

**Mana Whakamārama - Equal Explanatory Power:
Māori and non-Māori sample size
in national health surveys**

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Whiringa-ä-Rangi, 2002

TĪMATANGA - INTRODUCTION

“The Treaty of Waitangi was signed to protect the interests of Māori,
and it is certainly not in the interests of Māori
to be disadvantaged in any measure of social or economic wellbeing.”
(Te Puni Kōkiri 1998)

The purpose of this paper is to discuss how Māori and non-Māori sample sizes in national surveys can indirectly contribute to the reduction, maintenance or even widening of inequalities in health. The paper was commissioned by Anne Duncan, Public Health Intelligence group of the Ministry of Health, as a result of debate about the sample frame for the New Zealand Health Survey 2002. The issues raised in this paper arise out of the experience of the Eru Pōmare Māori Health Research Centre in researching ethnic disparities in health.¹

The paper promotes the principle of ‘equal explanatory power’ – i.e. producing information for Māori health development to at least the same depth and breadth as that obtained for non-Māori health development. Good governance in an evidence-based policy environment compels us to ensure that data produced by the Crown is at least as productive for Māori as it is for non-Māori. For health surveys, a central requirement is to obtain enough Māori and non-Māori participants to explore potential explanations for disparities and develop effective strategies to address them. The simplest method is to seek equal numbers of Māori and non-Māori responders. The vision of the New Zealand Health Monitor is that its surveys have sufficient statistical power to analyse Māori data at the same degree of differentiation as non-Māori data (MoH 2002b). Although the 2002/03 New Zealand Health Survey will not achieve equal explanatory power, it is timely to consider the implications of Māori and non-Māori sample size for future surveys.

The paper has four sections. The first section outlines the epidemiological rationale for equal explanatory power and its role in tackling inequalities and improving Māori health. The second section focuses on the New Zealand Health Monitor and argues for equal samples of Māori and non-Māori stratified by age, region and socioeconomic/deprivation variables. The third section discusses survey composition in the context of tangata whenua rights and Treaty obligations. Section four raises the need to address issues of ‘scientific colonialism’ which impede survey validity and productivity.

The prevention of social inequalities in health requires substantial attention, determination, creativity and the efforts of many. “E kore e mahana, he iti iti o te pūweru; kāore ra i te kākahu roroa, autō mai i raro i te whenua.”²

¹ Pōmare et al 1995; Te Rōpū Rangahau Hauora a Eru Pōmare 1997; 2000; Robson & Reid 2001; Harris et al 2002; Business Research Centre & Te Rōpū Rangahau Hauora a Eru Pōmare 1999.

² “There is no warmth, the garment is too small; when the garment is long and trails on the ground then indeed, there is warmth. A small war party will effect nothing, but a large party with many followers effects much.”

MANA WHAKAMĀRAMA – EQUAL EXPLANATORY POWER

The principle of ‘equal explanatory power’ recognises Māori statistical needs as having equal status with those of the total New Zealand population³. Its function is to enable surveys to generate information that is at least as productive for Māori health development as it is for non-Māori health development.

Surveys based on a random sample of New Zealanders will include approximately 15% Māori and 85% non-Māori. The overall findings of such a survey will predominantly reflect Pākehā profiles of exposure or access to social determinants of health, health behaviours, use of health services, and outcomes. Policy and programmes developed on the basis of this type of data will therefore be more likely to meet Pākehā health needs than to meet Māori health needs. Through this process, health surveys may have the unintentional effect of increasing health disparities.

Including equal numbers of Māori and non-Māori in survey samples allows data to be analysed to equal depth and breadth for each population. Explanations can then be sought for both Māori and non-Māori health outcomes and appropriate policy developed for both populations. Such stratified sampling⁴ also enables total population averages to be calculated for each population, whereas a survey based on a random sample of New Zealanders will not allow equal depth of information to be produced for Māori and non-Māori – it will favour the numerically dominant.

Several studies in Aotearoa/New Zealand have incorporated the principle of equal explanatory power into the study design⁵. One example is a prevalence survey of sleep problems among adults recently conducted by Te Rōpū Rangahau Hauora a Eru Pōmare and the Sleep/Wake Research Centre (Harris et al 2002). Because the treatment of sleep disorders is just developing in New Zealand this is a unique opportunity for the needs of Māori to be recognised and incorporated early into the planning of services. Approximately equal numbers of Māori and non-Māori respondents (~3,500 each) were obtained from an age-stratified random sample of the electoral roll using the Māori descent variable.⁶ Through this method, the study aims to produce prevalence information on sleep disorders at an equal level for Māori and non-Māori, to seek potential explanations for disparities, and to guide policy and the purchase and provision of appropriate and effective treatment services for Māori as well as non-Māori.

³ This paper builds on discussion published previously in *Ethnicity Matters* (Robson and Reid 2001).

⁴ The use of the term ‘oversampling’ to describe a sample that contains more than 15% Māori (or whatever the current proportion Māori make up of the total NZ population) supports a perspective that privileges the ‘total NZ population’ and minoritises Māori. In a framework that recognises the rights of Māori as a people, sampling two to five times as many Pākehā as Māori can be seen as ‘oversampling’ Pākehā. See Dawson (2001) for discussion on the power of language - particularly the elements of defining, interpreting, naming and categorising - in ‘shaping who gets what and the making and remaking of culture and identity’ (p.238).

⁵ See for example, the evaluation surveys for the *Why Start? Hei Aha te Kai Paipa* campaign (BRC and Eru Pōmare Māori Health Research Centre 1999); *The Primary Care Management of Childhood Asthma* (Tomaiaora, Auckland University - in progress).

⁶ Because not all those of Māori descent identify their ethnicity as Māori, slightly more than half the sample was of Māori descent in order to obtain equal numbers of respondents of Māori and non-Māori ethnicity.

