



## Reducing health disparities through primary care reform: the New Zealand experiment

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### Abstract

New Zealand experiences significant health disparities related to both ethnicity and deprivation; the average life expectancy for Maori New Zealanders is 9 years less than for other New Zealanders. The government recently introduced a set of primary care reforms aimed at improving health and reducing disparities by reducing co-payments, moving from fee-for-service to capitation, promoting population health management and developing a not for profit infrastructure with community involvement to deliver primary care. Funding for primary care visits will increase by some 43% over 3 years. This paper reviews policy documents and enrolment and payment data for the first 15 months to assess the likely impact on health disparities.

The policy has been successfully introduced; over half the New Zealand population (of four million) enrolled in new Primary Health Organizations within 15 months. Over 400,000 people (half of them in vulnerable groups) gained improved access to primary care subsidies in the first 15 months. The combined effect of new payment rules and the deprived nature of the minority populations was that the average per person payment to PHOs on behalf of Maori and Pacific enrollees was more than 70% greater than the per person amount for other ethnicities for the period.

The policy is consistent with the principles of the Alma Alta Declaration. Barriers to successful implementation include the risk of middle class capture of the additional funding; the risk that co-payments are not low enough to improve access for the poor; PHO inexperience; and the small size of many PHOs. Transitional equity and efficiency issues with the use of aggregate population characteristics to target higher subsidies are being ameliorated by the introduction of low cost access based on age. A tension between the twin policy goals of low cost access for all, and very low cost access for the most vulnerable populations is identified as a continuing and unresolved policy issue.

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### 1. Introduction

In July 2002, the New Zealand government introduced a set of primary care reforms, based on the Alma Ata Declaration's [1] vision of primary health care, aimed at reducing average co-payments, moving from fee-for-service to capitation funding,

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promoting population health management competencies and developing a not for profit organizational infrastructure to deliver primary care. The vision articulated in the Government's Primary Care Strategy document in 2001, which heralded the reforms, states that "A strong primary health care system is central to improving the health of New Zealanders and, in particular, tackling inequalities in health" [2].

Many aspects of the package of reforms emphasize access to, and the design of, primary health care as a means of reducing health disparities. This emphasis is striking, in that the mainstream primary health care system has been redesigned with an explicit focus on health inequalities as a guiding principle.

This article briefly outlines what is currently known about health disparities in New Zealand, and describes the key components of the new primary care policy, with a particular focus on the features targeted at reducing disparities, and an analysis of their potential impact. It explores some of strengths and weaknesses of the policy settings. We entered into this review with the aim of addressing the following questions. How does the primary care policy aim to address health disparities? Is the policy likely to deliver improved access to primary care for minority groups? If so, to what extent is improved access to primary care likely to deliver improved health outcomes for these groups? Is the targeting strategy efficient? These questions are particularly pertinent given that, at least in terms of uptake, the policy has been a resounding success, with over half the NZ population enrolled in new primary health organizations (PHOs) after a 15 months period.

## 2. Methods

We reviewed publicly available policy documents, PHO payment business rules, and the PHO standard contract to gauge the stated intent of government policy. Information on current health disparities was obtained by reviewing recent Ministry of Health publications. We analyzed PHO enrolment and payment data from quarterly extracts from the national enrolment and payment data base for the first 15 months after PHO funding was introduced—the period from 1 July 2002 to 30 September 2003—to assess the impact on access to subsidized care. Access under the

new system is compared with access under the previous subsidy policies to assess the impact of policies.

## 3. Background and context

### 3.1. Health disparities in New Zealand

#### 3.1.1. Information base

New Zealand has a relatively strong information base from which to study health disparities, including several decades of census ethnicity data, a small area socioeconomic deprivation index [3], and a national hospital discharges database that includes a unique identifier with linked addresses. The deprivation index, NZDep2001, combines nine variables from the 2001 census, reflecting eight domains of deprivation. Each variable was calculated as the proportion of people with the specified deprivation characteristic in each small area, comprising one (or occasionally more) meshblocks. Meshblocks are the smallest geographical units defined by Statistics New Zealand, containing a median of 90 people. Each proportion is age standardized and, where necessary, adjusted for household composition. The index includes income, crowding, educational attainment, unemployment, sole parent status, home ownership and car ownership.

#### 3.1.2. Ethnic disparities

New Zealand experiences significant and enduring health disparities related to both ethnicity and deprivation. The important ethnic minorities in New Zealand for whom significant disparities have been demonstrated are Maori New Zealanders (the indigenous population), who constituted 15% of the total population at the last census (2001), and Pacific New Zealanders (first or second generation immigrants from Samoa, Cook Islands, Tonga, Fiji and the other South Pacific islands) who constitute 6% of the total population. For convenience, the non-Maori, non-Pacific population, which is mainly of European descent, but also includes Asian and other ethnicities, is referred to as other New Zealanders in this article.

Life expectancy among Maori New Zealanders is about 9 years less than other New Zealanders [4]. This gap is higher than the 6 year gap between life expectancy for non-Hispanic Whites and non-Hispanic African Americans in the United States [5]. Mortal-

ity for Maori at all ages exceeds other mortality [6]. A large number of the excess deaths are theoretically avoidable; the avoidable mortality rate for Maori is 2.3 times the other New Zealander's rate. The largest disparities exist in deaths due to ischemic heart disease, lung disease, road traffic accidents and diabetes [5]. Similar disparities exist for Pacific New Zealanders who have an avoidable mortality rate that is 1.9 times that of other New Zealanders. These disparities have increased over the past 20 years [6].

Maori and Pacific people also experience age standardized rates of theoretically avoidable hospitalizations between 60% and 70% higher than other New Zealanders. Maori and Pacific are twice as likely to be hospitalized [5] for ambulatory care sensitive conditions—conditions that are usually amenable to prompt primary care interventions.

### 3.1.3. Socioeconomic disparities

Males living in meshblocks rated in the most deprived decile (decile 10) live on average 9 years less than those in the least deprived decile (decile 1). People living in the most deprived areas have twice the probability of being hospitalized for an avoidable cause as people living in the least deprived areas (deciles 1–4) [5].

Both Maori and Pacific New Zealanders are more likely to live in deprived communities, with over 50% of each ethnicity living in areas in the most deprived three NZDep2001 deciles (the total New Zealand population is evenly distributed across the 10 deciles). Because ethnicity and socioeconomic deprivation are entwined, with greater proportions of minority ethnicities in deprived areas, it can be difficult to disentangle the relative effects of ethnicity and deprivation. However, research in NZ strongly indicates that ethnicity has an independent negative impact on health status in NZ. One study [7] analyzed ethnicity and small area deprivation and found that Maori and Pacific life expectancies at birth were lower than those of other New Zealanders at each level of deprivation. The difference between Maori and other life expectancies within deprivation deciles was 5.8 years for males and 5.3 years for females for the first seven deciles. At the 10th decile—the most deprived—the differential increased to 8.2 years for males and 10.1 years for females.

The size of the health effects associated with deprivation and ethnicity are large. The Ministry of Health

reports that had all New Zealanders enjoyed the avoidable hospitalization rates of those living in deciles 1–4, 28% fewer avoidable hospitalizations would have occurred in 1997 or 1998—an annual 'saving' of approximately 26,000 hospital admissions. Further, eliminating the socioeconomic gradient in avoidable mortality would postpone over 2000 deaths per year. Had the avoidable mortality rates for Maori and Pacific been the same as the other rates, Maori would have experienced 970 fewer deaths and Pacific people 210 fewer deaths each year than actually occurred; this represents 45 and 35% of all Maori and Pacific deaths in the 0–74 age group, respectively [5].

### 3.1.4. Financial access

The socioeconomic and ethnic health disparities described here exist in other countries also [8–13]. However, New Zealand is unusual in having a predominantly publicly funded health system with both significant co-payments for primary care visits and a strong gatekeeper role for primary care practitioners. Primary care practitioners receive, on average, 60% of their income from patient co-payments [14]. The disparities statistics need to be seen in this context, since they are likely to reflect, in part, people delaying access to primary care because of financial (and non-financial) barriers. This aspect of New Zealand's health system may have served to exacerbate the health impact of socioeconomic disparities.

## 3.2. Genesis of PHOs

Traditionally general practitioners (GPs) in New Zealand have adopted a self-employed, for-profit small business model [15]. Reforms during the 1990s prompted the development of a diverse range of primary care arrangements, including the grouping of GPs into independent practitioner associations (IPAs) and the development of increasing numbers of non-profit primary care organisations. IPAs provide single negotiating bodies for contracting purposes as well as co-ordination of innovations in service provision [16–19].

Prior to the 2002 primary care reforms, eligibility for government-subsidized primary care services was based on age (all children under 18), income, beneficiary status, and medical need (those with 12 or more primary care visits in a year). With the exception of

children under six, the government subsidy covered less than half the cost of a visit with a GP.

Low income individuals eligible for subsidized care have received a Community Service Card (CSC) which confirms their eligibility. As at July 1, 1997 about 1.10 million New Zealanders, or about 30% of the total population, held CSCs [20]. However, there is evidence that a significant minority of those eligible for a CSC have not received it, because of administrative, cultural or other barriers, thereby limiting the usefulness of CSC ownership as a means of targeting those most in need. Parks carried out a survey of 508 patients (or their accompanying relative) presenting at their doctor in 1995 [21]. She found that 28% of non-CSC holders interviewed were eligible for a CSC but did not have one. Pakeha, if eligible, were significantly more likely than other ethnic groups to have a CSC. Pacific Island people, if eligible, were significantly less likely than other ethnic groups to have a CSC. Nine percent of respondents did not know what a CSC was when asked, but did when shown a picture of one. Sixty-four percent of people who did not know what a CSC was actually held a current CSC.

In a retrospective study of general practitioner records carried out in 1993/1994, Gribben [22] estimated the CSC uptake rate among those eligible was 77%.

Non-profit primary care entities providing low cost services in deprived areas developed over the last two decades partly in response to the high user cost of primary medical care and the incomplete uptake of Community Service Card subsidies. These organizations were generally community governed, charged low fees for all users regardless of CSC status, and negotiated capitated contracts where they could [23]. Many of the features of these non-profit entities were included in the 2001 Primary Care Strategy. The issues with CSC uptake and coverage probably served as one of the drivers for the new primary care policy.

