

DISCUSSION PAPER No. 17

MĀORI HEALTH INDICATORS

***A BACKGROUND PAPER FOR THE PROJECT
'ACTION-ORIENTED INDICATORS
OF HEALTH AND HEALTH SYSTEMS
DEVELOPMENT FOR INDIGENOUS
PEOPLES IN AUSTRALIA,
CANADA AND NEW ZEALAND'***

*Mibi Ratima, Will Edwards, Sue Crengle,
Janet Smylie & Ian Anderson*

Onemda VicHealth Koori Health Unit

Discussion Paper No. 17

December 2006

ISBN 0 7340 3680 9

© Mihi Ratima, Will Edwards, Sue Crengle, Janet Smylie, Ian Anderson
and *Onemda* VicHealth Koori Health Unit, 2006

ISBN 0 7340 3680 9

First printed in December 2006

This work is joint copyright. It may be reproduced in whole or in part for study or training purposes, or by Aboriginal, Torres Strait Islander, Māori, First Nations, Inuit and Métis community organisations subject to an acknowledgment of the source and no commercial use or sale. Reproduction for other purposes or by other organisations requires the written permission of the copyright holder(s).

This research was supported by an operating grant from the Canadian Institutes of Health Research (CIHR). Dr Smylie is supported by a CIHR–Associated Medical Services Inc.–Institute of Aboriginal Peoples’ Health Phase Two Senior Research Fellowship in the History of Aboriginal Health and Medicine.

Additional copies of this publication can be obtained from:

Onemda VicHealth Koori Health Unit
Centre for Health and Society
School of Population Health
4/207 Bouverie Street
The University of Melbourne
Vic. 3010 AUSTRALIA

T: +61 3 8344 0813

F: +61 3 8344 0824

E: koori@chs.unimelb.edu.au

W: www.onemda.unimelb.edu.au

Copy Editor: Cathy Edmonds

Managing Editor: Jane Yule

Cover Artwork: Michelle Smith & Kevin Murray

Cover Design: University of Melbourne Digital Print Centre

Printed by University of Melbourne Digital Print Centre

Table of Contents

Discussion Paper Series	iii
Acknowledgments	v
Abbreviations	vi
Executive Summary	1
Introduction	2
Māori Concepts of Health	3
The Evolution of Māori Health Indicators	4
Key Health Sector Structures	5
Māori Health Information	7
Māori Health Indicator Sets	9
Ministry of Health	9
Māori participation	11
Māori concepts of health	12
Use of information	13
District health boards	13
Māori participation and Māori concepts of health	15
Use of information	15
Auckland Regional Public Health	15
Māori participation	15
Māori concepts of health	15
Primary health organisations and Māori health providers	16
Māori participation	17
Māori concepts of health	18
Use of information	18
Research institutions	18
Indicators Compendium	19
Māori Health Indicator Issues	20
Concluding Comments	22
References	24
Attachment 1: Indicators Compendium	27
Data Collections Held by NZHIS	32

Onemda **VicHealth Koori Health Unit: Discussion Paper Series**

The *Onemda* VicHealth Koori Health Unit (formerly VicHealth Koori Health Research and Community Development Unit), launched in June 1999, has been developed in partnership with Aboriginal communities and organisations, in particular the Victorian Aboriginal Community Controlled Health Organisation. Core funding is provided by the Victorian Health Promotion Foundation, the University of Melbourne through the Centre for Health and Society where the Unit is located, and the Commonwealth Department of Health and Ageing.

At the core of the Unit's work is a commitment to undertaking, collaborating in and supporting research that directly benefits the Koori community. The work of the Unit spans academic and applied research, community development, and medical education. The combination of these activities is a central and innovative aspect of the Unit's function, as is the identification and use of mechanisms to link research with the improvement of health care practices and policy reform. Overall, these tasks are guided by a Strategic Oversight Committee.

In relation to the research program, five key areas govern the inquiry undertaken within the Unit. These comprise: historical research into Koori health policy and practice; historical and contemporary research into health research practice, ethics and capacity building; applied research on the social and cultural experience of Koori health, wellbeing and health care delivery; health economics research on the factors and processes that impact on the provision and use of Koori health care; and the evaluation of Koori primary health care and related health promotion programs.

The Discussion Paper Series (DPS) is directly linked to this diverse program of research and provides a forum for the Unit's work. The DPS also includes papers by researchers working outside the Unit or in collaboration with Unit staff. Individual papers aim to summarise current work and debate on key issues in Indigenous health, discuss aspects of Indigenous health research practice and process, or review interim findings of larger research projects. It is assumed that the readership for the series is a broad one, and each paper is closely edited for clarity and accessibility. Additionally, draft papers are 'refereed' so as to ensure a high standard of content.

More information on the series, on the preparation of draft papers, and on the work of the Unit can be obtained by directly contacting the Unit. Copies of all discussion papers are available from the Unit, or can be downloaded as pdfs from the *Onemda* website.

Onemda VicHealth Koori Health Unit

Centre for Health and Society, Level 4 / 207 Bouverie Street

The University of Melbourne, Vic. 3010 AUSTRALIA

T: +61 3 8344 0813

F: +61 3 8344 0824

E: koori@chs.unimelb.edu.au

W: www.onemda.unimelb.edu.au

Discussion Paper Titles

- No. 1: Ian Anderson, Harriet Young, Milica Markovic & Lenore Manderson, *Aboriginal Primary Health Care in Victoria: Issues for Policy and Regional Planning* (December 2000).
- No. 2: Kim Humphery, *Indigenous Health and 'Western Research'* (December 2000).
- No. 3: David Thomas, *The Beginnings of Aboriginal Health Research in Australia* (September 2001).
- No. 4: Michael Otim, *Indigenous Health Economics and Policy Research* (November 2001).
- No. 5: Daniel McAullay, Robert Griew & Ian Anderson, *The Ethics of Aboriginal Health Research: An Annotated Bibliography* (January 2002).
- No. 6: Ian Anderson, *National Strategy in Aboriginal and Torres Strait Islander Health: A Framework for Health Gain?* (March 2002).
- No. 7: Anke van der Sterren & Ian Anderson, *Building Responses to Blood-Borne Virus Infection among Kooris Using Injecting Drugs—Improving the Link between Policy and Service Delivery* (December 2002).
- No. 8: Kim Humphery, *The Development of the National Health and Medical Research Council Guidelines on Ethical Matters in Aboriginal and Torres Strait Islander Health Research: A Brief Documentary and Oral History* (December 2002).
- No. 9: Michael Otim, Ian Anderson & Russell Renhard, *Aboriginal and Torres Strait Islander Hospital Accreditation Project: A Literature Review* (November 2002).
- No. 10: Nili Kaplan-Myrth, *Political Visions: Blindness Prevention Policy as a Case Study of Community–Government Relations in Aboriginal Health* (June 2004).
- No. 11: Gregory Phillips & the Project Steering Committee, Committee of Deans of Australian Medical Schools, *CDAMS Indigenous Health Curriculum Development Project: National Audit and Consultations Report* (August 2004).
- No. 12: Ian Anderson, Wendy Brabham, Bill Genat, Helen Keleher, Janice Jessen, Di Fitzgerald & Bernie Marshall, *National Indigenous Public Health Curriculum Audit and Workshop: Project Report* (October 2004).
- No. 13: Katrina Alford, *Comparing Australian with Canadian and New Zealand Primary Care Health Systems in Relation to Indigenous Populations: Literature Review and Analysis* (June 2005).
- No. 14: Terry Dunbar & Margaret Scrimgeour, *Ethical Assessment of Indigenous Health Research: A Review of the Literature* (December 2005).
- No. 15: K. Jane Middleton, *Mothers, Boorais and Special Care: An Exploration of Indigenous Health Care Workers' Perceptions of the Obstetric and Neonatal Needs of Rural Victorian Aboriginal and Torres Strait Islander Families Transferred to the Mercy Hospital for Women* (October 2006).
- No. 16: Marcia Anderson, Ian Anderson, Janet Smylie, Sue Crengle & Mihi Ratima, *Measuring the Health of Aboriginal and Torres Strait Islander Peoples* (December 2006).
- No. 17: Mihi Ratima, Will Edwards, Sue Crengle, Janet Smylie & Ian Anderson, *Māori Health Indicators* (December 2006).
- No. 18: Marcia Anderson, Janet Smylie, Ian Anderson, Raven Sinclair & Sue Crengle, *First Nations, Inuit and Métis Health Indicators in Canada* (December 2006).

Acknowledgments

Tēnei te mihi ake ki ngā kaimahi e kōkiri nei i tēnei kaupapa te hauora o ngā tāngata whenua huri noa — We would like to thank the individuals who contributed to the paper by providing information and time as key informants.

This paper is a background document for the project ‘Action-oriented indicators of health and health systems development for Indigenous peoples in Australia, Canada and New Zealand’. The overall project is led by Dr Janet Smylie (University of Saskatchewan, Canada) and the co-principal investigators are Dr Sue Crengle (University of Auckland) and Professor Ian Anderson (The University of Melbourne). This paper was prepared by Dr Mihi Ratima (Auckland University of Technology), Will Edwards (Massey University), and the project co-principal investigators. The project was funded by a grant from the Canadian Institutes for Health Research, Global Health Strategic RFA (Request for Applications).

Ngā mihi ki a koutou katoa.