MANA WHAKARITENGA - THE EPIDEMIOLOGICAL NECESSITY FOR EQUAL EXPLANATORY POWER

The need to stratify Māori and non-Māori data by age-sex-socioeconomic-health variable

This section discusses the epidemiological or study power aspect of 'equal explanatory power' and its implications for eliminating inequalities in health between Māori and non-Māori. We focus on why New Zealand health surveys should include enough numbers of Māori and non-Māori, at each intended level of stratification, to be able investigate the basis of the differential outcomes for each variable of interest.

During the last two decades, Governments have recognised that disparities in Māori and non-Māori health exist, and health agencies are now charged with reducing these inequalities (MoH 2002a; 2002c). The New Zealand health research literature however, has not yet fulfilled the concomitant task of providing the appropriate tool-kit of information for designing effective interventions. In the bulk of the literature, disparities are either ignored (the data not collected or not analysed by ethnicity) or are merely observed and documented. Explanations for these differences are rarely discussed (Baxter 2000; 2002).

The consequences of this failure to rigorously investigate the determinants of disparities are not benign. We are living in an era of improving overall health, but increasing social inequalities (Graham 2000). If we fail to ask questions about how inequalities are produced and reproduced, the status quo will be maintained and gaps will continue to widen. Furthermore, reporting disparities without seeking explanations supports assumptions that the basis for the difference is already completely understood and thus bolsters the ideologies of biological determinism (Jones 2001; Krieger 2000) or deficit thinking⁷ (Ryan 1971; Pihama 1993; Lykes et al 1996; Valencia 1997; Reid et al 2000). It can contribute to the 'racialisation'⁸ of health issues "by identifying the health disadvantage of ethnic minority groups as inherent to their ethnicity, a consequence of their cultural and genetic 'weaknesses' rather than a result of the disadvantage they face because of the ways in which their ethnicity or race is perceived by others." (Nazroo 1999, p.215)

"The view of ethnicity as a *natural* division between social groups allows the *description* of ethnic variations in health to become their *explanation*. So, explanations are based on cultural stereotypes or suppositions about genetic differences rather than attempting to assess directly the nature and importance of such factors." (Nazroo 1999, p.219)

Possible reasons for this absence of enquiry include the following: assumptions that ethnic inequalities are unchangeable (genetic and therefore immutable); the differences are not of primary interest to the researchers (no personal stake); the disparities appear endemic and are accepted as 'normal', unsurprising; they seem

⁷ The definition of deficit thinking intended here is akin to 'blaming the victim' - 'a way of thinking about social problems that locates their origins in the purported deficits and failings of their victims rather than in the social institutions and practices that had brought about and sustained their victimisation' (Lykes et al 1996, p.7). See also Pihama 1993, Valencia 1997 and Smith 1999. It is important to critique the deficit model explanations for ethnic disparities, rather than to avoid reporting disparities for fear that Māori will be seen as 'deficit' compared to non-Māori.

⁸ Racialism - The belief that races have distinctive cultural characteristics determined by hereditary factors and that this endows some races with an intrinsic superiority. Collins Concise Dictionary, 1989.

intractable and too hard to tackle (Jones 2001). However, with a legislative imperative “to reduce health disparities by improving the health outcomes of Māori and other population groups”⁹, the Ministry of Health is committed to supporting the sector in this task with appropriate information from the survey programme of the New Zealand Health Monitor.

A key strategy for investigating the causes of health disparities is to 1) stratify data by ethnicity (treated as a marker for differential experiences and exposures) in order to explore the factors¹⁰ contributing to the difference; 2) to compare the distributions and profiles of the candidate risk factors by ethnicity; 3) and to seek explanations for the differences in risk factor profiles (Jones 2001; Krieger et al 1993, Krieger 2000). Because socioeconomic status is associated with ethnicity in Aotearoa/New Zealand, and is also associated with health (Howden-Chapman & Tobias 2000), stratification by socioeconomic status is also necessary¹¹. This provides a means of determining the extent to which the economic or non-economic consequences of racial discrimination¹² underlie the observed disparities¹³ (Krieger et al 1993). Such analyses, of course, should be reported in the context of a discussion on how institutional racism¹⁴ profoundly shapes socioeconomic status and is the reason why there is a differential distribution of social class and deprivation by ethnicity (Krieger et al 1993; Williams 1997; Jones 1999; Reid et al 2000).

What are the implications for sample size? If our goal is to intervene to reduce and eliminate inequalities, we need to measure the experience of Māori and non-Māori in each sub-group (eg. SES-age-sex). This requires obtaining estimates of the absolute values of the outcome variable in each stratification. This is necessary both to inform the design of interventions and also to enable us to monitor how effective our interventions are. For which groups specifically have outcomes improved (or worsened)? Has there been overall improvement but increasing gaps within or between groups? To answer these questions and provide effective monitoring (baseline and ongoing), both the Māori and the non-Māori samples will need enough numbers in each SES-age-sex group to provide reasonably precise estimates.

⁹ NZ Public Health and Disability Act, 2000. Section 3.1(b)

¹⁰ Including exposure to/access to the social, economic, political, determinants of health, and the continuum of health care.

¹¹ The limitations of crude socioeconomic measures must also be taken into account however, as in a society structured by racism, standard indicators of socio-economic status/deprivation are not equivalent for Māori and non-Māori (Williams et al 1997). For instance, Pākehā receive higher incomes than Māori in each occupational class (Davis et al 1997); similarly in each deprivation decile Pākehā have higher incomes than Māori (unpublished data); for similar educational qualifications (and adjusting for other confounders) Pākehā are over-represented in higher occupational classes and receive higher wages (Alexander et al 2002). Further development of socioeconomic measures is required ‘to capture the full range of socioeconomic disparities among and between’ Māori and non-Māori (Krieger et al 1993).

