Good progress for children coupled with recalcitrant inequalities for adults in New Zealand’s journey towards Universal Health Coverage over the last decade

Don Matheson, Johanna Reidy, Lee Tan, Julia Carr

ABSTRACT

AIMS: This article explores how primary health care policy changes in New Zealand over the last decade have impacted on primary care access equity and avoidable hospital admissions.

METHODS: The national Ambulatory Sensitive Hospitalisations (ASH) data trends by age, ethnicity and area level deprivation were analysed in relation to the Primary Health Care policy initiatives for the period 2002 to 2014.

RESULTS AND CONCLUSIONS: Changes in primary care access over the decade have led to improvement in ASH indicators for parts of the population, but not for others. ASH rates decreased very significantly for children, especially in the 0–4 age group. These trends began in 2004, with decreases most marked for Pacific children, and those from the most deprived neighbourhoods. Inequalities in ASH rates for children between ethnic groups and levels of deprivation have substantially decreased. On the other hand, there has been a significant increase in ASH rates and inequalities for Pacific peoples in the 45 to 64 age group. Māori in the same age band show a modest reduction in ASH rates, with inequalities compared with the rest of the population remaining unchanged. Inequalities in ASH rates between 45–65 year olds living in different levels of deprivation remain large and unchanged, indicative of the recalcitrant nature of inequalities in primary care access for the adult population. Major policy initiatives undertaken by the government during this period have significantly affected primary care access. These include the New Zealand Health Strategy, the Primary Health Care Strategy, the creation of District Health Boards and Primary Health Organisations, and free care to under 6-year-olds. In the latter part of the decade, high-level target setting by successive Ministers is also affecting system performance. We conclude that the success in reducing inequality in access to primary care for children needs to be intensified, and the same principles applied to the adult population groups.

Introduction

This article explores how primary health care policy changes in New Zealand over the last decade have impacted on access equity, through the lens of the primary care interface with secondary care. Enabling access to health care has been a major policy focus in New Zealand for at least 75 years. As part of their attempt to establish the first social security system in the Western world, the first Labour government introduced the Social Security Act 1938 with the intent of enshrining health care as a fundamental right of all New Zealanders, and removing financial access barriers to care. By the year 2000 these goals had not been reached, and the government began a series of reforms with the explicit aim of improving the health...
of the population and addressing health inequalities. Pursuit of access equity has in recent times been given greater prominence on the world stage under the rubric of Universal Health Coverage, with its goal of ensuring that all people obtain the health services they need without suffering financial hardship when paying for them. The detailed understanding of what universal coverage means in practice is currently being debated, and considerable gaps remain in the knowledge base informing its measurement.

One way to gain insight into a health system's performance is to explore the interface between primary care and secondary health care. The New Zealand Ministry of Health conducts a continuous survey of health service utilisation and unmet need for primary care. The hospital system reports on hospital admissions by Diagnostic Related Groups and, from this information, generates reports on ASH, an important indicator of primary care access and effectiveness. In New Zealand ASH measures unplanned admissions that are potentially preventable by appropriate health services delivered in community settings, including through primary care, and hospital ambulatory services such as outpatient and dental services. Ambulatory sensitive hospitalisations are defined as hospitalisations of people less than 75 years old resulting from diseases sensitive to prophylactic or therapeutic interventions that are deliverable in a primary care setting. This specific focus on primary care and ambulatory services, can be contrasted with amenable mortality which is a measure of whole-of-system performance in terms of coverage and quality of health care, and includes ASH. ASH rates provide an indication of access to, and the effectiveness of, primary care, as seen at the interface between the primary and secondary health services. If there is good access to effective primary care, then it is reasonable to expect that ASH will be low, and there will not be big differences in rates between population groups. Consequently, ASH rates are recognised internationally as a useful indicator of a health system's responsiveness to health need and inequity. A narrowing of ASH between populations with high needs and the general population would indicate an improvement in system responsiveness to health need, and an improvement in the health system in addressing health inequalities.

Indicators of primary care access equity in New Zealand’s Health System

New Zealand has a primary care-oriented system, with general practitioners acting as gatekeepers to secondary services. A key principle underpinning New Zealand health policy in the last decade has been the importance of reducing inequalities in health outcomes between populations as a means of improving the overall health of New Zealanders.