## 4. Primary care policy

### 4.1. Overview

The basic building blocks of the new primary care policy are a set of funding formulae and associated business rules and a set of organizational minimum

requirements for PHOs. These are described below, together with a commentary analyzing the impact of each major building block on health disparities. Table 1 below gives a brief overview of the new policy by comparing it on various dimensions with the preceding primary care arrangements. Both the previous and the new arrangements are complex; hence elements of both the preceding situation and new policy are simplified in this table.

Primary care providers are not required to join a PHO. They may elect to operate independently and to continue to claim via fee for service. Hence, the 'previous' policy coexists with the new policy. However, fee for service subsidies have been frozen at existing levels, while PHO funding is more generous and is being increased regularly.

### 4.2. Funding

One of the declared aims of the strategy is to enable all New Zealanders to access low cost primary health care. However, policy announcements indicate that achieving this goal will occur over a 5–8 year period because of the amount of funding required (thought to be greater than NZ\$ 500 million per annum—some 6% of current government health expenditure. The government has decided to phase in the change by introducing universal access to low cost services in areas with the most needy populations first. These populations are defined as including Maori, Pacific people, or residents of the most deprived areas (NZDep deciles 9/10). PHOs whose enrolled population is more than 50% high need are funded under the 'access' capitation formula, which includes levels of funding to enable low cost access for all enrolled persons (regardless of their individual income level, deprivation level or ethnic characteristics).

Providers serving less needy populations are also encouraged to form PHOs; however, their capitation funding is based largely on historical levels of fee for service subsidy. The funding formula for this group is called the 'interim' formula to reflect the fact that the funding will evolve to access levels over time. The government is increasing the interim formula by age increments: subsidies for 6–17-year-old increased from October 2003; those 65 and above will draw higher subsidies from July 2004. Interim PHOs and practices must declare maximum

Table 1  
Overview of new and previous policy elements

Primary care policy element	Previous policy	New policy
Governance	No mandated governance requirements—each entity defined their own. Predominant form was medically owned IPAs	Mandated involvement of Maori and community in non-profit PHO governance, and ability of all health professional groups to influence decisions
Access to government care subsidy	Available to designated age (under 18) or income groups or high users	Available to designated age groups, and practices with majority high need enrolled population
Funding arrangement	Fee for service is dominant form, with local capitation arrangements in some areas. 60% of practitioner income is from co-payments	Capitation with lower co-payments in high need areas/ populations, moving to universal low cost access over time
Services to improve access funding	No automatic access to special funding for additional services	Funding calculated based on number of enrolled individuals who are Maori, Pacific or living in highly deprived areas
Health promotion funding	Health promotion rarely seen as core role for primary care	Needs adjusted per capita funding for health promotion projects/services

co-payments for those populations receiving higher funding.

The funding announced to support the policy is NZ\$ 468 million over 3 years. By the third year (when enrolment is expected to reach approximately 90% of the NZ population), it is projected that NZ\$ 115 million of the new money will go annually towards increased subsidies for primary care physician and practice nurse services. This represents an increase of some 43% over spending on physician and practice nurse subsidies in the 2001/2002 fiscal year. Approximately 53% of the additional funding pays for strategies to reduce health disparities—low cost general practice services for access PHO enrollees, services to improve access

project funding, and health promotion. The remainder funds PHO infrastructure and additional subsidies for all enrollees.

#### 4.3. Capitation formula for 'first contact' services

Table 2 shows how the formulae rates for first contact services were constructed. First contact services refers to office-based primary care services usually provided by general practitioners and practice nurses.

The interim formula leaves the average fee for service per capita subsidy amounts essentially unchanged in aggregate, but pays the amount regardless of the actual number of visits. This frees up providers to use

Table 2  
Capitation formula elements

Elements	Interim formula <sup>a</sup> (other populations)	Access formula (high need populations)
Demographic characteristics	Age gender community services card (CSC)	Age gender
Per consultation subsidy	NZ\$ 35 children < 6 NZ\$ 20 CSC holders 6–17 NZ\$ 15 non-CSC holders 6–17; and adults eligible for CSC NZ\$ 0 adults without CSC	NZ\$ 35 children under six NZ\$ 25 all others
Utilization	Average historical	Average historical CSC (<18); average historical CSC/non-CSC (18+)
Need and demand factors	None	Anticipated elasticity of demand
Inflation adjuster	CPI	CPI

<sup>a</sup> Since October 2003, the interim formula has been adjusted to enable low cost access to 6–17-year-old such that the per consultation subsidy is NZ\$ 25 for both CSC and non-CSC.

non-medical staff more flexibly, and to explore the use of telephone and email consultations. However, in the period under study, it did not change the relatively high co-payments charged in NZ and the associated impact on access. Subsequently, as noted above, the government has extended subsidies to those aged under 18 and over 65.

On average, an access practice receives 60% more government income than the same practice would under the interim formula. In return, the PHO contract places constraints on the co-payments that may be charged by access practices. Co-payments for adults moving from an interim to an access funded practice typically reduce from NZ\$ 40 to 15 per visit for previously unsubsidized adults, and from NZ\$ 25 to 15 for previously subsidized adults.

#### 4.3.1. Casual visits

Enrolled patients may use a primary care provider outside the PHO network. If they do so, and their visit is eligible for a government subsidy, then the cost of paying the subsidy to the casual provider is automatically deducted from the next capitation payment to the PHO where the individual is enrolled.

#### 4.3.2. Drug co-payments

From 1 April 2004, all people enrolled with access PHOs as well as all 6–17-year-old enrolled with interim PHOs will be required to pay no more than NZ\$ 3 co-payment per item for prescription drugs on the national pharmaceutical schedule. This same benefit will accrue to all enrolled persons over 65 from 1 July 2004. Previously the maximum co-payment was NZ\$ 15 per item.

#### 4.3.3. Performance indicators

At present, the Ministry of Health and District Health Boards are collaborating with the primary care sector to develop performance indicators based on improvements in clinical care, referred services expenditures, access and information collection. In 2004/2005, it is expected that PHOs will begin to receive performance payments based on these indicators. Utilization reporting is already required to be differentiated on the basis of ethnicity and deprivation [24], and PHOs will be required to separately report performance against most quality indicators by

ethnicity and deprivation. Such reporting will make it easier to track the impact of the policy on inequalities.

#### 4.4. Services to improve access

A further funding stream aimed at deprived populations is referred to as “services to improve access” funding. A premium of 20% of the base capitation rate is calculated for every individual living in a most deprived quintile census area, and a further 20% premium is added for every self-identified Maori or Pacific enrollee. The amounts are cumulative; hence a Maori enrollee living in a deprived area would generate a 40% premium. The premium is paid to the PHO subject to an approved plan describing the additional services that will be provided with the extra funding. Both access and interim funded PHOs receive this funding. Examples of services being provided with this funding include free nursing visits, suitcase clinics in deprived areas, disease management programs, sexual health services, community health workers performing targeted outreach, and school-based clinics.

The services to improve access funding differs from “access formula” funding in two ways. First, it is available to all PHOs, in amounts determined by the number of qualifying individuals on their register. Hence, it is equitably allocated across the deprived population. Second, it is not intended to pay for low cost access to medical services, but rather to pay for (usually) supplementary non-medical services not uniformly provided by primary healthcare services, such as community health workers, well clinics, mobile nursing and so on. It provides resources to support PHOs in meeting the contractual requirement that they work with those groups with high health needs and or poor access.

#### 4.5. Health promotion services

The other new funding stream for PHO services is for health promotion services. On average, PHOs receive NZ\$ 2.00 per person per year on top of the base capitation rate (i.e. about an additional 2%). This funding is needs adjusted using the same weights described above for Services to Improve access. The funding is to resource PHOs to engage in population-based health promotion services, including addressing structural determinants of health through community and

in local policy action. Examples of funded health promotion initiatives include community-wide smoking cessation campaigns, teen suicide awareness, physical activity promotion and nutrition awareness to promote cardiovascular health.

In the process of developing health promotion activities, PHOs are required to consult with public health authorities to draw upon their expertise and to ensure the funds are used efficiently. Many health promotion activities are conducted jointly with regional public health entities and/or with other PHOs.

#### 4.6. Organizational minimum requirements

A ministerial document Minimum Requirements for Primary Health Care Organisations [25] sets out the minimum requirements that PHOs must meet to receive the new capitation funding. These specify the essential set of services that must be provided and mandatory PHO governance elements.

The essential services include providing (or arranging the provision of) comprehensive ambulatory medical care 24h a day 7 days a week for enrolled members. Other important features include a requirement to coordinate services for individuals, to provide health promotion as well as treatment services, and a focus on unmet need:

“2. PHOs will be required to work with those groups in their populations (for example, Maori, Pacific and lower income groups) that have poor health or are missing out on services to address their needs.”

PHO governance rules include a requirement that PHOs be “not-for-profit bodies with full and open accountability for the use of public funds and the quality and effectiveness of services”, and that:

“7. PHOs must demonstrate that their communities, iwi<sup>1</sup> and consumers are involved in their governing processes and that the PHO is responsive to its community”

The policy requirement is given effect by inclusion in the standard PHO contract, which sets out the terms and conditions under which PHOs are paid.

<sup>1</sup> Iwi is a Maori word meaning tribe. In this context, the word implies that PHOs must demonstrate local Maori involvement in governance.

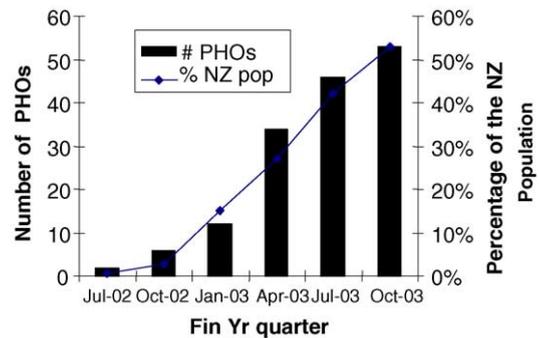


Fig. 1. PHO and PHO enrollment growth.

#### 4.7. Uptake and characteristics of PHOs

Fig. 1 shows the rise in enrolled population per quarter since 02 July on one axis (expressed as a percentage of the NZ population) and the number of PHOs on the other. Growth in total PHO enrolment is tracking 15–20% ahead of initial projections. Enrolment in access PHOs is almost double initial projections. This has been driven by interest and willingness on the part of providers to offer reduced costs services (and receive higher funding levels) as well as policy changes that have encouraged this growth. The policy changes include: (1) allowing all providers in whole districts to receive access level funding if the population characteristics of the district meet access thresholds; and (2) allowing access formula funding to apply at a practice level. This latter change has meant that some PHOs have both access and interim funded practices.

As at the October 2003 quarter<sup>2</sup>, more than one-half of New Zealanders (2.1 million) were enrolled with PHOs and of that number, almost 1 million (or 47% of the enrolled population) were enrolled with access PHOs or access-funded practices. Of the 53 PHOs in existence, there were 33 access PHOs, 7 interim PHOs, and 13 ‘mixed’ PHOs (containing both access and interim practices). With a few exceptions, access PHOs have relatively low levels of total enrolment (averaging just under 20,000, whereas the overall average is 40,000) and tend to be more community-focused. Interim PHOs are generally much larger and typically are independent practitioner associations (IPAs) that

<sup>2</sup> The enrolled population as at the April 2004 quarter was 3.17 million New Zealanders (78% of the total population) in 68 PHOs.

have evolved into PHOs. With two exceptions, mixed PHOs have majority interim-funded practices.

The presence of the access formula created major incentives for the initial development of PHOs with sufficient deprived, Maori or Pacific enrollees to qualify for the higher subsidies. More recently, the higher universal subsidies for the under 18 age group provided incentives for the development of PHOs not eligible for access funding.

## 5. Potential impact on disparities

To assess the potential impact on disparities, we consider first whether the policy delivers improved access to care and secondly whether improved access to care will deliver health outcome benefits for ethnic minorities and those living in deprived areas. Finally, we review the likely impact of the non-financial aspects of the policy.

### 5.1. Does the policy deliver improved access to care to vulnerable groups?

Table 3 below indicates that 40% of the 994,173 people receiving subsidized care under the new policy (i.e. 400,000 people—10% of the New Zealand population) would not previously have been subsidized for the cost of primary care office visits. Of this number, some 135,000 are in the vulnerable Maori and Pacific ethnic groups, and around 52,000 are not Maori or Pacific, but live in the most deprived 20% of areas in NZ (deprivation deciles 9 and 10). This is evidence of improved low cost access for these vul-

nerable groups. Particularly notable is that 34% of the Pacific population now enrolled in low cost access PHOs did not previously receive subsidised care. It is also worth noting that although 60% of access PHO enrollees were subsidized under the previous policy, the subsidy amount is now between 25 and 66% greater.

Table 4 below displays PHO capitation payments per person by ethnicity. The per person payment to PHOs on behalf of Maori and Pacific enrollees is more than 70% greater than the per person amount for other ethnicities. When reviewing this table, readers should note that it does not show differences in individual entitlements—Maori and Pacific people do not receive greater individual subsidies than other ethnicities. The difference results from the combined effect of having a greater proportion of the Maori and Pacific populations enrolled in access PHOs, the younger age profile of the Maori and Pacific population and the need weightings used in the funding for services to improve access and health promotion. It clearly demonstrates that the design features incorporated in the new policy are directing funding towards deprived minorities (Table 5).

### 5.2. Equity and efficiency implications of the access formula approach

The access formula is available or not based on the aggregate enrollment profile for a PHO or practice. Inequities occur because the minority of more deprived individuals in a practice or PHO without a majority deprived population do not receive the additional access funding and do not enjoy low cost access unless they

Table 3  
Access<sup>a</sup> PHOs/practices enrolled population by previous subsidy status at 30 September 2003

Ethnicity	Total enrolled	Total Enrolled (%)		
		Previously subsidised (all deciles)	Not previously subsidised (all deciles)	Not previously subsidised (living in the most deprived 20% of areas)
Maori	268,250	73	27	13
Pacific	180,264	66	34	21
Other	545,659	52	48	10
Total	994,173	60	40	13

<sup>a</sup> All access enrollees receive 'low cost' access; generally, this means free care for under 6, approximately NZ\$ 10 or less for 6–17, less than NZ\$ 20 for 18 and over.

Table 4  
Annualised PHO capitation payments by enrollee ethnicity (as at 30 September 2003)

Ethnicity	Mean per person amount (NZ\$)	Enrolled population	Total expenditures (in millions (NZ\$))
Maori	146.07	339,677	49.62
Pacific	149.60	217,995	32.61
Other	83.63	1,560,661	130.52

qualify under the previous policy rules. As at October 2003, 200,000 vulnerable individuals (Maori, Pacific, or deprivation deciles 9 and 10) were enrolled in interim PHOs and did not have access to low cost care unless they qualified under the previous, less generous, targeted schemes.

In some areas, individuals disadvantaged by this may have the choice of moving providers and joining an access funded PHO, but in other areas (including much of the South Island) this option will not exist because no PHOs have 50% or more of their population living in the two most deprived decile areas, or being Maori or Pacific. Further, it may not be desirable to encourage people to switch clinical providers (with corresponding loss of continuity of care) in order to access higher subsidies.

Efficiency issues arise from the same characteristics of the targeting mechanism; high income individuals who happen to enroll at a PHO that has a majority deprived population receive highly subsidized care.

The issues are quantified in Fig. 2, showing that 41% of the recipients of the access formula are not in the high priority target groups—i.e. they are not Maori, or Pacific, nor do they live in the areas containing the most deprived 20% of the population. Since many of these individuals can already afford to ac-

cess health care, and are not in a high priority group for additional funding, the amount spent on providing them with low cost access is unlikely to result in major health gains, or to reduce health disparities. This is an allocative efficiency issue; the funding being used to subsidize these low priority groups could have been allocated to extend subsidies for high priority groups. A different allocation of the same funds might have achieved the policy objectives of improved health and reduced disparities more efficiently.

The inherent issues with the access/interim formula approach are transitional to the extent that the government continues with its announced intention to provide access level funding to all enrolled populations over time. The government has already funded higher subsidies for those aged under 18 (from October 2003), and for those aged 65+, from July 2004. A further rollout of subsidies will occur in 2004, when higher subsidies for those with chronic illness take effect.

### 5.3. Will equity and efficiency issues bring back income-related subsidies?

The allocative efficiency issue could be addressed by reintroducing differential fees-based upon income. However, this risks reintroducing bureaucratic, cultural or other barriers to very low cost care. Despite the current government's announced intention of phasing out Community Service Cards (the current targeting mechanism) there will continue to be trade offs between the amount of the available subsidies, and the number of individuals who qualify for subsidies. A risk with the emphasis on universal entitlement is that new funding will be used to extend subsidies to more (generally less needy) individuals rather than to raise subsidy levels for the most highly deprived populations, for whom the new NZ\$ 10–20 adult co-payments may still constitute a major bar-

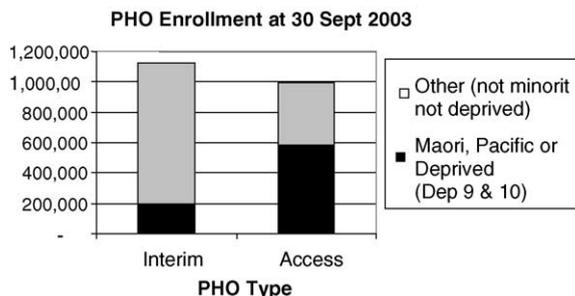


Fig. 2. PHO enrollment by type of PHO and characteristics of enrollees.

rier to access. The Rand Health Insurance Experiment found that even small co-payments were a barrier to care for people from poor socioeconomic backgrounds with quite severe symptoms [26].

This risk can already be seen emerging, with the announcement late in 2003, that low cost access to primary care was being extended to all individuals aged over 65 with effect from July 2004—some years earlier than previously signaled. At the same time, a network of PHOs with a long history of serving the most deprived populations, advised the government that the access PHO subsidies were insufficient for their network of providers because their patients could not afford the standard NZ\$ 15 co-payments, and because their enrolment numbers had dropped under the new enrolment business rules.

A direct comparison between the previous (and still coexisting) individual targeting regime and the new population-based targeting regime is misleading, given the considerable additional funding in the new regime. However, it is interesting to speculate on other ways in which the additional funding could have been used to improve access. Fees payable by those with Community Service Cards could have been lowered—though this would not have helped the significant number of people who are eligible but do not apply for these cards. The universal higher subsidy for children under six could have been made available for all children and adolescents. This would particularly benefit the Pacific and Maori population who have a much lower median age than other ethnicities, but would also have subsidized children of high income families, and would not have addressed the financial barriers for adults with high health needs and low incomes. Every targeting regime has inherent inefficiencies—the aim here is to understand some of the tradeoffs and implications of the regime chosen.

Given a fixed budget for primary care subsidies, the tension between the goals of universal low cost access and very low cost access for the most deprived populations is not likely to be resolved in the medium term. It is implicit in the primary care policy stated twin goals of both improving health for all and reducing health inequalities. The funding formulae represent a compromise between the two goals, with significant mechanisms to reduce disparities built into the framework of business rules and funding arrangements.

#### 5.4. Will improved access reduce health disparities?

It is clear from previous research that lowering the cost of care is likely to lead to increased use of services. This has been demonstrated for a general population in the RAND insurance experiments in the US [27], and also in New Zealand where studies have consistently shown that low income families go without needed care because of cost barriers [28,29]. Further, many commentators have argued that access to care is an important component in the elimination of socioeconomic disparities in health [9,30]. However, there are a number of reasons why the policy may reduce financial barriers to care for vulnerable populations, but fail to improve inequalities overall.