Abbreviations

BSA	Breast Screening Aotearoa
CNS	Child Nutrition Survey
CYFS	Children Youth and Family Services
DHB	District Health Board
ESR	Environmental Science and Research Ltd
HWAC	Health Workforce Advisory Committee
MAPO	Māori Purchasing Organisations
MHINC	Mental Health Information National Collection
NBRS	National Booking Reporting System (Data)
NCSP	National Cervical Screening Programme
NZHDS	New Zealand Household Disability Survey
NZHIS	New Zealand Health Information Service
NZHS	New Zealand Health Survey
PHO	Primary Health Organisation
SPARC	Sport and Recreation New Zealand

Executive Summary

Robust Māori health indicator sets that are relevant and meaningful at the national, regional and local levels are a necessary foundation for the most effective planning, policy development, purchasing, service delivery and monitoring to improve Māori health outcomes. This paper outlines the health sector context for Māori health indicator set development, and describes principal Māori health indicator sets with a focus on Māori participation in indicator selection and development, the extent to which indicator sets reflect Māori concepts of health, and how indicators are being used. The paper draws on local literature and the results of interviews with thirteen key informants representing a range of health sector organisations at the national, regional and local levels.

Within the health sector, existing Māori health-monitoring frameworks and indicator sets have largely been determined in a 'top-down' way with limited Māori input. It is therefore not surprising that these indicator sets are biased towards national and regional level information requirements, and that Māori stakeholders have poor access to information for local planning and decision making. Further, it is apparent that information collection is largely accountability driven, and that current indicator sets are limited in their capacity to capture the state of Māori health in Māori terms.

Māori health-monitoring frameworks that draw on known Māori models, and that are populated by a mix of universal and Māori-specific indicators, will be necessary to ensure that indicator sets reflect Māori understandings of health and can provide a comprehensive empirical base for planning and delivery of health services for Māori. This will rely upon strong Māori leadership and participation in monitoring framework and indicator set development.

Introduction

Māori, the Indigenous peoples of New Zealand, comprise 14.7 per cent (526,281 people) of the total New Zealand population and are growing as a proportion of the population (Statistics New Zealand 2003). Māori vitality continues to be expressed through a range of Māori-driven initiatives, such as kōhanga reo (Māori language immersion pre-schools) and kura kaupapa Māori (Māori language immersion schools), which aim to improve Māori educational attainment and strengthen cultural integrity. The numbers of Māori children and youth who speak Māori have increased in the previous twenty-year period (Te Puni Kokiri 2001), levels of Māori participation in tertiary education are higher than ever before (Ministry of Education 2005), and there is a strengthening presence of Māori within the professional workforce (Dept of Labour 2005).

However, despite significant gains Māori remain marginalised in social, economic, cultural and political terms within New Zealand society. The extent of marginalisation is reflected in wide, and in some instances increasing, disparities between the state of Māori and non-Māori health (Ajwani *et al.* 2003:120). While the major determinants of Māori health lie outside the health sector, there is much that can be done within the sector to contribute to health status equity between Māori and non-Māori, particularly in light of international and local evidence of ethnic disparities in healthcare (Kressin & Petersen 2001; Tukuitonga 2002).

A strategic approach to Māori health development, which enables informed planning, policy development, purchasing, service delivery and monitoring, will rely on the use of Māori health indicators that are able to gauge accurately the health and wellbeing of Māori. This paper is a background document for the project 'Action-oriented indicators of health and health systems development for Indigenous peoples in Australia, Canada and New Zealand'. The goal of the overall project is to conceptualise and pilot a health indicator development cycle that will contribute to effective health information, surveillance and monitoring systems that contribute to improving the health of Indigenous peoples.

This paper briefly outlines the health sector context for Māori health indicator set development, and then describes principal Māori health indicator sets with a particular focus on Māori participation in indicator selection and development, the extent to which indicator sets reflect Māori concepts of health, and how indicators are being used. It draws primarily on local literature and the results of key informant interviews. Using an interview schedule, these thirteen open-ended interviews were carried out either face-to-face or by telephone. The interviewees selected were considered to be rich sources of information regarding the development and use of national, regional and/or local Māori health indicators. The key informant group included representation from a range of health sector organisations including the Ministry of Health, district health boards, primary health organisations, Māori providers and universities.

Māori Concepts of Health

The 1988 Royal Commission on Social Policy, guided by Māori expertise, identified Ngā Pou Mana (support structures)—four prerequisites of Māori health (Henare 1988). The prerequisites are whanaungatanga (kinship relationships), taonga tuku iho (cultural heritage), te ao tūroa (environment) and tūrangawaewae (land base). These prerequisites are among the factors identified by a number of writers as central to a secure Māori identity and wellbeing (Durie 1998).

The prerequisites can be considered to underpin Māori understandings of health. Te Whare Tapa Whā (Durie 1998) is the most widely quoted Māori model of health. The model describes good health as the balance between four interacting dimensions: te taha wairua (spirituality), te taha hinengaro (thoughts and feelings), te taha tinana (the physical side) and te taha whānau (the extended family). Health is likened to the four walls of a house, each wall representing one of the dimensions and each being necessary to ensure the stability of the house.

There are other models of Māori health, such as Te Wheke (Pere 1984). The common features of Māori models of health are that health is described as holistic in nature, individuals are located within the family context, determinants of health are recognised (spiritual, cultural, social and biological), continuity between the past and the present is emphasised, and good health is viewed as a balance between interacting variables. There is concern for ensuring access to cultural resources, and a secure Māori identity is central to good health. In comparison to Western understandings of health, Māori concepts of health incorporate a spiritual dimension and a focus on cultural integrity.

The main criticism of Māori models of health is that they do not take account of the diverse realities of Māori. That is, there are many Māori who are disconnected from iwi (tribal) society. Māori models of health imply that those Māori who do not have access to Māori resources, such as tribal land, kinship networks and the Māori language, cannot expect to achieve good health. The critical point, however, has more to do with the form that good health might take. The prerequisites and the models of Māori health together express what it is to achieve good health as Māori. Without access to Māori resources it would be difficult to achieve a secure Māori identity and, therefore, to be well as Māori. However, that does not exclude individuals from achieving good health as measured by other standards (Ratima 2001).

¹ This section is adapted from M. Ratima, *Kia Uuruuru Mai a Hauora: Being Healthy Being Maori, Conceptualising Maori Health Promotion*, Department of Public Health, University of Otago, Dunedin, 2001, p. 305.

The Evolution of Māori Health Indicators

Māori have repeatedly expressed concerns that although universal health indicators are important, they are limited in their capacity to capture the state of Māori health according to Māori concepts of health (Durie 1994; Pomare *et al.* 1995). Generally, indicators have focused on the physical dimension of health and, to a lesser extent, mental health, with other dimensions of wellbeing neglected. Other specific concerns are that universal indicators are disease-centred rather than wellness-centred, relate to hospital activities, fail to capture community-based activities and have been developed for specific purposes as opposed to providing a comprehensive picture of the state of Māori health (Durie 1998). There are also concerns in relation to the quality of ethnic data. It is well recognised that, due to inconsistencies in the collection and reporting of ethnic data, Māori are undercounted in health sector data. However, since 1995 it has been obligatory to record ethnicity on death certificates, and in 2004 the Ministry of Health (2004a) introduced the Ethnicity Data Protocols (Ministry of Health 2004a). The protocols outline procedures for standardising collection, recording and output of ethnic data. It is intended that the protocols will be implemented across the entire sector, and they are designed specifically for collectors of ethnicity data (e.g., health professionals, clerks and administrators), users of ethnicity data (e.g., for service planning, quality control, development of funding formulas) and health information software developers. The protocols are intended to contribute to the achievement of more accurate and complete ethnicity data in the sector.

There are compelling reasons for developing indicator sets that are better able to capture the state of Māori health and therefore provide quality data. The reasons include enabling informed planning, policy development, purchasing and service delivery, and monitoring health sector performance in meeting Māori health needs and addressing inequalities (Robson & Reid 2001). Importantly, there is also a Treaty of Waitangi rationale. The Treaty was signed between Māori and the British Crown in 1840 and reaffirmed some existing Māori rights, guaranteed the protection of specific Māori interests and legitimated the right to govern of the New Zealand Government (Durie 1998). The Treaty places a responsibility on the government to ensure that health sector data are collected and reported in such a way as to benefit Māori health (Ministry of Health 2002a).

Māori have advocated for the development of broader indicators that complement universal indicators and are better able to capture what Māori consider to be positive health outcomes. Te Ara Ahu Whakamua (Te Puni Kokiri 1993), the Māori Health Decade Conference, identified preferred Māori health indicators, which were linked to social (e.g., educational achievement and reduced crime rate), economic (e.g., value of resources in Māori ownership and economic success), cultural (e.g., Māori language usage) and political (e.g., Māori in positions of influence) determinants of health.

Key Health Sector Structures

The *New Zealand Public Health and Disability Act 2000* defines the health sector structure and provides the legislative framework for Māori health development within the sector. Section 3(1)(d) of the Act specifically requires the facilitation of ‘access to, and the dissemination of information to deliver, appropriate, effective, and timely health services, public health services and programmes, both for the protection and the promotion of public health, and disability support services...’. The Act contains a number of more general provisions that relate specifically to Māori.

Key health sector structures involved in Māori health indicator development and use are the Ministry of Health, district health boards (DHBs), Māori purchasing organisations (MAPO), Māori development organisations, hospitals, primary health organisations (PHOs) and Māori health providers.