However, the priority given to this principle, and the approach to investment and monitoring has varied over the past decade. In 2001, the New Zealand health sector identified the need to address health inequalities as a major priority and between 2001 and 2008 developed policies and programmes to address them. A key policy was the Primary Health Care Strategy which sought to reduce health inequalities by improving access and quality of care for disadvantaged populations with the poorest health. Support for reducing inequalities has been increasing among health service personnel in recent years, culminating in the statement on equity by the New Zealand Medical Association, reflecting wide acceptance by the health sector of equality of health outcomes across all groups as a priority and a value.

New Zealand has four main ethnic groups, people of European (74%), Māori (15%), Asian (12%) and Pacific Island (7%) descent. Note that people may belong to more than one group. Disadvantaged populations and high-needs patients include people from all ethnic groups, but Māori and Pacific Island populations are over-represented. The term ‘Other’ in this analysis is used to describe the non-Māori, non-Pacific population, as in addition to those of European ancestry, this category includes many ethnicities, including Asian populations. Disadvantaged populations are particularly concentrated within some
geographical areas. These populations are identified, for administrative and funding purposes, by the New Zealand Deprivation Index (NZDep), using Census data on income and access to other resources.

This paper uses ASH to explore the relationship between successive governments’ policy approach to access to primary care and trends in access inequalities in the New Zealand health system over time. The validity of ASH admissions as an indicator of primary care access has been analysed previously in the US.

A recent systematic review of ASH studies across several countries confirmed the expected inverse association between accessibility to primary care and the risk of hospitalisation for ASH in most but not all studies. The review also noted the important impact of socio-economic factors to be considered in interpretation of ASH studies, and variations due to types of health systems.

Method

To examine the impact of the policy shifts on access inequalities, data on hospital discharges from 2001/02 to 2013/14 were purchased directly from New Zealand Ministry of Health’s National Minimum Data Set. The data was extracted by Analytical Services, Ministry of Health (MOH), using the same publicly funded hospital discharges with a primary diagnosis (ICD-10-AM-II) as stated in the “ASH Events” list in the MOH workbook.

Accordingly, the same exclusion rules listed below were followed:

- Age at admission >74
- Age at admission <29 days
- DHB of domicile = 999 (overseas and undefined)
- Short stay ED events (specialty code = M05-M08, LOS = 0 or 1 days)
- Palliative care specialty (specialty code = M80 or M81)

Data were analysed by funding year 1 July–30 June. All cases, regardless of Casemix funding, are included as separate analysis of Casemix status by ethnicity and NZDep suggests that there is no noticeable variation by excluding Casemix status. The direct standardisation method was used on age in 5-year groups, using MoH population projections 2001–2025, fitted to WHO standard population distribution. This approach is consistent with the standardisation method used by MoH.

The prioritised ethnicity classification was used as described in the Ministry of Health Ethnicity Data Protocols for the Health and Disability Sector (2004). It should be noted that the analysis for this paper has included the ASH events for all Pacific people, whereas the MOH calculation has been restricted to the Pacific ASH events for the seven DHBs with the highest Pacific populations (namely Auckland, Waitematā, Counties Manukau, Waikato, Capital and Coast, Hutt and Canterbury).

This analysis depends on the accuracy of hospital discharge coding which is considered to be high in New Zealand. The 2014 data may not yet be complete, with some events being reported after the end of the data collection period. Missing data would increase the ASH rates.

The denominator is based on the population projections produced by Statistics New Zealand according to assumptions specified by the Ministry of Health. Note that the MOH uses the Primary Health Organisation (PHO) enrolled population not the Census projected total population. The MoH approach may lead to an over estimate of the Māori population ASH rate, as 12% of Māori were not enrolled in a PHO in 2014. The ASH rate changes over time are also influenced by changes in the PHO enrolment rate when using the MoH method. Māori enrolment has been increasing over this period. This will result in apparent lowering of the ASH rate when the PHO population is used as the denominator.

Because no individuals were affected by this research, and anonymised data was analysed, ethics approval was not sought.

Results

National Age standardised ASH rates 2002 to 2013

The population groups in the study are all people aged 0–74, and the sub-groups of children 0–4 years, children 0–14 years and adults 45–64 years. These years were chosen in the adult population as they are critical years for interventions to address the early...
onset of non-communicable diseases, and to reduce disparities in amenable mortality.\textsuperscript{26,27} The results presented in the graphs have included the 95 percent confidence interval on each ASH rate.

Figure 1 shows the national trends between 2002 and 2014 by ethnicity. This shows increasing inequalities of access for the Pacific population, starting in 2006, when compared to Māori and ‘Other’. The Māori population shows steady improvement since 2010, with inequalities reducing. The ‘Other’ population shows a steady decrease in ASH over the period.