One such reason is that a policy may improve health outcomes for all groups, but by improving health outcomes for the comparatively well off, also increase health disparities. Table 3 above shows that other ethnic groups who are not living in a very deprived area have had numerically the greatest increase in access to subsidies to date (48% of 545,649, less 10% of 545,649 = 207,346 individuals). There is a risk that the greatest subsidy and health benefits may be captured by the more middle class populations. Capture might occur if the more literate, higher income groups dominate community representation at the PHO governance level. In this way, the voice of high needs groups may go unheard when decisions are made about what programs to set up with PHO discretionary funding.

Another policy risk is that higher income groups will gravitate toward the lower cost access funded practices (up to the proportion allowable under the formula) to take advantage of higher subsidies and will consume health resources that might otherwise be used to improve access for higher need individuals.

The impact of increased access on health disparities will be mediated by the nature of the health disparities and the extent to which they are treatable by medical means. Research on ethnic disparities in New Zealand shows that chronic conditions (cardiovascular disease, diabetes and chronic obstructive respiratory disease) account for a large portion of the difference in health outcomes for the Maori and Pacific ethnic minorities [31]. A minimum, but not sufficient, requirement for adequate treatment of these conditions is access to medical services. In this respect, the low cost access policy is likely to bear health dividends, provided that

the co-payments now faced by low income adults with these conditions is sufficiently low to remove barriers to access.

The funding of supplementary, usually non-medical, services to improve access also provides opportunities to improve management of chronic care through funding for team-based care models, such as the improving chronic illness care approach, which may lead to improved outcomes through increased use of team work, self management, and organized care systems [32]. Homegrown versions of the chronic care model may emerge from the Maori–mainstream partnerships induced by the primary care strategy.

Notwithstanding these potential positive impacts, assumptions that improved access to care will automatically lead to improved health outcomes should be treated with some caution. While the evidence for the impact of ethnicity and deprivation on health outcomes is fairly clear, the evidence for the impact of access to primary health care on disparities is mixed [30,33].

### 5.5. *Impact of capitation*

Caution should also be exercised in presuming benefits from the shift from fee for service to capitation. Only the government subsidy is paid by capitation. Even in access funded practices fee for service co-payments constitute a significant proportion of total income. Hence, remuneration is on a blended payment basis [34], which may have the potential to ameliorate the worst features of both capitation (underservicing, low productivity) and fee for service (over servicing, resistance to alternatives to traditional medical encounters). GPs may seek to maximize the fee for service portion of their income, since it is the part most directly influenced by their actions, and hence may not embrace alternatives to traditional medical encounters such as more use of allied health professionals and telephone/email consults. Since the practice nurse subsidy, which was previously paid subject to proof of employment of nurses, is now part of the overall capitation amount, there is a risk that employment of nurses may decline as GPs seek to reduce their costs—the opposite result to that sought by capitation. These risks are balanced by the GP's need to remain available to their patients to avoid them going elsewhere. Provided the capitation portion of total income remains high (or increases), and provided that ways are found to charge

for them, alternatives to traditional medical consults are likely to expand rather than contract in the new environment.

### 5.6. *The impact of population health promotion funding*

Possibly more important in the longer term than better access to primary care, is the conclusion from the research on disparities mentioned above [31] that the key modifiable risk factors that are associated with inequalities in New Zealand are, in order of importance: smoking, diabetes, physical activity, obesity and hypertension. A number of these are likely to be more amenable to population health promotion approaches than to medical treatment. Hence, the health promotion funding, though small in per capita terms, may provide significant leverage to lower smoking rates, increase physical activity and improve nutrition in deprived populations.

Structural determinants of health include poverty, overcrowding and unemployment. Intermediate, lifestyle factors that influence health inequalities include higher smoking rates, obesity, low physical activity participation rates, poorer health literacy [35], and teenage pregnancy. While most of the structural determinants of health are likely to be less amenable to local alteration, smoking rates, housing conditions and physical activity in particular may be modifiable using community development and public health paradigms to affect local public policy, and lifestyles. PHOs may resource programs of this nature with this new funding stream, and through direct interaction with local authorities and communities, as well as resourcing more traditional health education services. Such interventions will need to be targeted to both ethnic minorities, and to deprived areas [36] to affect the most at risk populations.

### 5.7. *Implications of governance and organizational requirements*

Mandated community involvement in PHO governance is intended to achieve a primary care service that is “responsive to communities’ priorities and needs” [25]. The extent and form of community involvement required is not defined in the minimum requirements document, hence the implementation and impact of

the policy varies across PHOs. The requirement can be seen as having two aims: first, to engage primary care professionals in community-based initiatives to improve health (for instance by tackling local alcohol and drug, gambling, physical activity or traffic hazard issues). Second to promote responsiveness in terms of the location and type of services delivered in local neighbourhoods.

To an extent, the requirement for community input to governance creates a tension between medical aspirations and community aspirations. It may be unrealistic to expect a large shift to result from this partial community governance. It is likely that doctors will continue to hold most of the power in the relationship; they have greater health knowledge than laymen, they usually own the vital service delivery infrastructure, and they are the point of enrolment to the PHO. If a primary care practice becomes unhappy with PHO governance decisions on the use of available resources, and decides to switch from one PHO to another, they will generally take their patients with them.