The Minister of Health has responsibility for developing the overall strategy for the health sector and also manages funding for some services. In terms of Māori health, the major role of the Ministry of Health is to advise the minister on policy that will meet the government’s objectives for Māori health. The objectives are most comprehensively stated in *He Korowai Oranga* (Ministry of Health 2002a), the Māori Health Strategy. The Ministry of Health includes Te Kete Hauora, the Māori Health Directorate, as one of its nine directorates. The Māori Health Directorate is headed by the Deputy Director General Māori Health and is responsible for providing advice to the government and liaising with other directorates in relation to Māori health (King 2000). Te Puni Kōkiri, the Ministry of Māori Development, has a role in liaising with and monitoring the performance of other government agencies, including the Ministry of Health, in service provision to Māori.

The New Zealand Health Information Services (NZHIS) is located within the ministry and has responsibility for the collection, processing, maintenance and dissemination of health data. NZHIS functions include health information analysis, performance monitoring and advice about data usage (NZHIS 2005). Public Health Intelligence is located within the Public Health Directorate of the Ministry of Health and is responsible for monitoring the health of the population by analysing health outcomes, risks and determinants over time and examining inequalities in health across regional boundaries and between various population groups (Ministry of Health 2005a).

Following the 2000 reforms, the twenty-one DHBs were established with the primary function of meeting the health needs of those living within their districts through purchasing health services on behalf of the Crown. The reforms aimed to move the sector towards a more planned and community-oriented system, and gave DHBs responsibilities

in primary, secondary and tertiary care (Ashton 2005). The inaugural DHB elections were held in 2001. DHBs have up to eleven members, seven of whom are elected. Up to an additional four members can be appointed by the Minister of Health. The minister, in making appointments to DHBs, must seek to ensure that Māori board membership is proportional to the number of Māori in the resident population of the DHB's region, and that there are at least two Māori board members.

The government's objectives for Māori health are reflected in funding agreements with DHBs, which are responsible for monitoring the service agreements with a range of providers (e.g., hospitals, PHOs, Māori providers) and also deliver some health services. Māori co-purchasing and Māori development organisations work with DHBs and Māori and mainstream providers to facilitate improved funding and delivery of services to Māori.

The New Zealand Primary Health Care Strategy (King 2001) was released in February 2001. PHOs are the local structures, funded and monitored by DHBs, which largely carry out work to achieve the strategy's objectives. PHOs were first established in July 2002, and by April 2005, 90 per cent of the population was reportedly covered by seventy-seven PHOs (Ministry of Health 2005b).

The role of PHOs is to deliver a range of primary health care services to enrolled populations, essentially general practice and health promotion services, and services to improve access for high-need groups. PHOs have been funded according to a formula that reflects the relative need of the enrolled population, taking account of age, sex, deprivation level and ethnicity. Additional 'Services to Improve Access' funding has been available for PHOs that service high-need populations, which includes PHOs with an enrolled population of over 50 per cent Māori (Ministry of Health 2003).

The 1996 Coalition Government Agreement on Health required progress in terms of Māori provider development. As a consequence of the agreement, the Māori Provider Development Scheme was introduced in 1997. The scheme allocates NZ\$10 million per year to Māori provider and workforce development. The numbers of Māori providers delivering a range of primary health care services have increased from approximately twenty-three in 1993 to around 286. However, there are relatively few Māori health providers throughout the country and most Māori have no choice but to access mainstream providers, particularly for secondary health care.

Māori Health Information

The Ministry of Health's *Statement of Intent* (Ministry of Health 2005c) identifies the importance of the collection, analysis and communication of information to promote evidence-based decision making. The New Zealand Health Strategy states the need for improved access to 'relevant information to improve decision making at both the health and disability sector level and at community level, enabling a greater role in decision making by communities' (King 2000). *He Korowai Oranga* (Ministry of Health 2002a) specifically identifies improving Māori health information as a key government objective. This objective is supported in a range of other government health strategy documents, including the strategic information document *From Strategy to Reality—The WAVE Report: Kia hopu te ngaru* (WAVE Advisory Board 2001) and the Primary Health Care Strategy.

The majority of health sector data collection occurs in two ways, through service- or patient-based information collection and through the New Zealand Health Monitor health survey program. Service-based data are collected through primary, secondary and tertiary health services. The Ministry of Health's WAVE report (WAVE Advisory Board 2001) has provided a plan for development of service- or patient-based information systems. This information focuses on clinical care outcomes, inputs (resources provided or consumed) and throughputs (volumes and times). Although data collected from service- or patient-based information sources is essential for an evidence-based approach, a sole reliance on this type of data is limited as it does not provide information in relation to unmet need and broader health outcomes (Ministry of Health 2002b). Service-based data are currently most comprehensively collected and reported in relation to secondary services. The WAVE report noted concerns that, while primary health care providers are collecting substantial amounts of data, ethnicity data and some important health status data are not routinely collected. Further, there is a lack of consistency in the type of database on which information is stored, the extent to which providers mine datasets, and limited feedback from data review. The report recommended reliable ethnicity data collection, annual auditing of ethnicity data and the strengthening of Māori information technology workforce capacity.

The New Zealand Health Monitor is a Ministry of Health-administered integrated population health survey program carried out over a ten-year cycle. It is intended that regular surveys will be carried out with a two- to ten-year frequency. Survey areas are planned to include general health, age-specific health, mental health, adult nutrition, child nutrition, health behaviour and computer-assisted telephone interviewing rapid response surveys in specific areas of need. Recent or pending surveys in these areas include the New Zealand Health Survey, the Mental Health Epidemiology Survey, the National Drug Survey and the Fourth Form Smoking Survey. Data in relation to secondary services

are more readily available through other sources, so the Health Monitor's focus is at the primary services level. This includes information in relation to coverage, responsiveness and cost (Ministry of Health 2002b).

Government documentation on the New Zealand Health Monitor makes a commitment to recognise Māori as Treaty partners, to consult with Māori in the design, fielding and analysis of component surveys, and to produce information that is relevant to Māori. However, despite this stated commitment, the health monitor is primarily a tool to inform health sector strategic planning at the national level, rather than at local or iwi levels, due to sample size issues, which limit the ability to draw reliable estimates at district and local levels (Ministry of Health 2002b).

Other regular surveys that sit outside the health monitor are also useful sources of health data. One example is the Quality of Life Survey, which measures the quality of life of residents in twelve New Zealand cities/districts as well as a sample of residents living outside the twelve cities/districts. The survey uses fifty-six quality of life indicators, which include measures concerned with knowledge and skills, economic development, safety, the built environment, social connectedness, and civil and political rights. The survey aims to measure the quality of life and change in social conditions in New Zealand's large urban areas. The survey has been carried out on a two-yearly basis since 2000, with six cities/districts participating in the inaugural survey (Gravitas Research & Strategy Limited 2005).

The Ministry of Social Development, since 2001, has reported on indicators across ten domains to provide a picture of the wellbeing and quality of life of New Zealanders. The ten indicators are social connectedness, safety, physical environment, leisure and recreation, cultural identity, civil and political rights, economic standard of living, paid work, knowledge and skills, and health. The five health-specific indicators included in 2005's *The Social Report* (Ministry of Social Development) are health expectancy, life expectancy, suicide, the prevalence of cigarette smoking and obesity. Information from the report is examined by ethnicity and can be used to measure disparities across sectors.

Māori Health Indicator Sets

There is no universally agreed national Māori health monitoring framework and indicator set in use. The approach taken in this paper is to discuss indicator sets in relation to key national, regional and local health sector structures. Indicator sets are discussed in terms of Māori participation in indicator development, the extent to which current indicators reflect Māori concepts of health, and the way in which the derived information is used. The discussion draws primarily on the literature and findings from the key informant interviews.

Ministry of Health

At the national level, key informants noted that there is a multitude of potential Māori health indicators and a variety of relevant criteria for indicator selection within and outside the health sector. National level Ministry of Health indicator sets are aligned to a range of core strategy documents and therefore key policy areas.

The Ministry of Health's *Statement of Intent* is the ministry's core accountability document. The 2005/2006 *Statement of Intent* (Ministry of Health 2005c) identified the enhancement of performance measures as a significant area of work required to enhance a robust indicator system, consistent with the ministry's responsibility for health system performance monitoring. The *Statement of Intent* identifies societal outcomes necessary for the achievement of healthy New Zealanders—better health, reduced inequalities, better participation and independence, and trust and security. A number of outcome indicators are aligned to each societal outcome. Key Māori health headline summary indicators include differences between Māori and non-Māori life expectancy, independent life expectancy, health expectancy, infant mortality, vaccine-preventable disease, and cervical and breast cancer mortality and staging; expenditure for Māori; and Māori health workforce development.

Māori population health profile indicators have been developed to provide an indication of the health of Māori in relation to key policy areas as outlined in the New Zealand Health Strategy. These indicators were not designed to reflect Māori concepts of health but, rather, with input from the Māori Health Directorate, for ethnic comparative purposes. The report *An Indication of New Zealanders' Health* (Public Health Intelligence 2004) regularly tracks progress on over seventy universal population health indicators and, for almost all indicators, data are analysed by Māori ethnic group. Indicators are divided into the following sets: socioeconomic determinants of health (e.g., unemployment and population with low income), risk factors (e.g., dietary fat intake and alcohol consumption), protective factors (e.g., physical activity and vegetable and fruit consumption), health outcomes for whole-of-life (e.g., health expectancy and avoidable mortality) and key life-cycle stages (e.g., children five to fourteen years, unintentional injuries), and infectious disease outcomes (e.g., rheumatic fever and sexually transmitted diseases).

