

An area-based analysis of general practice fees in Aotearoa New Zealand

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ABSTRACT

Introduction. The pursuit of health care equity is a fundamental objective for Aotearoa New Zealand, and patient co-payments in primary care challenge this goal. **Aim.** This study aimed to investigate the relationship between primary health care co-payments and the sociodemographic variables in areas where general practices provide health care. **Methods.** Using census data, facilities information from the Ministry of Health, and socioeconomic deprivation indices, linear regression models were used to explore the relationship between weighted average fees charged by general practices and various sociodemographic variables in statistical area 2 regions. **Results.** The study finds that areas with higher proportions of males and economically deprived individuals are associated with lower weighted average fees. Conversely, areas with higher proportions of retirement-aged and European individuals are linked with higher weighted average fees. The inclusion of the Very-Low-Cost-Access variable, indicating a subsidy scheme at the general practice level, made all the sociodemographic variables practically insignificant, suggesting Very-Low-Cost-Access practices are in the right geographical location to target high needs groups. **Discussion.** The findings affirm the complexity of health care inequities in Aotearoa New Zealand, influenced not only by financial factors but also by demographic variables as they play out geographically. While subsidy schemes like the Very-Low-Cost-Access scheme appear to reach groups with greater need, a high level of unmet need due to cost suggests that the fees are still too high. Policymakers need to consider disparities in the on-going health care reforms and make further changes to subsidy schemes to reduce unmet need.

Keywords: Aotearoa New Zealand, barriers to healthcare access, consultation fees, equity, primary health care.

Introduction

Equity in health stands as a central goal for Aotearoa New Zealand (NZ).¹ NZ aims to ensure that all are able to access health care services when they need it, which implies that this is irrespective of their socioeconomic position and regardless of their ability to pay.²

Out-of-pocket payments in health care, also called user fees or co-payments, are a controversial matter.^{3,4} On the one hand, they serve to recover costs and to deter unnecessary use of services. On the other hand, they also impede people's access to needed services when that cost is too high. In addition, collecting fees adds an administrative and financial burden, especially when payment is delayed. In relation to equity in particular, there is the concern that it will be people with lower ability to pay and with higher health needs who will be most negatively affected by user fees, which goes against the objective of the Primary Health Care Strategy.^{1,2,5} For example, in the NZ Health Survey (NZHS) 2022–23, 12.9% of people aged 15+ years had an unmet need for a general practitioner (GP) visit due to cost in the previous year but this rose to 17.1% for the most deprived quintile, 16.9% for Māori, 17.6% for Pacific peoples and 21.4% for people with disability.⁶ Financial barriers to accessing timely health care are among the

WHAT GAP THIS FILLS

What is already known: Aotearoa New Zealand prioritises the pursuit of health care equity as a central objective. The existence of patient co-payments in primary care poses obstacles to achieving this goal. To address these challenges, the government has implemented various schemes aimed at alleviating them.

What this study adds: The sociodemographic characteristics of people in the areas where general practices are located are related to the amount charged for an appointment with a general practitioner. The strongest relationships are seen across ethnicity and socioeconomic deprivation levels with lower fees being associated with higher proportions of Māori and Pacific peoples in that area and among people who are more socioeconomically deprived. The Very-Low-Cost-Access scheme appears to reduce these associations indicating that general practices operating under the scheme appear to reach groups with greater need.

most critical barriers to care, but the good news is that they are amenable to policy-driven changes.⁷

Primary care fees are particularly detrimental to health equity as general practices often act as the entry door to the health care system. In NZ, general practices are responsible to the people they enrol for providing essential care, coordinating patient information and managing follow-ups for chronic conditions and post-hospitalisation care. Primary care operates through a mixed model of government capitation funding and patient co-payments.⁸ Past efforts to completely remove these fees have regularly failed, making co-payments and private ownership of general practice the topic of ongoing debate, and are often referred to as ‘the elephant in the room’, ie essential features of the NZ health care system that are, at times, overlooked in policy debates.^{9–12} The funding mechanisms for primary care are intricate and form a topic of international debate. Similar discussions occur in other countries with comparable mixed financing models such as Australia, Canada and the UK.^{3,4,13–16}

To address these challenges, NZ has implemented schemes like the Very-Low-Cost-Access scheme (VLCA) at the general practice level, and the Community Services Card (CSC) and the High Use Health Card (HUHC) schemes at the patient level, with an aim to provide more affordable care to populations with greater health needs and/or lower ability to pay. However, questions remain regarding the efficacy of these initiatives in making equal access a reality.

Another dimension of health care inequity is geographic disparity, commonly referred to as the ‘postcode lottery’.^{17–20} In NZ, the ‘postcode lottery’ refers to regional variations in health care accessibility and outcomes, influenced by factors such as proximity to medical facilities,

availability of specialised services and diverse socioeconomic conditions. These disparities pose challenges in both rural and urban locales.

In light of these sources of health care inequities, this paper explores the research question: What is the relationship between primary care co-payments and sociodemographic characteristics of populations in different geographic locations in New Zealand? The purpose is to examine the sociodemographic characteristics of people in the area where a general practice is located, and investigate how these factors are associated with consultation fees, with a view to understanding how these elements contribute to health care inequities.