In contrast, Figure 2 shows a very consistent improvement in the 0-4 age group across all populations beginning in 2004. This improvement is most marked for Māori and Pacific populations, leading to a significant decrease in inequalities between these two groups and ‘Other’. Inequalities between Māori and Pacific 0–4 populations remain stable.

The trends observed for the population aged 0–4 are replicated in the 0–14 year age group, but with less intensity. Figure 3 shows improvement since 2004, across the three ethnic groups. The reduction in inequalities remains significant, however it is not as marked as in the younger age group.

These positive trends in children were not reflected when selected groups within the adult population were examined. Figure 4 shows significant deterioration in ASH rates for Pacific peoples aged 45 to 64, from 2003 onwards. Over the same period, there was a modest reduction in ASH for Māori. ASH inequalities increased significantly for
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**Figure 3:** National ASH Trends by ethnicity for 0–14 years

Source: The ASH rates are calculated from the Ministry of Health’s data collection for hospital discharges (NMDS data).

**Figure 4:** National ASH Trends by ethnicity for 45–64 years

Source: The ASH rates are calculated from the Ministry of Health’s data collection for hospital discharges (NMDS data).

**Figure 5:** National ASH Trends by Deprivation for 0–74 years old

Source: The ASH rates are calculated from the Ministry of Health’s data collection for hospital discharges (NMDS data).
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**Figure 6:** National ASH Trends by Deprivation for 0–4 years old

![Graph showing ASH trends by deprivation for 0–4 years old]

Source: The ASH rates are calculated from the Ministry of Health’s data collection for hospital discharges (NMDS data).

**Figure 7:** National ASH Trends by Deprivation for 45–64 years old

![Graph showing ASH trends by deprivation for 45–64 years old]

Source: The ASH rates are calculated from the Ministry of Health’s data collection for hospital discharges (NMDS data).

Pacific as compared with the whole population, and remain unchanged over the decade for Māori when compared with the ‘Other’ population.

To explore the influence of deprivation, ASH rates were examined with respect to the degree of deprivation of the patients’ area of residence. For the whole population aged 0–74, the improvement in ASH rates was greatest for the most deprived group, with the improvement beginning in 2008. However, a large disparity remains between the most deprived and least deprived groups. The three least deprived groups showed minimal change in the ASH rates over the period.

An exploration of the relationship with deprivation in the different age groups finds a difference in impact between child and adult populations. Figure 6 shows that for the 0–4 age group, children from the most deprived group showed consistent and marked improvement in ASH rates, beginning in 2004, with a marked reduction in ASH inequalities, such that the rates for the two most deprived groups are similar, and both are reducing.

These improvements, which are also seen in the 0–14 age group, are not reflected in the adult population. Figure 7 shows a very modest reduction in ASH inequalities for the 45–64 year age group, with very marked health inequalities remaining between the less deprived and most deprived groups.
Table 1. Key policy initiatives aiming to increase access to primary care and reduce inequalities over the period 2000–2014.