The Health and Independence Report (Ministry of Health 2003) provides information on progress towards implementing the New Zealand Health Strategy, drawing on data presented in the publication *An Indication of New Zealanders' Health*. The latter reports on indicators of overall health system achievement, including high-level outcome measures by ethnicity (e.g., life expectancy at birth, disability requiring assistance, independent life expectancy, avoidable hospitalisation and avoidable death) and indicators specific to certain diseases or risk factors by ethnicity. Māori-specific health indicators used in the report include Māori membership of DHB boards, formal partnerships between DHBs and Māori, number of Māori providers, Māori representation in the health workforce, Māori access to healthcare and expenditure on health services for Māori.

He Korowai Oranga (Ministry of Health 2002a) is the overarching strategic framework for Māori health and, following consultation with Māori, has been proposed by the ministry as the Māori health monitoring framework. The aim of the strategy is whānau ora (Māori families supported to achieve their maximum health and wellbeing). *He Korowai Oranga* identifies a range of measures of Māori health that include universal indicators (mortality, morbidity and disability), as well as broader indicators. The broader indicators are measures of socioeconomic status, environmental factors, participation in society (including te ao Māori (the Māori world)), a secure identity and control over one's destiny.

Using *He Korowai Oranga* as the monitoring framework, the Ministry of Health intends to develop a national Māori health indicator set to assess progress towards achieving the goal of whānau ora. Consultation with Māori was carried out from May to August 2004. A summary of submissions document was released in mid-2005.

There is a range of key health sector strategy documents with associated Māori health indicators, such as the Primary Health Care Strategy and *Reducing Inequalities in Health* (Ministry of Health 2002c). One-off reports are used to track progress in specific areas. As an example, the Ministry of Health's National Mental Health Strategy (Ministry of Health 1997) and the Mental Health Blueprint (Mental Health Commission 1998) led to the release in April 2002 of Te Puawaitanga (Ministry of Health 2002d), the Māori Mental Health National Strategic Framework. Five-year indicators associated with the framework are the percentage of Māori who access clinical and cultural support services, the active participation by Māori in mental health services planning and delivery, the percentage of Māori adult clients who have a choice of mainstream or kaupapa Māori community mental health services, and the percentage increase in the number of Māori mental health workers (including clinicians).

Some of the national indicator set data can be examined at regional or local levels. Obviously this would include health outcome data, derived regionally and locally, but also some data collected through national mechanisms. For example, national data for the indicator 'Tobacco smoking 15+ years', sourced from the New Zealand Health Survey 2002/2003 and the ACNielsen quarterly consumer surveys, can be examined by DHB region.

Māori participation

According to key informants there is limited Māori involvement in national level indicator set development and the extent of Māori involvement is inconsistent across indicator sets. Māori are often not involved as members of the project team formulating indicators, and where Māori are involved it may be through a Māori reference group or in another advisory capacity. A concern was raised that where Māori are 'minoritised' within an expert advisory group, the Māori perspective is a minority view and therefore there is limited capacity for debate. Some respondents acknowledged government agency efforts to consult with Māori through national and regional hui (meetings) and by the dissemination of discussion documents to Māori. Both of these mechanisms were considered to be useful, though limited in terms of gaining Māori input.

Internally, the Ministry of Health directorate with primary responsibility for the development of a given indicator set should ensure partnership relationships are developed with recognised Māori health experts. There was some indication from key informants that even minimal Māori input does not happen consistently. Within the ministry, input may come from the Māori Health Directorate or a Māori health advisor. External and independent Māori input should also be sought from Māori stakeholders. However, at times the opportunity for meaningful input is not provided. For example, documentation may be received with insufficient time allowed to provide genuine comment, or travel to consultation hui may be costly for those located in rural areas. There was a general concern that government agencies do not engage well with Māori to ensure meaningful participation in indicator development. Further, while Māori may be involved in the process of indicator development, decisions regarding the actual selection of Māori health indicators are made by non-Māori.

The most comprehensive recent consultation on Māori health indicators was on the discussion document *Developing a Monitoring Framework and Strategic Research Agenda for He Korowai Oranga* (Ministry of Health 2004b). The document was made available in hard copy and on Ministry of Health and Māori health websites. Five hundred letters were mailed to Māori health stakeholders inviting their feedback through written submission or hui participation. Three hundred submission booklets were mailed out and seven hui were held throughout the country (Hamilton, Gisborne, Palmerston North, Nelson, Christchurch, Auckland and Paihia). Hui participants included iwi representatives, Māori DHB managers, Māori health provider representatives, Māori health researchers and Māori individuals. Approximately 113 people participated in hui and thirteen written submissions were received. Hui commentaries were sent to all hui participants. A reference group was also established to provide expert advice, and membership included Māori researchers, policy makers, and community, iwi and disability representatives. As noted earlier, a summary of submissions document was released in mid-2005.

A number of themes relevant to indicator development at all levels (national, regional and local) were identified at the consultation hui. Generally, the need for ethnicity data collection across sectors to enable intersectoral information collection was emphasised, as was the importance of the collection of both quantitative and qualitative data. Consultation stressed the need to ensure that information is available to meet specific local and iwi needs and that a kaupapa Māori or Māori-centred approach to data is used, whereby Māori are located as the norm and therefore Māori concerns are prioritised as opposed to being an 'add on'.

There were concerns raised that the current data collected did not fit with information requirements and that selected indicators should reflect Māori priorities, with government and other stakeholder priorities secondary. The importance of the ongoing involvement of iwi, hapū (sub-tribe) and other Māori organisations in indicator development was highlighted. There was recognition that indicators that are able to monitor disparity and inequalities are important; however, there was a strong call for positive indicators. Both collective and individual measures were considered to be important. Importantly, the usefulness of monitoring information and its ability to influence decision-makers, such as DHBs, was considered to be critical.

Two distinct types of indicators were identified, mainstream indicators and indicators that reflect iwi, hapū and Māori priorities. Mainstream indicators were identified as those related to demographics, inequalities, socioeconomic factors and general health status, and included mortality and morbidity rates, health service utilisation, resourcing and service development. It was acknowledged that the development of robust Māori-specific indicators would require some effort. Potential areas for indicator development identified included wairua (aspects related to spirituality), te reo (Māori language), tikanga and kawa (Māori process), values, whakapapa knowledge (geneology) and marae participation (traditional Māori community centres). There was recognition that it may not be appropriate to measure all relevant Māori health indicators, such as wairua (spirituality).

Key specific areas for data collection that were identified related to:

- the health needs and unmet needs of whānau;
- whānau relationships; whānau knowledge as to health service options;
- whānau access to health care throughout the care continuum; and
- participation in Māori institutions and cultural activities; and the extent to which whānau are unable to access all basic necessities and are forced to choose (for example, between buying food and keeping warm).

Māori concepts of health

According to interviewees, currently used national level health indicator sets, while useful, do not reflect Māori values and concepts of health. Rather, the national indicator sets measure health in a narrow sense and relate mainly to disease status and risk factors, rather than health status. Interviewees were concerned at the lack of Māori-specific indicators that are able to capture health in Māori terms.

Use of information

According to the Ministry of Health, Māori health data are used to:

- monitor health status, the performance of DHBs and health services (utilisation, access, coverage, quality, responsiveness and cost), and health system responsiveness;
- inform policy and planning cycles;
- inform funding of service areas retained centrally;
- provide health information;
- identify risk and protective factors;
- identify disparities; and
- understand determinants and unmet need (Ministry of Health 2002b).

Participants in the Ministry of Health Monitoring Framework consultation process identified a range of uses for Māori health information. Alongside identifying Māori health status and needs, information would be used to inform prioritisation, planning, policy and guideline development, funding applications, resource allocation and best practice. Information would also be used to monitor contracts and performance, evaluate the success of interventions and services, and monitor the performance of the government and its agencies.

Interviewees indicated a range of uses of national Māori health data, consistent with those identified above. Two interviewees noted that Māori health data have been used to monitor disparities, and in some areas disparities data have motivated a shift in resources, the most obvious example being in the area of Māori provider development. It was acknowledged that without good disparities data it is difficult to motivate positive change, though having the data does not guarantee change.

There were concerns, however, that the Ministry of Health generates an extensive list of indicators and collects a huge amount of data. According to key informants, much of the data are not used. Further, while the New Zealand Public Health and Disability Act 2000 makes provision for Māori access to health sector information, in practice access varies widely.

District health boards

The Ministry of Health's formal monitoring systems require DHBs, for accountability purposes, to prepare a district strategic plan and a district annual plan. The district strategic plan outlines a DHB's medium- to long-term goals for population health: the district annual plan sets out shorter term objectives and the range of services to be funded or provided to meet those objectives. The district annual plan also contains indicators of DHB performance in key areas and DHB targets for each indicator (Ministry of Health 2005d).

The Ministry of Health's annually updated Crown Funding Agreements with DHBs set out a framework for accountability by which DHBs are required to regularly report against approximately thirty-six indicators (Ministry of Health 2005d). The measures are focused on areas DHBs are responsible for funding and are supplemented by a small selection of

risk-based indicators in developmental areas such as workforce, prioritisation and service coverage. The indicators are a mix of qualitative, output and outcome measures. A number of these indicators relate specifically to Māori and are concerned with:

- engagement with Māori in DHB decision making and strategies for Māori health gain;
- Māori health workforce and provider development;
- improving mainstream effectiveness for Māori;
- change over time (increase or decrease) in the percentage of DHB expenditure on Māori providers;
- progress towards implementing the Reducing Inequalities in Health Intervention Framework (Ministry of Health 2002c);
- participation by Māori in decision making within primary health; and
- progress towards improving Māori mental health.

Where available, health outcome data are examined by ethnicity, for example, in relation to child health, older people's health, oral health, diabetes, cardiovascular disease and cancer.

DHB performance monitoring in non-priority areas is informed by service utilisation data and health status data derived from mortality registers, health surveys and epidemiological studies, among other sources. While selected indicators are developed at the national level and are aligned to the New Zealand Health Strategy, some interviewees indicated that there is some limited opportunity for DHB input. It was noted by some interviewees that the indicators are mainly output and volume oriented, and enable comparisons between DHBs. Further, that clinical measures are focused on assessing DHB performance as a business measure, rather than health outcomes, and that there is a lack of indicators that are centred on Māori health needs specifically. It was also noted that any work on Māori-specific indicators tended to be driven by areas with specific responsibility for Māori health (e.g., Māori units within DHBs), as opposed to areas with responsibility for indicator development or monitoring generally.

The extent to which DHBs have given attention to Māori health indicators varies by DHB. One respondent indicated that the local DHB had done little if any work in this area, as its focus had been on general infrastructure and organisational development since its establishment, while another respondent gave examples of DHBs that had made some progress. One DHB interviewee provided a draft paper on Māori health indicators. The outlined indicators fell into the following categories: organisational indicators (rates of 'Did Not Attend' accuracy of ethnicity data recording, use of Māori Health Advisory Committee), cultural competence (Treaty training workshop attendance, recruitment policy prioritising the appointment of Māori staff to a representative level, cultural support service development), risk and protective factors (immunisation rates, implementation of prevention programs, Māori enrolments in PHOs), and health outcome measures (acute psychiatric admission rates, suicide and suicide attempt incidence reduction, development of identifiable Māori psychiatric in-patient services, acute admissions for asthma) (Koea 2004). A concern was raised that, while some DHBs were interested in developing Māori-

specific indicators, they lacked capacity in this area. Respondents indicated that monitoring by DHBs was a huge and resource-intensive area of activity, but that little if any investment had been directed towards developing distinctive indicators for Māori and the concept of Māori-specific indicators was relatively new.

Overall it is apparent that, since the establishment of DHBs, efforts have focused on infrastructure development, and while there is recognition that much work is required in the area of indicator development (including indicators relevant to Māori), work has yet to be clearly scoped.

Māori participation and Māori concepts of health

Interviewee responses indicated that generally there is a lack of external Māori input into indicator development. Any advice or Māori input is sought from internal sources, such as the office of the General Manager Māori. According to respondents, current indicators are not informed by Māori concepts of health.

Use of information

Generally respondents agreed that data was used for accountability purposes, and some respondents noted that information informed planning. However, others were concerned that despite a lot of Māori health data being collected, the data are not being utilised to inform health policy development or health service planning, purchasing and decision making. Further, within hospitals, at the department level data are not linked to departmental performance monitoring or used to focus day-to-day activities.

Auckland Regional Public Health

Auckland Regional Public Health, which provides public health services in the Auckland region, has developed a set of Māori public health indicators, which was released in mid-2005 (Auckland Regional Public Health Service 2005).

Māori participation

An initial consultation was carried out to seek Māori views on whether the organisation should carry out the project, and what monitoring framework should be used; following developmental work, a marae-based feedback hui was held. A Māori tikanga advisory group, Ngā Pou Āwhina, was established and the project team comprised Māori and non-Māori members.

Māori concepts of health

Following consultation with Māori, the Māori health promotion schema Te Pae Mahutonga was selected as the monitoring framework. The schema is concerned with the creation of a climate within which Māori potential can be realised, and is broad enough to take account of consultation feedback that gave some priority to the incorporation of wide-ranging

social and environmental indicators. The schema, which is based on Māori concepts of health, identifies factors that are fundamental to the achievement of good health for Māori—leadership, autonomy, access to the Māori world, environmental protection, healthy lifestyles and participation in society. The challenge in using Te Pae Mahutonga is that it is very broad in scope and therefore difficult to populate with indicators. The schema is also wellness-focused, and therefore morbidity and mortality indicators are not easily accommodated within the framework. To address this latter point, an additional component has been added to the framework—Mauiui (illness). Alongside universal indicators (e.g., demographic, risk factor, protective factor, health outcome), determinants indicators (e.g., cultural, political and environmental) are incorporated within the framework.

Primary health organisations and Māori health providers

According to interviewees, PHOs, since their establishment, have focused on infrastructure development, and it is only now that serious attention has turned to indicator development.

Generally, PHOs and Māori providers use universal health indicators at the primary health care level. Indicators are set at the national level and align with national strategies, in particular the Primary Health Care Strategy and guideline documents (e.g., diabetes guidelines). The Ministry of Health has developed a monitoring framework for the implementation and outcomes of the Primary Health Care Strategy, and a major component of this framework has been developed to monitor PHOs. DHBs have contracts with PHOs and Māori providers for service delivery. Providers are generally required to demonstrate specific volume-related outputs using universal indicators. Indicators may be linked to specific funding streams such as Diabetes ‘Get Checked’ or ‘Services to Improve Access’ funding. The six main features of PHO monitoring are:

- service provision (number of services by client age, deprivation level, ethnicity, type of practitioner seen, and fees charged and paid);
- ambulatory sensitive hospitalisations;
- specific PHO programs provided;
- enrolment data;
- clinical performance; and
- referred services.

Universal clinical measures (blood pressures, referrals to outpatients, glycosylated haemoglobin levels, hospital admissions) and service utilisation indicators (e.g., number of consultations and repeat consultations) are routinely used. DHBs are in the process of developing and improving indicators for use by PHOs.

A Māori provider raised the concern that indicators are developed at the national level and providers are compelled to collect the data. The provider also indicated that his or her organisation had recently challenged a number of the indicators, and that as a result there had been some consultation, which was a new development. However, generally it was

considered that providers are not engaged or given opportunities to negotiate indicators. Respondents were concerned that indicators are based on outputs rather than outcomes (such as the number of client contacts, how many services are delivered), and that work is required to understand how to measure outcomes. It was noted that intermediary indicators are regularly used, such as cholesterol levels or improved functioning. It was also noted by interviewees that some outcomes are intangible and therefore difficult to measure.

Concern was raised that indicators at the primary care level are not sufficiently broad, as Māori health is not only concerned with physical health but also with mental and emotional wellbeing, access to financial resources, employment, and achieving control and balance in life. However, a Māori provider indicated that his or her organisation collected broader data, such as socioeconomic indicators, the number of staff who speak Māori and the number of women who make their own containers for the placenta for burial, but that this information is not formally reported and is used for organisational planning purposes. There was concern from a Māori provider that some indicators do not align with a Māori provider approach. For example, Māori women's participation in parenting and pregnancy courses was used as a measure of service effectiveness, however Māori women preferred information delivered in their homes with whānau present. Also, reporting based on 'head counts' of patient contacts is inappropriate for rural Māori providers (where whānau are spread across a wide geographical area) unless rurality is taken into account when considering the data. Interviewees indicated the need to develop Māori-specific indicators that can be embedded at the community level, and reflect the context in which the service is provided, for Māori primary care provision.

Providers were concerned at the substantial costs for indicator-related development and training, and data collection and analysis. While larger PHOs have capacity for data analysis, this is not the case for smaller providers and, in particular, Māori providers. The cost of compliance for Māori providers was highlighted at the Ministry of Health Monitoring Framework consultations as an issue of concern. In particular, concerns were raised about potential for increased monitoring leading to increased compliance costs, while not improving the information available to inform Māori provider activities.

Māori participation

Generally respondents indicated a lack of Māori input into primary health care indicators. A Māori provider noted that Māori are invited to Ministry of Health consultation hui, but that generally the consultations are not geographically accessible for those in rural areas. According to the respondent, this leads to the same small group of Māori, usually managers or doctors, normally attending. The provider also noted that relatively little time is spent on the development of the organisation's own indicators, as it is a time-consuming process and the provider is constrained by limited resources and lack of appropriate skills. The provider gave an example whereby a Māori-centred health promotion indicator set, which the service had developed, was presented to the funder and rejected. The provider considered that fundamental cultural difference in concepts of health and health promotion led to non-acceptance of the proposed monitoring framework and indicator set.

Māori concepts of health

Interviewees agreed that current primary health care indicators do not reflect Māori concepts of health.

Use of information

Respondents indicated that data are used to meet contractual reporting requirements, to report to the community and to inform planning, service development and practice. A general concern was raised that Māori health providers and iwi have difficulty in accessing Māori health data and that, when it is available, it is not in a form that is easily interpreted.

A PHO respondent indicated that data are collected by general practitioners on practice management systems, and selected data are analysed by the PHO for feedback to general practitioners. Data collection has enabled benchmarking and comparisons with practices that have similar client demographics. According to the respondent, ethnic data collection has enabled the identification of gaps in optimum care and health outcomes for Māori in some clinics, and enables the PHO to target these services to facilitate improved performance.

Research institutions

Winiata (1988), recognising a Māori concern to develop indicators that are able to measure the vitality of Māori collectives, proposed indicators of hapū (sub-tribe) and iwi (tribal) wellbeing, which measured access to tribal resources. Te Ngāhuru (Durie *et al.* 2002), a Māori outcomes schema, draws on the work of Te Hoe Nuku Roa (Durie *et al.* 1995; Te Hoe Nuku Roa Research Team 1999), a Massey University longitudinal study of Māori households that aims to provide an empirical base for the planning of Māori policy, programs and services. Te Ngāhuru identifies Māori development outcome categories (secure cultural identity, collective Māori synergies, Māori cultural and intellectual resources, the Māori estate) and associated indicators that are intended to assist in gauging progress towards Māori development goals. Ten outcome goals are identified: positive participation in society as Māori; positive participation in Māori society; vibrant Māori communities; enhanced whānau (extended family) capacities; Māori autonomy; Māori language usage in multiple domains; practise of Māori culture, knowledge and values; regenerated Māori land base; guaranteed Māori access to clean and healthy environments; and resource sustainability and accessibility. While recognising the importance of a range of generic indicators in measuring Māori development, only Māori-specific measures are identified in the report.

Given the Māori view that Māori health indicators should be broad, Te Ngāhuru indicators may usefully complement universal health indicators. The types of indicators identified in Te Ngāhuru are, for example, Māori language ability, marae (Māori community centre) attendance, numbers of whānau trusts, the number of Māori service providers, the number of children attending Māori immersion schools and the valuation of Māori land holdings.

Indicators Compendium

A compendium of Māori health indicators is attached, which draws together indicators currently used by key health sector structures for which regular data sources are available (Attachment 1). The compendium uses a traditional typology based on that used in the government population health report *An Indication of New Zealanders' Health* (Public Health Intelligence 2004) but expanded to include demographic, determinants and health service indicators. The compendium classifies indicators into the following six domains: demographic (characteristics of the population), determinants (which recognise that there are broad social, economic, cultural, environmental and political determinants of health that structure health status inequalities), risk factors (factors that predispose to poor health outcomes), protective factors (factors that predispose to positive health outcomes), health outcomes (health status outcomes are broken down into either whole-of-life or age-specific outcomes) and health services (which relates to health service coverage and therefore issues of access, use, need and the responsiveness of the health system to Māori). The list of indicators is not intended to be definitive, but rather to provide an indication of the range of measures that are currently being used to gauge the state of Māori health.

Māori Health Indicator Issues

Interviewees agreed that universal health indicators are relevant to Māori and are of value; however, it was emphasised that these indicators alone are insufficient to capture the health and wellness of Māori. The central criticisms are that universal indicators are illness- rather than wellbeing-centred, are primarily developed to support national and regional rather than local level planning and action, and have a narrow focus (on physical and sometimes mental health only), which is inconsistent with expansive Māori concepts of health. According to participants, indicator selection is often driven by information collection systems. That is, indicators are selected in areas where it is relatively easy to collect data, such as service utilisation, hospitalisations and mortality. It is also not sufficient to focus measures on volumes and outputs. As an example of an alternative measure, tracking patient journeys enables measurement of the quality of care, appropriateness of referrals and provider processes for patient management.

Interviewees raised the concern of respondent burden and the extensive compliance costs of reporting for service providers, and in particular for small Māori providers. A linked concern was that, despite extensive data collection requirements, much of the data collected are not used and are not accessible to Māori. Realisation of the potential contribution of information systems to improved health outcomes is reliant upon a feedback loop, where data received from the provider and community level is fed back in a meaningful and understandable form as a basis for informed decision making, service development and practice. A more general issue raised was the importance of quality ethnicity data collection across sectors.

One participant was concerned that, although there is a place for indicators, as summary measures they should not be relied on entirely as they are not able to provide a comprehensive picture of the state of health. That is, indicators are high-level summary measures and a sole reliance on indicators leads to a loss of data. A proposed alternative is a balance between the use of indicators and the collection of rich micro datasets, which allows for the extraction of specific information that may be required at different times and for different purposes; this approach is appropriate in the context of well-developed data management technologies.

Both regional and local level health sector stakeholders expressed concern that health indicator development is 'top-down' and not well attuned to the local context and local concerns. Further, there are inadequate opportunities for Māori to lead and have significant input into Māori health indicator development at all levels. Indicator systems should be geared towards community visions for health and wellbeing, enabling providers to meet community needs, and towards the ability of communities to respond to measures. Therefore, measurement systems must be relevant and this relies on input from all levels

and in particular from Māori communities and Māori providers. The use of non-Māori defined boundaries (e.g., DHB regions) for local and regional data analysis, as opposed to Māori boundaries (e.g., iwi boundaries), was identified in interviews as problematic.

Areas for further work include the development of more sophisticated Māori health indicators that:

- are consistent with Māori concepts of health;
- are positive in nature;
- relate to social, economic, cultural, environmental and political determinants of health (including institutional racism); and
- are able to track patient journeys.

Indicators that are able to gauge inequalities, as well as indicators that do not rely upon comparisons with non-Māori, are required. Given that the Māori health sector is in the developmental phase, intermediate indicators that track provider characteristics (including the Māori competency of mainstream providers) and Māori health workforce development will remain important. Measures that can be linked to conditions that may be prevented through primary health care will also be necessary. For Māori, indicators should reflect not only individual but also collective measures of Māori health. The development of sophisticated indicators is, however, a time- and resource-intensive process and indicator selection needs to take account of the capacity of data collection and management systems.

Concluding Comments

There is currently no single agreed Māori health monitoring framework or indicator set used in the sector to gauge the state of Māori health. Instead, a range of independent monitoring frameworks and indicator sets are in place, largely determined in a ‘top-down’ way and with limited Māori input. There is, however, increasing recognition of the need to develop a range of Māori health indicators that are better able to capture the health status of Māori in Māori terms and are relevant to Māori priorities and local contexts.

There are four main issues that have arisen from this paper, which reinforce understandings of Māori health indicators. First, there is a wealth of Māori health data being generated using universal indicators. However, it is apparent that the data are not being used consistently as a basis for evidence-based decision making at all levels and the emphasis is often on data collection and use for accountability purposes. Further, if data were to be examined at regional or local levels and presented in straightforward ways, this would enable knowledge transfer to Māori providers, iwi, Māori communities and other Māori health stakeholders to inform local planning and decision making.

Second, Māori participation and input into Māori health indicator selection and development is very limited, and this constrains the sector’s capacity to develop meaningful indicators that are locally relevant and match iwi and Māori community priorities. While there has been progress in some areas, more attention to building and strengthening processes that facilitate consistent and meaningful Māori input into indicator selection and development is required.

Third, Māori health monitoring frameworks should draw on known Māori frameworks and be populated with a mix of universal and Māori-specific indicators in order to ensure that indicator sets adequately reflect Māori understandings of health. Māori-specific indicators are intended to complement universal measures (including measures of disparities) and will be important in providing a picture of the state of Māori health that is relevant to Māori, and can provide a comprehensive empirical base for the planning and delivery of Māori health services. While there has been some work towards the development of Māori-specific indicators, it is preliminary and these types of measures are not yet in use in any consistent way to measure the state of Māori health.

Fourth, accurate ethnicity data collection across sectors is important if broad indicators are to be used to gauge the state of Māori health in Māori terms.

As a final comment, when considering Māori health indicators within the New Zealand context, it is apparent that the current indicator sets are essentially government-driven measures that are intended to assess progress towards State-defined objectives for Māori health. Those indicator sets are not well aligned to Māori health aspirations and concepts of health. Māori leadership and participation will be required to drive the development of robust Māori health indicator sets that not only enable monitoring of the government's progress towards addressing inequalities and Māori health needs, but also serve as a basis for Māori planning for healthy Māori futures.

References

- Ajwani, S., Blakely, T., Robson, B., Tobias, M. & Bonne, M. 2003, *Decades of Disparity Ethnic Mortality Trends in New Zealand 1980–1999*, Ministry of Health, Wellington.
- Ashton, T. 2005, 'Recent Developments in the Funding and Organisation of the New Zealand Health System', *Australia and New Zealand Health Policy*, vol. 2, no. 9, pp. 1–8. Accessed on 26 June 2006 at: <<http://www.anzhealthpolicy.com/content/2/1/9>>.
- Auckland Regional Public Health Service 2005, *He Purongo Hauora o nga Iwi Maori o te Rohe o Tamaki Makaurau*, Auckland Regional Public Health Service, Auckland.
- Department of Labour 2005, *Trends in Maori Labour Market Outcomes, A Report Prepared for Hui Taumata 2005*. Accessed on 2 August 2005 at: <<http://www.huitaumata.Maori.nz/pdf/labour.pdf>>.
- Durie, M. 1994, *Population Health Gains for Maori: A Paper Prepared for the Population Health Services of the Ministry of Health*, Massey University, Palmerston North.
- Durie, M. 1998, *Whaiora: Maori Health Development*, Oxford University Press, Auckland.
- Durie, M. H., Black, T. E., Christensen, I. S., Durie, A. E., Taiapa, J., Potaka, U. K. & Fitzgerald, E. D. 1995, 'Te Hoe Nuku Roa Framework, A Maori Identity Measure', *Journal of the Polynesian Society*, vol. 104, no. 4, pp. 461–70.
- Durie, M., Fitzgerald, E., Kingi, T., McKinley, S. & Stevenson, B. 2002, *Maori Specific Outcomes and Indicators*, Massey University, Wellington.
- Gravitas Research & Strategy Limited 2005, *Quality of Life in New Zealand's Largest Cities: Residents Survey*, Ministry of Social Development, Auckland.
- Henare, M. 1988, 'Nga Tikanga Me nga Ritenga o te Ao Maori: Standards and foundations of Maori society', *The April Report*, Royal Commission on Social Policy, Wellington, vol. III, pp. 24–232.
- King, A. 2000, *The New Zealand Health Strategy*, Ministry of Health, Wellington.
- King, A. 2001, *The Primary Health Care Strategy*, Ministry of Health, Wellington.
- Koea, J. 2004, *Clinical Indicators for Maori Health Gain: A Discussion Document*, Auckland District Health Board, Auckland.
- Kressin, N. & Petersen, L. 2001, 'Racial Differences in the Use of Invasive Cardiovascular Procedures: Review of the literature and prescription for future research', *Annals of Internal Medicine*, vol. 135, no. 5, pp. 352–66.

Mental Health Commission 1998, *Blueprint for Mental Health Services in New Zealand: How Things Need to Be*, Mental Health Commission, Wellington.

Ministry of Education 2005, *Maori and Tertiary Education: A Picture of the Trends*, report prepared for Hui Taumata 2005. Accessed on 29 July 2005 at: <<http://www.huitaumata.Maori.nz/pdf/tertiary.pdf>>.

Ministry of Health 1997, *Moving Forward: The National Mental Health Plan for More and Better Services*, Ministry of Health, Wellington.

Ministry of Health 2002a, *He Korowai Oranga Maori Health Strategy*, Ministry of Health, Wellington.

Ministry of Health 2002b, *The New Zealand Health Monitor: A 10-year Cycle of Health-Related Surveys*, Ministry of Health, Wellington.

Ministry of Health 2002c, *Reducing Inequalities in Health*, Ministry of Health, Wellington.

Ministry of Health 2002d, *Tē Puawaitanga Maori Mental Health National Strategic Framework*, Ministry of Health, Wellington.

Ministry of Health 2003, *Health and Independence Report: Director-General's Annual Report on the State of Public Health*, Ministry of Health, Wellington.

Ministry of Health 2004a, *Ethnicity Data Protocols for the Health and Disability Sector*, Ministry of Health, Wellington.

Ministry of Health 2004b, *Developing a Monitoring Framework and Strategic Research Agenda for He Korowai Oranga: Discussion Document*, Ministry of Health, Wellington.

Ministry of Health 2005a, *Public Health Intelligence*. Accessed on 29 July 2005 at: <<http://www.moh.govt.nz/phi>>.

Ministry of Health 2005b, *Established Primary Health Organisations*. Accessed on 25 June 2006 at: <<http://www.moh.govt.nz/moh.nsf/indexmh/contact-us-pho>>.

Ministry of Health 2005c, *Statement of Intent 2005/06*, Ministry of Health, Wellington.

Ministry of Health 2005d, *Final Indicators of DHB Performance 2005/06*, Ministry of Health, Wellington.

Ministry of Social Development 2005, *The Social Report, Te Purongo Oranga Tangata 2005*, Ministry of Social Development, Wellington.

NZHIS (New Zealand Health Information Service) 2005, *About NZHIS*. Accessed on 2 August 2005 at: <<http://www.nzhis.govt.nz>>.

Pere, R. 1984, *Te Oranga o te Whanau: The Health of the Family*, paper presented at Hui Whakaoranga, Hoani Waititi Marae, Department of Health, 19–22 March.

Pomare, E., Keefe-Ormsby, V., Ormsby, C., Pearce, N., Reid, P., Robson, B. & Watene-Haydon, N. 1995, *Hauora: Maori Standards of Health III—A Study of the Years 1970–1991*, Te Ropu Rangahau Hauora a Eru Pomare/ Eru Pomare *Maori Health Research Centre*, Wellington.

- Public Health Intelligence 2004, *An Indication of New Zealanders' Health 2004*, Ministry of Health, Wellington.
- Ratima, M. 2001, *Kia Uuruuru Mai a Hauora: Being Healthy Being Maori, Conceptualising Maori Health Promotion*, Department of Public Health, University of Otago, Dunedin.
- Robson, B. & Reid, P. 2001, *Ethnicity Matters: Review of the Measurement of Ethnicity in Official Statistics—Maori Perspectives Paper for Consultation*, Te Roopu Ranagahau Hauora a Eru Pomare for Statistics New Zealand, Wellington.
- Statistics New Zealand 2003, *2001 Census Snapshot 4*, Statistics New Zealand, Wellington.
- Te Hoe Nuku Roa Research Team 1999, *Te Hoe Nuku Roa Source Document: Baseline History*, Massey University, Palmerston North.
- Te Puni Kokiri 1993, *Te Ara Ahu Whakamua: Strategic Direction for Maori Health—A Discussion Document*, Te Puni Kokiri, Wellington.
- Te Puni Kokiri 2001, *Survey of the Health of the Maori Language in 2001*. Accessed on 29 July 2005 at: <http://www.tpk.govt.nz/publications/docs/survey_health_Maori_lang01.pdf>.
- WAVE Advisory Board to Director-General of Health 2001, *From Strategy to Reality—The WAVE Project; Kia hopu te ngaru*. Accessed on 26 June 2006 at: <[http://www.moh.govt.nz/moh.nsf/0/F34F8959738E992CCC256AF400177998/\\$File/TheWAVEreport.pdf](http://www.moh.govt.nz/moh.nsf/0/F34F8959738E992CCC256AF400177998/$File/TheWAVEreport.pdf)>.
- Tukuitonga, C. F. 2002, 'Ethnic and Gender Differences in the Use of Coronary Artery Revascularisation Procedures in New Zealand', *New Zealand Medical Journal*, vol. 115, pp. 179–82.
- Winiata, W. 1988, 'Hapu and Iwi Resources and their Quantification', *The April Report*, Royal Commission on Social Policy, Wellington, vol. III, pp. 791–803.

Attachment 1: Indicators Compendium

Indicator Sets	Indicator Descriptors	Source
Demographic		
	Age distribution, per cent in defined age groups	Census
	Live births, number	Statistics New Zealand
	Iwi (tribal) affiliations, numbers	Census, iwi registers, Tūhono
	Geographical distribution by region, per cent	Census
	Māori population, numbers and per cent of total population	Census
	Usually resident in rural/urban area, per cent	Census
Determinants		
Social	Household crowding (need one or more extra bedrooms), per cent	Census
	School completion (6th Form Certificate or higher), per cent	Ministry of Education
	Unemployment, per cent	Household Labour Force Survey
	Teenage pregnancy 10–19 years, rate per 1000	Statistics New Zealand
Economic	Average annual personal income, dollars	Household Economic Survey
	Distribution by occupational class 15–64 years, per cent	Census
	Receipt of government benefit, per cent	Household Economic Survey
	Owner occupied households, per cent	Census
Cultural	Active marae, iwi, hapū, and cultural participation	Te Hoe Nuku Roa
	Enrolments in Kura Kaupapa, per cent	Ministry of Education
	Enrolments in Kōhanga Reo and Kura Kaupapa, per cent	Ministry of Education
	Māori speakers of Māori language	Census
Political	Enrolments on iwi registers, number	Iwi registers, Tūhono
	Enrolments on Māori electoral roll, per cent	Electoral Commission
	Māori members of Parliament, per cent of total/number	Parliament
	Māori voter turn out at general election, per cent	Electoral Commission
Risk Factors		
	Bullied at school 13–17 years, per cent	Youth Survey Data
	Child abuse CYFS notifications, rate per 100,000	Ministry of Social Development
	Obese 5–14 years and 15+ years, per cent	CNS, NZHS
	Overweight 5–14 and 15+ years, per cent	CNS, NZHS
	People who do not drink 15+ years, per cent	NZHS
	Potentially hazardous drinking pattern 15+ years, per cent	NZHS
	Regular marijuana smoking 15+ years, per cent	NZHS
	Suicide ideation	Mental Health and Well Being Survey
	Tobacco smoking 15+ years, per cent	NZHS
	Tobacco smoking at least monthly 14–15 years, per cent	ASH

Indicator Sets	Indicator Descriptors	Source
Protective Factors		
	Cervical screening coverage rate, per cent	NCSP
	Breast screening coverage rate, per cent	BSA
	Māori infant immunisation coverage rate, per cent	NZHS, Plunket, NIR
	Medical insurance coverage, per cent	NZHS
	Three or more servings of vegetables and two or more servings of fruit per day 5–14 years, per cent	CNS
	Three or more servings of vegetables and two or more servings of fruit per day 15+ years, per cent	NZHS
	Physically active 5–17 years, per cent	SPARC
	Physically active 18+ years, per cent	SPARC
	Visited dentist in the previous year 15+ years, per cent	NZHS
	Exclusive and full breastfeeding at 3 and 6 months, per cent	Plunket
Health Outcomes		
Whole of life	Acute psychiatric admissions, rate per 100,000	NZHIS
	Age-adjusted avoidable hospitalisation, rate per 100,000	NZHIS
	Age-adjusted avoidable mortality, rate per 100,000	NZHIS
	DALE (disability adjusted life expectancy at birth)	NZHS, NZHDS
	Self-related health	NZHS, Quality of Life Survey
	SF-36—MCS (short form 36 mental component score)	Mental Health and Well Being Survey
	Disability prevalence (adjusted for age and severity)	NZHDS
	Diabetes complications lower limb amputations and renal failure, rate per 100,000	NZHIS
	Disability requiring assistance, per cent	NZHDS
	Hepatitis B notifications, rate per 100,000	ESR
	HIV diagnosis, rate per 100,000	Ministry of Health
	Infectious disease-related mortality, rate per 100,000	NZHIS
	Life expectancy at birth, years	Statistics New Zealand
	Meningococcal disease notifications, rate per 100,000	ESR
	Rheumatic fever notifications, rate per 100,000	ESR
	Tuberculosis notifications, rate per 100,000	ESR
	Assault and homicide hospitalisations, rate per 100,000	NZHIS
	Assault and homicide mortality, rate per 100,000	NZHIS
	Intentional self-harm hospitalisations, rate per 100,000	NZHIS
	Suicide mortality, rate per 100,000	NZHIS
	Prevalence of depression and anxiety disorder, per cent	Mental Health and Well Being Survey
Infants (0–4 years)	Burn-related hospitalisations, rate per 100,000	NZHIS
	Burn-related mortality, rate per 100,000	NZHIS
	Drowning, rate per 100,000	NZHIS
	Fall-related hospitalisations, rate per 100,000	NZHIS
	Fall-related mortality, rate per 100,000	NZHIS
	Low birth weight, rate per 1000	NZHIS

Indicator Sets	Indicator Descriptors	Source
Infants (0–4 years)	Poisoning-related hospitalisations, rate per 100,000	NZHIS
	Poisoning-related mortality, rate per 100,000	NZHIS
	Sudden infant death syndrome mortality, rate per 100,000	NZHIS
	Congenital abnormalities, rate per 100,000	NZHIS
Children (5–14 years)	All injury-related hospitalisations, rate per 100,000	NZHIS
	All injury-related mortality, rate per 100,000	NZHIS
	Burn-related hospitalisations, rate per 100,000	NZHIS
	Burn-related mortality, rate per 100,000	NZHIS
	Drowning, rate per 100,000	NZHIS
	Fall-related hospitalisations, mortality, rate per 100,000	NZHIS
	Fall-related mortality, rate per 100,000	NZHIS
	Hearing failure at school entry, per cent	National Audiology Centre
	Missing or filled teeth at Year 8, mean number	School Dental Services
	Asthma hospitalisations, rate per 100,000	NZHIS
Youth (15–24 years)	All injury-related hospitalisation, mortality, rate per 100,000	NZHIS
	All injury-related mortality, rate per 100,000	NZHIS
	Asthma hospitalisations, rate per 100,000	NZHIS
	Intentional self-harm, rate per 100,000	NZHIS
	Road traffic injury hospitalisation, rate per 100,000	NZHIS
	Road traffic injury mortality, rate per 100,000	NZHIS
	Suicide mortality, rate per 100,000	NZHIS
	Diabetes, per cent	NZHS
	Serious mental disorders, per cent	NZHS
	Intentional self-harm hospitalisation, rate per 100,000	NZHIS
Adults (25–64 years)	All injury-related hospitalisation, rate per 100,000	NZHIS
	All injury-related mortality, rate per 100,000	NZHIS
	Asthma hospitalisations, rate per 100,000	NZHIS
	Asthma, per cent	NZHS
	Cardiovascular disease hospitalisations, rate per 100,000	NZHIS
	Cardiovascular disease mortality, rate per 100,000	NZHIS
	Diabetes, per cent	NZHIS
	Heart failure hospitalisations, rate per 100,000	NZHIS
	Heart failure mortality, rate per 100,000	NZHIS
	Ischaemic heart disease hospitalisations, rate per 100,000	NZHIS
	Ischaemic heart disease mortality, rate per 100,000	NZHIS
	Male and female cancer mortality for all cancers, rate per 100,000	NZHIS
	Male and female cancer registrations for all cancers, rate per 100,000	NZHIS
	Male and female cancer survival for all cancers, rate per 100,000	NZHIS
	Psychiatric hospital first admission, rate per 100,000	NZHIS
	Rheumatic heart disease hospitalisations, rate per 100,000	NZHIS
	Rheumatic heart disease mortality, rate per 100,000	NZHIS
	Serious mental disorders, per cent	NZHS

Indicator Sets	Indicator Descriptors	Source
Adults (25–64 years)	Stroke hospitalisations, rate per 100,000	NZHIS
	Stroke mortality, rate per 100,000	NZHIS
Older people (65+ years)	All injury hospitalisation, mortality, rate per 100,000	NZHIS
	All injury mortality, rate per 100,000	NZHIS
	Cardiovascular disease hospitalisations, rate per 100,000	NZHIS
	Cardiovascular disease mortality, rate per 100,000	NZHIS
	Diabetes, per cent	NZHIS
	Fall-related hospitalisation, mortality, rate per 100,000	NZHIS
	Fall-related mortality, rate per 100,000	NZHIS
	Heart failure hospitalisations, rate per 100,000	NZHIS
	Heart failure mortality, rate per 100,000	NZHIS
	Influenza hospitalisations, rate per 100,000	NZHIS
	Influenza mortality, rate per 100,000	NZHIS
	Ischaemic heart disease hospitalisations, rate per 100,000	NZHIS
	Ischaemic heart disease mortality, rate per 100,000	NZHIS
	Male and female cancer mortality for all cancers, rate per 100,000	NZHIS
	Male and female cancer registrations for all cancers, rate per 100,000	NZHIS
	Male and female cancer survival for all cancers, rate per 100,000	NZHIS
	Pneumonia hospitalisations, rate per 100,000	NZHIS
	Pneumonia mortality, rate per 100,000	NZHIS
	Rheumatic heart disease hospitalisations, rate per 100,000	NZHIS
	Rheumatic heart disease mortality, rate per 100,000	NZHIS
Serious mental disorders, per cent	NZHIS	
Stroke hospitalisations, rate per 100,000	NZHIS	
Stroke mortality, rate per 100,000	NZHIS	
Health Service		
Health service coverage	DNA (Did not attend) rates, per cent	Health service reporting
	Eligible mothers participating in antenatal checks, per cent	NBRS, Health service reporting
	Outpatients visits, number	Health service reporting
	Patient contacts, number	Health service reporting
	People with certainty who have been waiting for more than 6 months for a coronary artery bypass graft, number	NBRS
	Unmet need for GP in the past 12 months 15+ years, per cent	NZHS
	Seen a GP in the last 12 months 15+ years, per cent	NZHS
	Seen a Māori health provider in the last 12 months 15+ years, per cent	NZHS
	Tertiary medical and surgical services utilisation, per cent	Health service reporting
	Waiting time to radiotherapy, per centage by period (e.g.>4 weeks, 4–8 weeks, 8–12 weeks, >12 weeks)	Radiotherapy units reporting
	Blood pressure checks, per cent of enrolments	Health service reporting
	Health interventions delivered, number	Health service reporting
	Hepatitis B blood tests in previous 12 months of those on diabetes register, number	Health service reporting,

Indicator Sets	Indicator Descriptors	Source
Health service coverage	PHO service provider registries in place (e.g. smokers, hypertension, diabetics)	PHO Reporting
	Māori-specific programmes and service components implemented, number	Health service reporting
Health system	Accuracy of ethnicity data	Research reports
	Māori registered with a PHO, per cent	Health service reporting
	Change over time in per cent of DHB total expenditure on services by Māori providers, per cent	DHB Index
	Proportion of vote health spent on Māori health, per cent	Ministry of Health
	DHB management and clinical positions held by Māori, per cent	DHB Index
	DHB meetings with Treaty Relationship Partner(s), frequency	DHB Index
	Māori-specific best practice guidelines in place, number	Health service reporting
	Māori cultural competency training for staff, number	Health Organisation
	Māori health workforce participation, per cent	HWAC, research reports
	Māori members of DHB Boards, number	DHB reporting
	Māori providers, numbers	DHB reporting
	Māori specific components of mainstream services, numbers	DHB reporting
	Mechanisms in place for iwi/Māori participation in DHB planning and decision making processes, description	DHB reporting
	Patient satisfaction with overall health care, per cent	NZHS, DHB patient surveys
	Planning to develop Māori workforce and the capacity of providers evident in District Strategic Plan and District Annual Plans	DHB reporting
	Avoidable mortality, rate per 100,000	NZHS
	Life expectancy at birth, number	Statistics New Zealand
Ambulatory-sensitive hospitalisations, rate per 100,000	NZHIS	

Data collections held by NZHIS

- National Health Index (NHI)
- Medical Warnings System (MWS)
- National Minimum Dataset (Hospital Events) (NMDS)
- New Zealand Cancer Registry (NZCR)
- Mental Health Information National Collection (MHINC)
- Mental Health Data Warehouse (MHDW)
- National Booking Reporting System (NBRS)
- National Booking Reporting System Data Warehouse (NBRS DW)
- Maternity and Newborn Information System (MNIS)
- Pharmaceutical Information Database (Pharmhouse)
- Laboratory Claims Data Warehouse (Labs)
- Immunisation Data Warehouse (Imms)
- General Medical Subsidy Datamart (GMS)
- Hepatitis B Screening Programme (Hep B)
- Mortality Collection
- Health Workforce Collection