¹² See Jones 1999; 2000; 2001 and Krieger 2000 for explanations of how racism impacts on health.

¹³ “If adjusting for socioeconomic position (along with relevant confounding) eliminates observed racial/ethnic disparities in the specified outcome, the economic consequences of racial discrimination are inferred to underlie the observed (unadjusted) disparities, in other words, both racism and class matter.” (Krieger 2000)

¹⁴ Institutionalised racism is defined as differential access to the goods, services and opportunities of society by ethnicity. It is often evident as inaction in the face of need, and manifests itself both in material conditions and in access to power (Jones 1999). In New Zealand it can be seen in the skewed distributions of deprivation, occupational class and income of Māori and non-Māori (Howden-Chapman & Tobias 2000).

Furthermore, sample size considerations should take into account the likelihood of interactions. For example, if there is an interaction of sex and ethnic group such that the relationship between the variable concerned (eg. family income) and the outcome measure (eg. health status) differs for males and females within ethnic group, collapsing results across sex or ethnic group would not be appropriate (MoH 1999a). Similarly, if effect modification exists such that levels of disease or of risk factors differ among Māori and non-Māori in the same socioeconomic strata, adjusting for socioeconomic status is not appropriate and only stratified results should be presented (Krieger et al 1993). The presence of such an interaction was found in the 1996/97 NZ Health Survey for the SF-36 scores (MoH 1999a). Both of these scenarios indicate a need to design survey samples to produce equally precise estimates for Māori and non-Māori stratified by SES, sex and age.

Summary

This section noted the negative consequences of ignoring disparities or merely reporting them without seeking explanation. It outlined the necessity to stratify Māori and non-Māori samples by socioeconomic status, given the association of socioeconomic status with health and with ethnicity in New Zealand. This requires ensuring each level of stratification includes enough Māori and non-Māori respondents to: 1) seek explanations for outcomes and disparities; 2) contribute to planning and design of interventions that are equally as effective for Māori as they are for non-Māori; and 3) to monitor the effect of the interventions on outcomes and on inequalities. The likely presence of interactions strengthens the need for stratified sampling of Māori and non-Māori by socioeconomic status, sex and age. Having discussed the epidemiological rationale for equal explanatory power, the next section focuses on its incorporation into the New Zealand Health Monitor.

TE TIROHANGA HAUORA O AOTEAROA - THE NEW ZEALAND HEALTH MONITOR

The New Zealand Health Monitor (NZHM), a 10-year cycle of population-based surveys, seeks to provide information on health determinants, health status or 'outcomes', and on the use and non-use of health services. It aims to understand how inequalities in health, in access and in system responsiveness are produced and reproduced (MoH 2002b).

The population-based focus of the New Zealand Health Monitor is designed to complement other patient-based information systems such as the WAVE project, and thus provide information on unmet needs and access barriers. Based on inputs and throughputs, information on the performance of the health system for Māori produced by WAVE will be dependent, to some extent, on the number of Māori receiving the services¹⁵. Because the non-Māori 'patient' population outweighs the Māori 'patient' population, the quality of information for Māori derived from such data will necessarily be of inferior quality to that for non-Māori. Unlike the service-based data, the community-based surveys of the NZHM provide an opportunity to evaluate the performance of the health sector for Māori at a level which equals the evaluation it receives for non-Māori. Equal explanatory power cannot generally be accomplished by patient-throughput data systems. It is critical therefore that it is attained in the surveys of the New Zealand Health Monitor.

The New Zealand Health Monitor aims to contribute to the goals, objectives and outcomes of the Ministry of Health, as identified in the Statement of Intent, June 2002 (MoH 2002a). Appendix 1 describes how the implementation of equal explanatory power will support each of the Ministry's stated intentions.

Age structure, the life-course and equal explanatory power

The New Zealand Health Monitor recognises age as a critical dimension for health policy and services, and notes the importance of lifecourse analysis in explaining and addressing health inequalities (MoH 2002b, p.14). In a 'racially'-structured society, different ethnic groups are channelled into different lifecourse trajectories (Dorling & Simpson 1999; Graham 2000). The Māori population has a different health experience to Pākehā throughout the life-course. Māori experience higher rates of mortality, morbidity (Pōmare et al 1995; MoH 1999b) and comorbidities (Davis et al 2002) associated with ageing (eg. diabetes, high blood pressure, coronary heart disease, heart failure) at an earlier age than the Pākehā population. This concept has been referred to as 'accelerated ageing'¹⁶ (Jones 1999). This difference in age-structured morbidity and mortality has major relevance to work on reducing inequalities – from the construction of funding formulae, to service planning and rationing mechanisms, research, monitoring and evaluation.

¹⁵ And also dependent on the quality, completeness, consistency, and comprehensiveness of ethnicity data in the health sector (Robson & Reid 2001) – all of which need immediate attention and rapid improvement.

¹⁶ Note that the concept of accelerated ageing is understood as resulting from cumulative differential exposures to social determinants of health, rather than a manifestation of genetic or intrinsic risk. Jones' analysis of the blood pressure distributions of Māori and non-Māori, from the 1997 National Nutrition Survey indicated a similar (although less extreme) trend of 'accelerated ageing' among Māori to that she had observed among African-American in the US. However, the Māori sample size was not large enough to form statistically significant conclusions (Jones 1999).

For example, figures 1 and 2 show that the overall funding of health services in New Zealand closely follows the pattern of mortality of the total New Zealand (or non-Māori) population. Māori however, have a very different age-mortality pattern, with most deaths occurring around 10 years earlier (figure 3). The Māori/non-Māori mortality ratios in figure 4 demonstrate that this mortality pattern cannot be explained by the younger age structure of the Māori population. Given the different lifecourse, higher rates of co-morbidity, disability and more severe health needs of Māori at earlier ages than the total NZ population, structuring health funding on the profiles of Pākehā lifecourse patterns may impact negatively on the ability of health services to provide care that meets Māori needs.