<table>
<thead>
<tr>
<th>Policy Initiative</th>
<th>Year of introduction</th>
<th>Policy intention</th>
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<tbody>
<tr>
<td>The New Zealand Health Strategy2</td>
<td>2000</td>
<td>‘Tackling inequalities’ a particular priority; and timely and equitable access for all New Zealanders, regardless of ability to pay, a key principle. To reduce inequalities: ensure accessible and appropriate services for Māori, Pacific peoples and people from lower socioeconomic groups. Primary health care identified as a priority.</td>
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<tr>
<td>The Primary Health Care Strategy</td>
<td>2001</td>
<td>Identified a strong primary health care system as central to improving health for all New Zealanders and tackling inequalities in health. Establishment of Primary Health Organisations (PHOs), funded on the basis of enrolled populations. Expected to reduce barriers, particularly financial barriers, for the groups with the greatest health need. Substantial funding increase from 2002 for primary care, and introduction of capitation funding. Increased funding, starting with PHOs with &gt;50% Māori, Pacific, low income populations but eventually all PHOs on same funding formula. First contact’ funding formula factors in age/gender but no weighting for ethnicity, deprivation, or unmet need. Smaller amount of additional funding for “Services to Improve Access” (SIA) – some recognition of ethnic and socioeconomic disparities in SIA funding formula. Agreements/monitoring annual increase in patient co-payment over baseline, (but no limit on baseline).</td>
</tr>
<tr>
<td>High User Health Card</td>
<td>1990s</td>
<td>The High User Health Card (HUHC) entitles high users of services to higher subsidies GP consultations. A large number of services (at least 12 consultations in a year) need to have been received/paid for before a patient becomes eligible for a HUHC. Pre-dates PHOs but maintained.</td>
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<tr>
<td>He Korowai Oranga – Māori Health Strategy27</td>
<td>2002</td>
<td>Focus on broader values/ direction to improve Māori health. Whānau Ora concept introduced. Recognised primary health care as crucial to reducing inequalities. Accompanying action plans Whakatātaka, and Whakatātaka Tuarua 2006–2011. DHBs expected to direct resources to areas of greatest need, report to MOH on the prioritisation and allocation of funding, and the effectiveness of services for Māori.</td>
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<tr>
<td>Care Plus33</td>
<td>2003/4</td>
<td>Additional funding to general practices to improve chronic care management, reduce inequalities, and reduce the cost of services for high-need patients. Generally involves a Care Plan and 4 GP and/or nurse visits per year at reduced or no cost. Funding allows for 5% of a PHO population to be Care Plus patients, give or take a small margin, regardless of the number of high needs patients.</td>
</tr>
<tr>
<td>Very Low Cost Access Funding (VLCA)34</td>
<td>2006</td>
<td>Additional funding for general practices willing to limit co-payments. In 2013, this required visits for children under 6 to be free, visits for children 6 to 17 years less than $11.50 and for adults less than $17.50.</td>
</tr>
<tr>
<td>Introduction of targets25</td>
<td>2007</td>
<td>2007 targets emphasised population health objectives, including reducing ASH. In 2009 targets revised with a reduced emphasis on population health and a greater emphasis on hospital services and specialist waiting times. ASH targets were replaced with targets for ED waiting times.</td>
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<tr>
<td>Better Sooner More Convenient (BSMC)38</td>
<td>2009</td>
<td>Focus on ‘integration’ of care, through co-location of general practice and other services in Integrated Family Health Centres, and ‘alliancing’ within DHB areas to improve cross-sector planning. Nine business cases funded. Alliancing concept introduced more broadly.</td>
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<tr>
<td>Whanau Ora39</td>
<td>2010</td>
<td>Broader implementation of Whānau Ora policy and approach. 25 provider collectives comprising around 160 providers of primarily health and social services funded to provide whānau-centred services, and support a Whānau Ora approach.</td>
</tr>
<tr>
<td>Free under 6s40,41</td>
<td>2006, 2008, 2012</td>
<td>Free consultations for under six year olds implemented through Very Low Cost Access scheme – limited to practices/PHOs with &gt;50% high needs population, willing to limit fees to agreed levels. Free standard consultations for children under six implemented more widely through Zero Fees for Under 6s. Increased funding. After hours consultations included.</td>
</tr>
<tr>
<td>Ala Mo'ui: Pathways to Pacific Health and Well-being 2010-2014</td>
<td>2010</td>
<td>Aims for service delivery to Pacific peoples to respect Pacific culture, value family, and provide seamless care. The principles emphasise access, equity, cultural competence, safety, effectiveness, efficiency and patient-centeredness. Emphasis on developing Pacific workforce.</td>
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</table>
Policy initiatives potentially impacting on primary care access over the period

A range of policy initiatives and legislation has been introduced since 2000, aiming to reduce health inequalities, and with implications for primary care service delivery, configuration, access and priorities. Table 1 summarises key policy developments directed at improving access to primary care and reducing disparities for Māori, Pacific and low income populations.

The policy documents over this period recognised the importance of access to primary care in addressing health inequalities, however the extent of targeted funding to achieve this and accountability for results related to equity varied considerably. The Very Low Cost Access and Zero Fees for Under 6s were very specific in terms of expectations of providers and came with ring-fenced funding to achieve the policy goal. Other policy initiatives, like Care Plus, were less clearly defined in terms of the populations expected to benefit from the additional funding attached.

Discussion

The relationship between specific policies and changes in access in the busy policy milieu described in Table 1 is inevitably one of association rather than causal. However the divergent ASH rates for children compared with those for Pacific adults is striking. On the one hand, the relative inequalities in access for children were very significantly reduced, on the other hand, in the same health system and in the same general practices, inequalities in access for Pacific adults significantly increased. The policies dealt with these two populations differently. While they shared the same policy intent, the funding incentives and accountability for results diverged significantly.

The positive trend for Māori and Pacific children and those living in the most deprived areas began in 2003, around the time that the Primary Health Care Strategy implementation started to gain traction, and has continued unabated since then.