Over time, PHO models where the PHO employs doctors, rather than subcontracting to them, may spread, as new doctors avoid investing capital in practice ownership. In these organizational forms there may be less medical dominance over decision making.

The requirement that PHOs provide comprehensive medical care has the effect of targeting the strategy at providers with a certain critical mass of enrollees, organizational sophistication and human resources. Maori community organizations, which often provide nursing only services, have pointed out that the stipulation prevents them accessing PHO funding for their populations [37]. One result of this policy is that Maori organizations have, in many cases, joined forces with other entities (including mainstream IPAs) to create PHOs. For example, the Kapiti PHO governance board includes representatives appointed by local Iwi, local community and local medical practitioners. Administration functions are subcontracted to a local IPA.

Pressure on IPAs to achieve such alliances also exists, since they must meet requirement two: working with groups that have poor health, and requirement seven: iwi (Maori tribal) involvement in governing processes. The governance requirements on PHOs are a significant shift from previous IPA gover-

nance arrangements, which have been generally doctor owned and governed organizations, and whose members have often been motivated by a desire to have a stronger contracting position with purchasers [18].

It is too early to say what the impact of these governance arrangements will be on Maori health. However, the rule gives Maori organizations the potential to influence the use of many millions of primary health care dollars; an influence they did not enjoy previously. On the other hand, Maori organizations risk being marginalized in mainstream organizations; unable to influence mainstream provision, and starved of targeted funding to allow them to grow to provide 24 h medical services independently.

### 5.8. Risks and obstacles

Whether PHOs will have the population health competencies to design and implement interventions effectively targeting the most at risk groups is not yet clear. While many high need persons are enrolled with access PHOs that have historically served high need communities, at least an equal number are enrolled with access PHOs or interim PHOs that do not have such experience. A danger is that the funding provided to PHOs to address inequalities may be diverted to serve the interests of the majority of PHO members, or to increase the income of provider groups. The monitoring functions provided by District Health Boards may mitigate these risks. Similarly, the PHO governance requirements, including the development of a Maori Health Plan and the involvement of iwi and community in governance, may act to ameliorate the danger of provider or middle class capture of funds appropriated to address inequalities.

Another risk relates to the size of the PHOs. Access PHOs tend to be less than half the average PHO size—under 20,000 versus 40,000 enrollees. While smaller PHOs may have more of a community focus, it is not clear that they will have the expertise to design and deliver disease management or health promotion programmes that could have the most benefit for high need enrollees. Indeed, because of their size, they may be focusing on short term issues related to financial viability rather than targeted service development for some time.

### 5.9. Limitations

A key limitation of this research is that only half the New Zealand population was enrolled in PHOs at the time the data were extracted. The specific proportions of who gains from the new policy will change as additional people enroll, though the overall pattern of access is unlikely to alter.

## 6. Conclusions

### 6.1. Impact summary

Table 5 summarizes the elements of the policy that could be expected to impact on health disparities.

However, there are a number of countervailing factors that may curb the effect on health disparities:

- the fact that many middle class people also benefit from the strategy and may absorb a disproportionate amount of the additional funding for limited health gain;

- whether co-payments are low enough to improve access for the poor;
- whether PHOs use the funds intended to reduce disparities appropriately;
- the inexperience of ‘mainstream’ PHOs in designing and delivering services for high need enrollees; and
- the small size and limited infrastructure of PHOs—particularly access PHOs.

Utilization rates are not yet available for analysis from PHOs. Once they are, research could usefully be conducted on whether utilization of services by vulnerable groups increases in line with the additional subsidies, and whether capitation results in fewer medical and more nursing consultations.

The staggered timing of PHO start ups potentially allows a comparison of ambulatory sensitive hospitalizations over time between areas with early and late PHO developments. Also possible is comparative research on the type and effectiveness of services to improve access funding projects.

Ever since the launch of the Alma Ata Declaration, and more recently Health For All 2000, primary health

Table 5  
Policy elements addressing disparities

Policy element	Potential mechanism for reducing disparities
Lower co-payments	Reduce cost barriers to needed care
Services to improve access project funding	Resources to implement new/additional services targeting high need groups
Needs based health promotion funding	Fund projects aimed at, for example, housing, lifestyle change, risk reduction, and community health initiatives
Capitation	General focus on population health, increased use and scope of nurses and allied health practitioners
Funding to care for medically complex patients	Funding is targeted to those from high need groups who are more likely to have medical complications
PHO obligation to work with and develop plans for groups with poorer health status	Implementation of specific services targeting deprived groups, Maori and Pacific
Community and Maori involvement in PHO governance	Involvement of minority groups in decision making may increase appropriateness and attractiveness of care for disadvantaged groups
Performance indicators (policy element not yet fully developed)	Reward those who are providing effective services to high need individuals

care has been promoted as a powerful means of addressing health inequalities. In many countries, this potential has remained a promise rather than a reality. In the view of the authors, the New Zealand primary care strategy is a bold attempt to redesign the financing and delivery of primary care services, consistent with the principles of the Alma Ata Declaration, that has considerable promise, and that deserves to be watched closely to gauge its effectiveness.

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