Figure 1: Per capita health funding by age group and sex, 1997/98 (MoH 2001b)

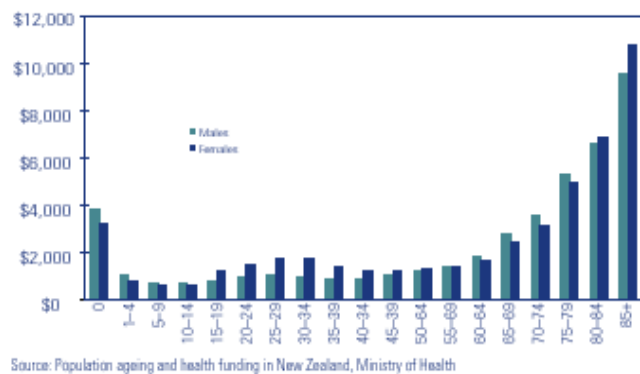


Figure 2: Numbers of non-Māori deaths by age group, 1998 (Source: Statistics NZ, Demographic Trends)

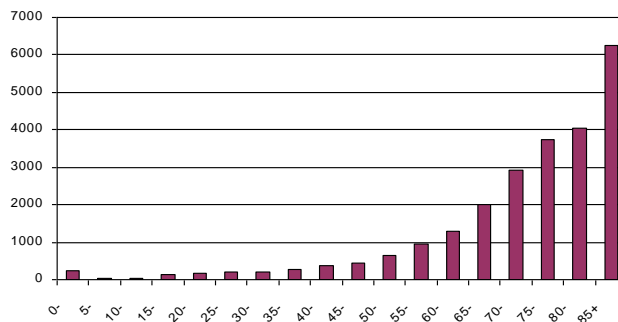
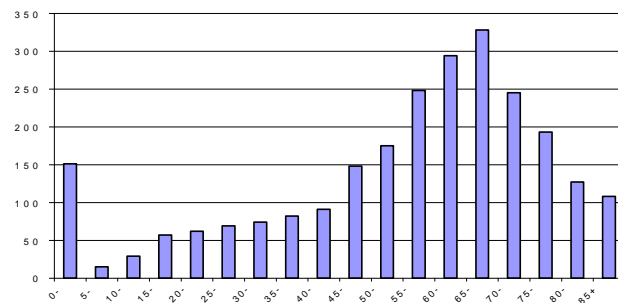


Figure 3: Numbers of Māori deaths by age group 1998 (Source: Statistics NZ, Demographic Trends)



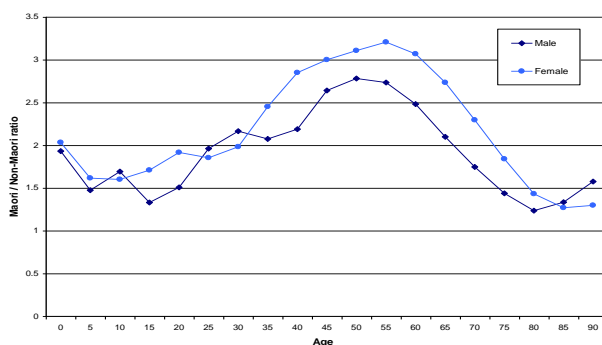


Figure 4: Māori/non-Māori mortality ratios by age group and sex, 1995-97 (Source: Life Tables 1995-97, Statistics NZ)

Age is a significant determinant of resource allocation in New Zealand. For example, age is used as a factor in rationing services such as age-related disability services. If the entry point is based on Pākehā population age-health profiles (as is eligibility for superannuation for instance), this could lead to gaps in services for younger Māori who may have health needs similar to those of Pākehā ten years older. Through such a mechanism, the rights and needs of younger Māori, with the same serious health or disability support needs as older Pākehā, are negated and remain unmet. Furthermore, labour market discrimination (Sutherland & Alexander 2002) and higher unemployment rates among Māori mean that these younger Māori may have significant resource issues further affecting access to health care (eg. lower income, less access to health insurance, higher living costs due to lower levels of wealth).

Age-standardised analysis, while useful for summary measures, can also serve to obscure important disparities and differences in the age patterning of ill health and risk factors. Age-specific data is therefore a critical component of ethnic data analysis, and will be more useful for determining the salient intervention points for Māori and Pākehā. Sample sizes will therefore need to be large enough to produce adequate age-specific data for Māori, and to include age-specific rates and cross-tabulations in the output of NZHM surveys.

Socioeconomic status and deprivation

Recognising the impact of social determinants on health, the NZHM intends to collect information on a range of socioeconomic variables. As noted above, the vital role of socioeconomic data in analysis of ethnic health inequalities in Aotearoa has implications for sample sizes.

The development of tools such as the NZDep index of small-area deprivation or the NZSEI has enabled considerable illumination into the association between socio-economic conditions/status and health in New Zealand. This has been particularly useful for teasing out what is going on with ethnic health disparities. For example, rates of hospitalisation for Māori have been around twice that for non-Māori during at least the past two decades (Pōmare et al 1995; MoH 1999b). This is an indicator of the high levels of morbidity among Māori, particularly in the context of extremely high mortality rates. Nevertheless, during the early 1990s, Māori were thought to be ‘over-utilising’ hospital services, ‘attending services too late/too ill’, or ‘using accident and

emergency services too much'. Policies were developed to discourage use of 'expensive' hospital services¹⁷ and Māori were to be encouraged to use primary care rather than secondary care¹⁸ (Public Health Commission 1995). However, new analyses of hospitalisation data for Māori and non-Māori stratified by deprivation level revealed that, at each level of deprivation, in most agegroups, Māori were receiving lower levels of hospital care than non-Māori (Howden-Chapman & Tobias 2001). Rather than 'over-utilising' secondary care, Māori were found to also face barriers to secondary and tertiary services. This has led to further research into pathways to care for Māori, and into differences in access to appropriate care (eg. Westbrooke et al 2001).