Successive policy initiatives, particularly Very Low Cost Access, Zero Fees for Under 6s and free after-hours care, are likely to have strengthened this trend, and with the imminent introduction of free care to those under 13, this trend should continue. The Minister’s targeting regime also impacted on children, with a focus on immunisation coverage. Māori ASH rates for children improved faster than Pacific rates. This difference in children, and the slight improvement in ASH for Māori as a whole, may be due to Māori-specific policy initiatives, the growth of Māori providers and active monitoring of investment and results for Māori at national, DHB and PHO levels over this period.

While inequalities were reducing in children, inequalities in the adult population remained relatively unchanged for Māori and increased for the Pacific population. This negative trend for Pacific adults began between 2003 and 2005. The policies, as they affect the adult population, did not eliminate the financial barriers to care, and the dropping of ASH as a Ministerial target would have weakened the accountability focus of DHBs on access barriers for adults later in the decade. ASH as an indicator is influenced by primary care effectiveness, but also co-morbidities, environmental and social factors. Changes that occurred during this period in the wider social determinants of health will also have impacted on ASH for these groups. The employment rate, the median weekly income, housing affordability and housing overcrowding all showed increasing relative disadvantage for Pacific and Māori populations, with the greatest increase in inequality impacting on Pacific peoples. The environmental and social conditions are unlikely to diverge between adults and children, suggesting the ASH results seen in these populations are primarily due to primary care access changes.

Evidence from the most recent New Zealand Health Survey shows that both affordability and service availability are creating significant unmet need for Māori, Pacific and high deprivation groups. One in four adults (27%) and one in five children (21%) reported unmet need for primary care in the past year. Neighbourhood
deprivation and ethnicity were strongly related to unmet need for primary care. 35% of adults living in the most deprived areas had experienced unmet need in the past year, compared with 23% in the least deprived areas. 48% of Māori women and 37% of Pacific women experienced unmet need during the period. The survey data support the contention that there are real challenges remaining in primary care access, and these go part way to explaining the ASH differences being observed.

The limitations to the use of ASH as an indicator include its reliance on accurate diagnosis, recording and reporting of hospital activity, including domicile and ethnicity information. Changes in any of these dimensions will impact on the ASH rate. In addition, ASH is but one indicator of primary health care system performance. Other indicators such as morbidity, mortality, disability and self-assessed health status also need to be considered to provide a wider context for ASH results. The full breadth and depth of the impact of primary health care services and community-based interventions are not fully reflected in ASH.

The past decade has demonstrated the New Zealand health system has the capability to substantially reduce inequities in primary care access as observed through these changes in ASH. To make further progress, and to reverse the negative trends observed for the Pacific adult population, policy attention will need to focus on both supply and demand barriers to access, as well as ensuring changes in the wider social environment are mediated, and not intensified, as they impact on health and health care access. Future policy in New Zealand to improve access equity should include a focus on the doctor/nurse patient ratio for specific communities. Changes in the wider social conditions can be mediated somewhat by ensuring financial and availability access barriers are reduced when social conditions deteriorate, but the main focus should remain on addressing the social conditions themselves.

In summary, the policy implications of this paper's findings are that reducing cost barriers to primary care works to reduce avoidable hospital admissions; and continued exploration of the remaining access and other barriers for children has potential to eliminate the remaining equity gap. For adults, reducing the price barriers and increasing service availability in deprived areas, and for high-need Māori and Pacific populations is required as a matter of urgency to stem rising health inequalities.

For the health system, collection and analysis of evidence regarding access barriers, followed by timely intervention, is required in order to move towards Universal Health Coverage. Changes in external social conditions need to be met with immediate changes to improve primary care access if health consequences are to be ameliorated.
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Competing interests:
Dr. Matheson reports personal fees from World Health Organisation and personal fees from UNICEF, outside the submitted work; Dr. Carr is a Board member and Clinical Advisor to Ngati Porou Hauora, a Māori primary health care provider. She does not receive remuneration for this work but is sometimes reimbursed for travel to meetings.

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Author information:
Don Matheson, Honorary Research Fellow, Massey University, Wellington, New Zealand; Johanna Reidy, Department of Public Health, Wellington School of Medicine, Otago University; Lee Tan, Contracting Analyst, Wellington; Julia Carr, Senior Lecturer – Primary Health Care, Griffith University School of Medicine, Brisbane, Australia.

Corresponding author:
Don Matheson, Health Systems Consultant, Brisbane, Australia, +61 41 132 6463 d.p.matheson@massey.ac.nz.

URL:

REFERENCES: