2002/03 survey was conducted on a sample of over 12,000 New Zealanders aged 15 years and over, living in permanent private dwellings and institutions. Also included in the design was a longitudinal element. The sample design was area-based and one person was selected from each sampled household for a face-to-face interview.

The sample size ranks this 2002/03 survey among the larger household surveys undertaken in New Zealand and reflects the need to be able to generate robust statistics about both the range of constituent health topics as well as the distribution of health across population groups. In New Zealand particular attention is given to ethnic distribution, along with the more common epidemiological dimensions of age, sex and socio-economic status. To accomodate this objective the design included over-sampling of selected ethnic groups. The demand to elaborate aggregate health indicators in some detail stretches the capability of a sample even this size and

there are apparent limits on inferences that can be drawn about changes over time and differences between groups of interest.

The response rate for the 2002/03 survey was 74 percent, which tends to the lower limit of what is considered desirable for a survey generating Tier1 official statistics. The risk of significant measurement bias is of greater concern for response rates below this level. This survey incorporated a longitudinal element and encouragingly 89 percent of respondents agreed to be contacted again in two to three years for a follow up survey.

The methodology and instruments employed over the three surveys to date have not been consistent. This stems from the evolving nature of these surveys in New Zealand and the priority accorded to reflecting the latest best practice for each survey. The Ministry of Health views the 2002/03 survey as a transition from the earlier ones to the new health monitor programme. New modules on topics such as problem gambling were added and other aspects were refined to obtain better alignment with the latest recommended WHO survey methodologies. However, lack of standardisation detracts from the monitoring function. It is difficult to draw from these surveys conclusions about the nature of change in the health outcomes of New Zealanders over the last decade. At a broader level it is also difficult to integrate the results with other surveys to inform cross-sectoral social research.

The measurement of self perceived health status illustrates this point. The 1996/97 survey employed the SF36 instrument to measure self-reported health status. The SF36 instrument was replaced In the 2002/03 survey by a modified form of the WHO instrument (long form) which was considered by the Ministry of Health to be superior because it covered a larger number of health dimensions. Although the SF36 is embedded in the WHO instrument, it was administered as a self-completed questionnaire in the 1996/97 survey, while the WHO instrument was interviewer-administered in the 2002/03 survey. In addition to these three national health surveys, New Zealand also participated in the WHO health survey in 2001. This survey employed a mail-back methodology and used a short form of the WHO instrument.

From the perspective of a national statistical office, it will almost always be the case that national requirements must be able to be addressed first and foremost and that accommodating international needs should be seen as an important but secondary priority.

The establishment of survey co-ordinating programmes by both Statistics New Zealand and the Ministry of Health will provide an opportunity to implement a degree of management and standardisation that will considerably enhance the monitoring potential and value of the constituent surveys. There will remain a healthy tension between the need to maintain standardisation to ensure comparability and a need to embrace change to maintain relevance. However, this tension can be better managed and a proper balance better achieved when individual surveys and constituent topics and instruments are viewed within the context of a broader and coherent information framework.

POPULATION HEALTH INFORMATION FRAMEWORK

The Ministry of Health established in 2002 a new statistical reporting framework for monitoring population health. This is referred to as 'An Indication of New Zealander's Health' and was built on an earlier framework developed by the Public Health Commission in 1993.

The framework brings together a set of some 30 population health indicators derived from a variety of sources including administrative data (eg. hospital records and disease registers) and population health surveys. Core indicators are updated annually and others on a longer periodicity, depending on the nature of the indicator and the availability of update data.

The framework provides for monitoring change over time, highlighting key population distributional aspects and international comparisons. A 'level of causation' dimension distinguishes socio-economic & environmental determinants, risk/protection factors and outcomes.

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APPENDIX 1: Structure of the New Zealand Health Monitor

Proposed survey	**Related recent or current survey**	**Information domains tapped**	**Design**	**Age range and Sample size**	**Frequency per 10 year cycle and special features**
General Health Survey	NZ Health Survey 1996/97	Health outcomes Health causes Health services	Dual frame Household plus institutional (every second wave)	15+ - 5000 per wave 0-14 - 2500 per wave	5 waves (i.e. once every two years Longitudinal dimension - half of each wave followed to or included in next wave
Age Specific Health Surveys	None	As above, but age appropriate for children/elderly	CAPI only Household plus school (for 12-14 year olds)	0-14 - 5000	Three times(i.e. three or four or yearly)
Mental Health Survey	Mental Health Epidemiology Study 2004	Mental illness (CIDI) Use of/need for mental health services	CAPI only Household plus institutional	15+ - 5000	Once (i.e. eight to ten-yearly)
Adult Nutrition Survey (sub-survey of the Nutrition Survey) Children's Nutrition Survey (sub-survey of the Nutrition Survey)	National Nutrition Survey 1997 Child Nutrition Survey 2002	Nutritional status Food security Health examination As above, but for children	CAPI only Household only CAPI only Household and school (12-14 year olds)	15+ - 5000 0-14 - 5000	Once (i.e. eight to ten-yearly) Once (i.e. eight to ten-yearly)
Health Behaviour Survey	National Drug Survey 1998, 2001 Fourth Form smoking survey (annual)	Drug use Sex and reproductive health Injury risk Suicide Sleep Stress	CATI and CAPI Household (CATI) and school (12-14 yrs, CAPI)	12 + - 2500 per wave	5 times (i.e. two yearly)
CATI Rapid Response Facility	None	Emergent information need (e.g. problem gambling)	CATI (re-contact recent GHS and HBS participants; administer to current sample; recruit additional sample; mix of above)	15+ not predetermined	As needed