As previously mentioned, the NZHM provides the opportunity for evaluation of sectors that are not currently included in the routine data collections of the National Minimum Data Set. If there is enough study power to produce meaningful estimates for Māori and non-Māori when stratified by age-sex-and-socioeconomic variable, the data is likely to be very fruitful.

In addition, the development of measures of the impact of discrimination on health may play a pivotal role in developing an understanding of Māori and non-Māori disparities. Evidence from the US indicates potential effect modification by social position, of associations between self-reported experience of discrimination and health status (Krieger 2000). This further underscores the need for sample sizes that will produce adequate estimates for Māori at each level across the range of socioeconomic/deprivation status.

Regional level

Is 'equal explanatory power' for Māori and non-Māori necessary at the regional level as well as at the national level? District Health Boards (DHBs) need to know the needs of their populations for appropriate planning and evaluation. Furthermore, DHBs are obliged to provide relevant information to Māori for the purposes of Māori health improvement and Māori service development.¹⁹ The NZHM intends to stratify sample frames by DHB in order to estimate rates at DHB level and is investigating the feasibility of clustering DHBs to increase power for certain estimates (MoH 2002b).

Regional differences in the distribution of the social determinants of health have been identified (Te Puni Kōkiri 2001) indicating potential differences in health status and health care. The rural/urban gap in access to infrastructural services such as power, postal, phone, transport, health, banks, and in employment opportunities, has widened over the last two decades. Exposures and access to environmental and structural determinants of health, access to, and quality of, health care (and other services) may therefore vary for rural and urban Māori, for rural Māori and non-Māori, and for urban Māori and non-Māori.

¹⁷ For example, hospital accident and emergency unit hours were restricted, entry criteria was restricted, fee-for-service accident and emergency clinics were established, smaller hospitals were closed, certain services were rationed.

¹⁸ A simultaneous positive development for Māori was the establishment and growth of Māori health and social service providers (albeit without the tenure track or evergreen clauses in the contracts that other providers benefit from).

¹⁹ See Section 23 (d), (e), (f) of the New Zealand Public Health and Disability Act 2000.

The pending devolution of Māori service contracts and funding streams to DHBs has a bearing on the need to monitor the performance of the health system for Māori, by DHB region. By-Māori-for-Māori services are unevenly distributed geographically. There are opportunities and risks inherent in more localised decision-making, where each DHB has increased scope to either prioritise Māori health service development or to consider it a luxury that their funding deficit situation cannot afford to maintain or develop. Adequate data for monitoring Māori health outcomes and disparities at DHB level is therefore essential – even, or perhaps especially, in those regions which have a lower density of Māori population.

Intersectoral action

The same principles apply to other Crown data collections and surveys such as the Household Labour Force Survey (HLFS), the Household Income Survey (HIS), or the social indicators survey. The Ministry of Health aims to reduce health inequalities through intersectoral action (MoH 2002c). However, equal explanatory power is not a feature of current surveys which monitor the social determinants of health – for instance, the HLFS does not have a Māori sample size adequate to produce youth unemployment rates for Māori, let alone by sex as well, or by region. Between census years therefore, it is impossible to adequately monitor the association between youth unemployment among Māori and youth suicide rates among Māori, for example. Sutherland and Alexander (2001), in their paper on occupational segregation and wage discrimination note the unacceptably low power in the HIS and HES for measuring Māori occupational and income experience, and strongly suggests increasing the Māori sample size in these and other surveys to enable more substantial work to be done. The Ministry of Health may wish to consider advocating for the principle of equal explanatory power in surveys and research conducted by other sectors.

Summary

The first section of this paper outlined the reasons for stratification of Māori and non-Māori samples by age-sex-socioeconomic status. This second section drew attention to the need for equal explanatory power at each level of stratification in the surveys of the NZHM, including at regional level. The implementation of equal explanatory power in the surveys of other sectors would also increase understanding of how health disparities are produced. The next section explores how equal explanatory power is necessary to fulfil Treaty rights and meet Crown obligations.

TE TIRITI O WAITANGI - THE RIGHTS-BASED NECESSITY FOR EQUAL EXPLANATORY POWER

The rights of indigenous peoples are recognised internationally in various conventions, declarations and covenants, (Te Puni Kōkiri 1999). They are receiving increasing attention through forums such as the UN Forum for Indigenous Peoples established in May 2002. In Aotearoa, Māori have tangata whenua rights affirmed in the Declaration of Independence, 1835 and reaffirmed by the Treaty of Waitangi. Treaty rights are additional to indigenous peoples' rights and do not replace them.

Moana Jackson (2002) notes that a treaty is an agreement between nations. This differs from the notion of 'partnership'. Treaty relationships recognize the fundamental equality of the treaty participants, whereas partnerships arise from corporate concepts (as in a law firm for instance) where there are junior and senior partners, with some maintaining more control and/or receiving more resources than others. In a treaty relationship there are no senior or junior partners. As Treaty participants, Māori have the right to recognition as a people, not a minority group nor a subgroup whose needs are subsumed by those of the total New Zealand population (Churchill 1996; Trask 1999). Tangata whenua rights include:

- the right of self-determination (Te Puni Kōkiri 1999)
- the right to equity of values (Cram 2002)
- the right to collective wellbeing (Jackson 2002)
- the right to equal quality of information (Robson and Reid 2001)
- the right to policy based on evidence that is valid for Māori (Durie 1998).

Good governance, (Article One of the Treaty) carries a guarantee, not only of upholding the Crown's Treaty obligations, but also of providing governance that does not disadvantage Māori (Te Puni Kōkiri 1998), and does not provide inferior levels of service or policy advice, nor base its policy on inferior quality of evidence or research.²⁰

Indigenous and Treaty rights (and the concomitant Crown obligations) hold no matter what proportion of the population is Māori – whether 15%, 50%, 95% or 5%. Despite these rights and obligations however, Māori citizens do not currently experience equal levels of collective wellbeing with non-Māori. Differential access to the goods, services and opportunities of society for Māori and non-Māori has been repeatedly demonstrated (Te Puni Kōkiri 1998; 2000a; 2000b). Jones (2001) notes that ethnic health disparities are the result of 1) differential exposures to the social, political, economic and behavioural determinants of health, 2) differential access to health care (prevention and treatment), and 3) differential quality of care received. There is evidence that such

²⁰ In addition to Māori sample size implications, this has implications for the quality of ethnicity data in routinely collected datasets, such as the National Health Index, hospital data, and primary care data; and in those data collections that have ceased collecting ethnicity data, such as arrival and departures – information needed to monitor migration and to estimate intercensal Māori populations.

differences exist at each of these levels in Aotearoa/New Zealand²¹. The consequent higher health needs of Māori are therefore a result of ongoing breaches of Treaty rights (Jackson 2002).

Because Māori have different profiles to non-Māori of health status, risk factors, utilisation of health services and outcomes of care, a health system based on and tailored to meet the needs of the total New Zealand population (85% non-Māori), is not likely to meet the needs of the Māori population. That the aforementioned inequalities exist is indeed testament to this.

One critical example of the consequences of insufficient data on Māori health and health service utilisation (or provision) can be seen in the derivation of the population-based funding formulae (PBFF). These formulae determine the allocation of funding for the health sector, and therefore are a determining factor in what services can be provided (or received), where and to whom.

The interim population-based funding formula aims to fairly distribute available funding for health and disability services between DHBs according to the relative needs of their populations (MoH 2001a). With some (relatively minor) policy-based weighting for unmet need, the baseline cost weights are derived from historical service utilisation data. It is therefore primarily driven by what has historically been provided, where and to whom, thereby potentially exacerbating current Pākehā advantage in provision of and access to care. Furthermore, it is limited by the quality and quantity of data from which the formulae were derived, ethnicity data in particular. Because ethnicity data is either non-existent or poorly collected in major sectors (primary care and disability support for example), historical utilisation costs for Māori are obscured and were not built into the funding allocations.

For instance, the population cost weights for disability support do not include any weights for Māori because there was not sufficient ethnicity data recorded in the CCPS (MoH 2001a). Yet the New Zealand disability survey found that Māori have higher unmet needs and a higher proportion with multiple disabilities (Statistics NZ 2002). Furthermore, the formula for community services was based on age/sex data from the Southern and Central RHA districts – areas with a lower proportion of Māori in their population than other RHA districts.

Likewise, the baseline primary care funding formula is derived from age/sex data for the total New Zealand population and does not include data differentiated by ethnicity (pers. comm. Jon Foley). The interim PBFF report notes that the sample data used to derive the costs provided ‘no evidence of increased cost for Māori once either [community services] card or NZDep96 were allowed for. However, *the sub-sample of Māori was small*’. [author’s emphasis]. The NZ Health Survey 1996/97 was also used to validate the cost weights calculated, but the NZHS also could not give a clear indication that the cost weights for Māori should be increased²² (MoH 2001a). Of concern is that the formula is based on data that is inadequate for such important decisions as funding allocation for health care for Māori, and therefore risks maintaining, if not increasing inequalities.

²¹ For example: for level 1: Howden-Chapman & Tobias 2000; Sutherland & Alexander 2002. For levels 2 and 3: Te Puni Kōkiri 2000b; Baxter 2000, 2002; Westbrooke et al 2001; Carr et al 2002; Tukuingtona et al 2002, Arroll et al 2002.

The right to recognition as a people, and not as a sub-group is pertinent to the design, analysis and reporting of surveys. The findings of the 1996/97 New Zealand Health Survey are reported in *Taking the Pulse* (MoH 1999a). This report presents data on risk factor prevalence, health status, and health service utilisation. The results are typically reported by sex-age groups, ethnicity, family income, NZDep96 score, education, and sometimes by self-rated health status and smoking status²³. However, it is the total New Zealand data (80.3% Pākehā) that is reported in these stratifications. Apart from the section on SF-36 profiles, the findings for Māori are typically presented as a univariate result, (one line per table of results by sociodemographic variables) or stratified by sex only. In the cross-tabulated findings Māori are subsumed by data that predominantly reflects Pākehā experience.

This analysis and presentation of data does not support the status of Māori as tangata whenua, but relegates Māori to minority status, or perhaps to just a sociodemographic variable. It also incorrectly assumes that socioeconomic measures have the same health association for Māori as for non-Māori. Efforts to understand what is happening for Māori and to design evidence-based programmes for Māori health development are hampered by the lack of detailed information. Furthermore, Māori are precluded from evaluating the impact of Crown activities on Māori health compared to non-Māori health. As we have noted elsewhere, “the full expression of tino rangatiratanga positions Māori statistical needs as being equally as valid as those of the total population, and challenges the Crown to meet those needs as part of its Treaty obligations.” (Robson & Reid 2001). In the context of health surveys, adequate Māori sample size is a fundamental prerequisite for reporting data in a way that recognises the tangata whenua status of Māori as a people or whole population.

“E kore e horo te hauhunga.”²⁴

Mana Tirotiro – Equal Monitoring Power

Māori (iwi, hapu, whānau and other collectives and individuals) have a Treaty right, and a citizenship right to monitor and evaluate the outcomes of government policy. Comparable Māori and non-Māori data therefore needs to be made available and accessible²⁵, not for assimilative comparisons of Māori to a Pākehā standard, but to enable the monitoring of who is receiving what resources, who is being most advantaged by our societal structures and systems, including the health system²⁶. The current trend of reporting Māori data and total New

²² It is not clear from the report whether the NZHS had enough study power (particularly for Māori in the less deprived areas) to validate this conclusion.

²³ See for example tables 11,18,33,39,46,57, 62,69 in *Taking the Pulse*. (MoH 1999a) Other tables, (see tables 8,12,13,19,20, etc) despite being labeled ‘proportion of xx by age and ethnicity’, are really separate tables – one by agegroup and one by ethnicity. In other words, the Māori data is not stratified by agegroup (apart from table 2 which presents proportion of current smokers by age-sex-ethnicity).

²⁴ “There are not enough to cause the frost to crumble away.”

²⁵ The concept of an “information commons”- all citizens having the right to access, process and analyse information has currency in the United States. The principle is that ‘information about the state, and which is gathered by the state for policy purposes, is essential to enable citizens to evaluate government activities. Furthermore, the citizens have already paid for those statistics through taxation, and it cannot be acceptable for them to pay again so they can use the statistics.’ (Blakemore 1999, p.47).

²⁶ Confining Māori researchers’ analysis to the subsets of Māori data limits our potential to contribute to local and international knowledge. “...autonomy to develop a self-defined, independent analysis does not mean that Black feminist

Zealand data in separate documents, often reported in a way that prevents comparison of outcomes for Māori and non-Māori²⁷ negates the Treaty right of equal power of surveillance, monitoring and evaluation of Crown actions²⁸.

A further risk arises out of analysing Māori data in isolation from the comparative data on non-Māori: keeping the frame of analysis only around Māori can limit potential explanations for disparities to Māori people or culture. “Māori become the objects of inquiry, positioned as deficient, while the determining nature of Pākehā culture and unequal power relations remain unexplained” (Robson & Reid 2001).

thought has relevance only for African-American women or that we must confine ourselves to analyzing our own experiences.” (Patricia Hill Collins 1990, p 35)

²⁷ see for example, the 2001 Disability Survey Snapshots. (Statistics NZ 2002).

²⁸ Note that this information is also necessary to enable Māori to monitor Section 3.3(a) of the NZ Public Health and Disability Act 2000, which states that ‘nothing in this Act entitles a person to preferential access to services on the basis of race[sic]’. Current evidence points to pākehā receiving preferential access, *de facto* if not *de jure*.

MANA WHAKAMĀRAMA

The corollary aspects of equal explanatory power concern what we have sometimes described as ‘equal analytical power’ – the power of definition, explanation and meaning. Quantitative data analysis and interpretation, like that of any other methodology, is shaped by the researcher’s biography – their experience, assumptions and understanding of the world.

“A model may be thought of as a story because it is an attempt to make sense of the data by extracting the salient or important elements and presenting them in a form which is easy to understand. ... Although variables are treated as individual attributes during the data collection phase of the research, analyses and texts will subsequently be produced by the researcher which offer insights about the determining power of those variables as a social and narrative construction. ... the meanings which are constructed for variables through the process of statistical analyses represent only one possible set of meanings.” (Elliot 1999, p.102).

Non-Māori researchers, data analysts and report writers are likely to view survey data differently from Māori. Just as the sample composition of a survey can result in findings that predominantly reflect Pākehā experience, so too can Pākehā interpretations, experience, and views of the world overdetermine the analysis and interpretation of the data. To achieve equal power of explanation then, it is essential that Māori researchers have a key role in all determining aspects of the research.

“To formulate and test hypotheses in the most effective manner, researchers should include representatives of, and health care consumers within, the affected populations at every level of the relevant research projects: conceiving the study, planning its design, recruiting subjects, ensuring participation, and interpreting as well as disseminating, the results.” (Krieger et al 1993, p.110)

There is a complex interplay between research, the researcher and the researched which can significantly affect the validity of the research (Robson & Reid 2001). As well as meeting Treaty obligations, increased Māori control in the study will have other beneficial effects. The colonising aspects of research in Aotearoa, that have resulted in distrust and aversion to research among Māori communities (Smith 1999), will be reduced and participation is likely to increase. Furthermore, the research will have greater legitimacy among Māori communities – an important prerequisite for the uptake of the results. The implementation of both aspects of equal explanatory power – equal study power, and equal power of explanation, will improve the quality, outcomes and effectiveness of the research.

“When indigenous peoples become the researchers and not merely the researched, the activity of research is transformed. Questions are framed differently, priorities are ranked differently, problems are defined differently, people participate on different terms”. (Smith 1999, p.193)

WHAKAMUTUNGA – CONCLUSION

Māori and non-Māori disparities in health are not inevitable. They can be reduced, eliminated, and prevented from reoccurring. The continued existence of health inequalities prohibits our society from reaching its full potential, as the contributions of far too many citizens are prematurely halted. Achieving a nation that manifests equity and fairness will benefit the whole of Aotearoa.

Inequalities in health are the result of the unequal distribution of the social determinants of health. The unequal distribution of Māori and non-Māori in research, both as participants and as researchers, further compounds these inequalities. Implementing equal explanatory power in the cycle of research, policy, programmes and monitoring will help to break this cycle of persistent inequalities.

The lack of vigorous exploration of the basis of Māori and non-Māori differences in health data is distancing, othering, and a breach of rights. It indicates a lack of serious intention to properly address disparities and prevents others from taking up that challenge as fully equipped as possible. It is also wasteful, as this knowledge can provide important clues to understanding the aetiology of disease, and contribute to primary prevention (Jones 2001).

In order to improve Māori health and reduce inequalities, surveys need enough power to be able to investigate the determinants of the health inequalities, design interventions and monitor their effects. This is required not only to equip policy makers, purchasers and providers to fully address disparities, but also because full and accessible information is essential to enable Māori and other citizens to evaluate government activities.

Current social inequalities in health are a breach of tangata whenua rights and Crown obligations. The past two centuries of research as a tool of colonisation compromises the validity and effectiveness of research today. Increased Māori control over research will lead to increased participation by Māori, and thus improve the quality and outcomes of the research. The foundation of inequalities is the disparity of power. It is only when this undergirding disparity is addressed that Māori health development will be able to flourish.

ACKNOWLEDGEMENTS

The ideas presented in this paper were developed from discussions, seminars and the work of researchers from Te Rōpū Rangahau Hauora a Eru Pōmare, including: Papaarangi Reid, Vera Keefe, Ricci Harris, Keitha Small, Elana Taipapaki Curtis. Any errors of detail or logic belong to the author, Bridget Robson. Thanks to Gordon Purdie (biostatistician) and Des O'Dea (health economist) from Wellington School of Medicine, for specialist advice. Tēnā rā koutou katoa.

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APPENDIX

The Statement of Intent (MoH, 2002a) outlines the key government goals, sector objectives and outcomes that are the focus of the Ministry of Health. This section suggests how ‘equal explanatory power’ could strengthen the Ministry’s ability to meet these stated intentions.

Key Government goals

- *strengthen national identity and uphold the principles of the Treaty of Waitangi* - ‘equal explanatory power’ is fundamental to meeting Treaty obligations. Māori nationhood is fundamental to the national identity of Aotearoa/New Zealand and will be strengthened through improved recognition of indigenous rights to information and health. Inequitable distribution of resources, opportunities, voice and inequitable outcomes (including health) undermine our identity as a nation that values fairness and equity. Reducing inequalities must be a key component of strengthening national identity. Stronger Māori representation in health information should lead to stronger health policy development for Māori. Improved Māori health will make a significant difference to the health of the nation as a whole. The position of indigenous peoples is increasingly becoming the focus of international forums such as the UN with its recently established Indigenous Peoples’ Forum, and the ILO (see Convention No 169 concerning Indigenous and Tribal peoples 1989).
- *restore trust in Government and provide strong social services* - taking Māori health information needs seriously will help to restore Māori trust in government, that we are not being marginalised or treated as a minority outnumbered by the numerically dominant. This may also contribute to increased participation by Māori in the surveys, improving response rates and the validity of the data produced. Better data will lead to better policy development and strengthen the ability of the health system to meet the needs of its constituents.
- *reduce inequalities in health, education, employment and housing* – better information on Māori health is needed in order to reduce inequalities. Current information is enough to show there are disparities between Māori and non-Māori, but the need for further depth and breadth is considerable. Without equal explanatory power, policy will be based on information heavily skewed towards Pākehā health needs and may therefore increase rather than reduce inequalities in health. The interdependency of health, education, employment and housing means that the establishment of equal explanatory power across sectors will potentiate the ability of each sector to reduce inequalities.
- *improve New Zealanders’ skills* – in addition to the improved information on Māori health which will of itself contribute to health sector workforce development, the implementation of ‘equal explanatory power’ and the allied ‘equal analytical power’ will also necessitate skill development in survey design, sampling, data collection, analysis, reporting and incorporation into policy development– not only among the Māori workforce but across the whole sector. These skills are likely to lead to improved monitoring of health outcomes for other populations as well.

Key sector objectives:

1. *Implement the health and disability strategies* – All strategies aim to reduce inequalities. Monitoring the impact on Māori will be a critical component for each strategy.
2. *Reduce inequalities in health outcomes* – To reduce inequalities the Ministry intends to concentrate on improving the health of Māori, Pacific peoples and those with fewest resources, and to work with other sectors that impact on the wider determinants of health. Basing Māori health policy on more comprehensive evidence will contribute to this objective.
3. *Develop successful District Health Boards* – Better developed information on Māori health (both nationally and regionally) will assist DHBs to better meet their responsibilities for improving, promoting and protecting the health and independence of all their populations. Services that have the capacity to meet the needs of Māori will also better serve the health needs of all peoples (eg. Ngāti Porou Hauora).
4. *Build public confidence in the health and disability system* - Reaching people with high health needs who have not accessed services at an earlier stage is key to this objective. As Māori are highly represented among this group, equal representation of Māori in the monitoring of progress in this area will be critical.
5. *Meet obligations under the Treaty of Waitangi* - Equal explanatory power is fundamental to meeting Treaty obligations.

Key Ministry outcomes.

1. *Sector leadership* - By implementing equal explanatory power in the monitoring of health outcomes and service performance the Ministry will provide leadership to DHBs, to health services interested in monitoring their effectiveness, to health research generally, and to sectors other than health. This practice would also be internationally progressive.
2. *Policy advice* - Policy will be based on equal quality of evidence for Māori and non-Māori.
3. *Performance management* – The performance of the sector will be monitored to an equal level for Māori and non-Māori.
4. *Knowledge management* – There are clear gaps in the depth and quality of Māori health information. This strategy will help to address these gaps.
5. *Sector resources* – Implementing equal explanatory power will contribute to more effective resource allocation.
6. *Collaboration* – Disparities between Māori and non-Māori in the wider determinants of health is a key reason for implementing equal explanatory power, as policy driven by total NZ needs will not meet Māori needs. Collaboration with Māori is also necessary for the successful attainment of equity of information.
7. *Service planning* – Effective service planning will be enhanced by improved information.