Methods

Statistics New Zealand reports census information by a range of geographical areas. These areas range from the small scale, such as statistical area 1, to the large scale, such as District Health Board areas. In this analysis, the areas under investigation were statistical area 2 (SA2), specifically SA2s from 2018 to match outputs from the 2018 census. Statistics New Zealand describes an SA2 as an area that tries ‘to reflect communities that interact together socially and economically’.²¹

Data

GP fees by practice

A database supplied by the Ministry of Health (MoH) that gives funding schemes and consultation fees for each general practice as reported on 1 June 2022. Fees were reported in age bands for CSC holders and for those without. CSCs provide lower income families with lower and capped out-of-pocket payments with general practices receiving a higher weighted capitation payment as recompense. Youth services that do not generally see patients aged >24 years and practices associated with residential care are not included in the analysis.

Facility code table

A database of locations (DHB, longitude/latitude, mesh-block and address) of medical facilities for the September quarter, 2022.²² A meshblock is a smaller statistical area that has been superseded at Statistics New Zealand, usually enclosed by a larger SA2.

Statistical area 1 dataset for 2018 Census

A database that contains confidentialised count data from the 2018 census based on geographic areas, including counts at the SA2 level.²³

Socioeconomic deprivation indexes 2018 SA2 data

A database that contained NZDep scores and indices based on data from the 2018 NZ census at the SA2 level.²⁴

NZDep is an area-based measure of socioeconomic deprivation based on the combined responses to census questions from people living in an area and assigned to individuals according to their residential address.

Matching

The GP Fees by Practice database was matched to the Facilities database by Facility ID. The meshblock information in the Facilities database was based on the 2013 meshblock standard. The 2013 meshblock was converted into the 2018 meshblock standard using the StatsNZ concordance database and the results were then mapped to 2018 SA2s.²⁵ At any stage, if there was missing location data or multiple matches, Google Maps and the StatsNZ Geographic Data Service were used to identify the location of the general practice and the correct statistical area.²¹

If the usual resident population in the SA2 where a general practice resided was less than 200 people, the nearest SA2 was substituted. This happened when the original SA2 was primarily a business or industrial area, and it was thought that the resident population was less likely to represent the patient population of the general practice. In one case, the second nearest SA2 was substituted because the nearest SA2 was also a business district. The residential population in the SA2s used ranged from 204 to 5202 with a median of 2550.

Variables

Weighted average fees (WAFs)

The GP Fees by Practice database contained fees, by CSC and non-CSC schemes, specified in age bands for adults, aged 18–24, 25–44, 45–64 and 65+ years. To create a summary statistic for adults aged 18+ years, the bands were weighted by population size and summed to give a weighted average value. For this analysis, the non-CSC fees were analysed.

Very-Low-Cost-Access practices

The variable VLCA was an indicator factor identifying a VLCA practice. VLCA practices are ones whose enrolled patients are at least 50% Māori, Pacific peoples or people living in the most deprived quintile of NZDep, and which chose to receive higher capitation funding in return for capped co-payments from patients.

Variables from the census were based on counts of the usual resident population of each SA2. These were (1) sex; (2) age group – census age groups merged into three groups, young adults (aged 15–24 years), working age (aged 25–64 years) and retirement age (aged 65+ years); and (3) ethnicity – total count ethnicity for Europeans, Māori, Pacific people and Asian people.

The remaining variable considered was NZDep. For this analysis, it was put into quintiles with 1 representing the

least socioeconomically deprived areas and 5 the most socioeconomically deprived areas.

Statistical methods

The average WAFs were plotted by DHB districts where the districts are represented in equal size in their approximate locations, ie on hexmaps.²⁶

Counts for the sexes, age groups and ethnicities were kept for the SA2 where each general practice resided. As each SA2 can have different total counts of people, these variables were converted into proportions of the usual resident population of each SA2. They were then ranked into five equal groups (quintiles) according to the value of the proportion. These variables and NZDep quintiles were then plotted against the average of the WAFs using histograms to explore which variables were associated with WAFs in a practice and to check for linearity.

Linear regression analysis was used to look at the association between fees and the quintiles of each of the socio-demographic variables separately. The quintiles were analysed as a continuous variable to see if the relationship with WAFs was linear across quintiles. For model 1, the quintiles were considered the only independent variable. For model 2, the VLCA variable was added.

There were over 1000 general practice facilities in the analysis, which means that there will be results that are statistically significant without being practically significant. From a pragmatic point of view, it was decided that an average difference of \$10 between quintiles 1 and 5, equivalent to a trend of $10/4 = \$2.25$ across the five quintiles, would be considered practically significant. A value of \$10 was considered the lowest amount for which a typical person would be willing to change general practices to get a reduction in fees (currency reported is NZ\$ throughout).

No ethical approval was sought as this was secondary analysis of administrative data reported at the general practice level or confidentialised count data from the census reported at the SA2 level.

Results

Fig. 1 shows that there is considerable variation in average WAFs across DHB districts, with the lowest average fees (\$9.91) in the Tairāwhiti DHB district and the highest in the Canterbury DHB district (\$48.76).

Fig. 2a shows the average of the WAFs for general practice areas that differ in the proportions of males and females that reside in each SA2. From observation, areas where the proportion of males are lowest (quintile 1) have a WAF of just over \$40, while areas where the proportion of males is highest have a WAF of just over \$30. The converse is observed for females. Table 1 shows the results for models 1 and 2. As the proportion of males increases in quintiles,

the WAF decreases, and it is both statistically and practically significant. This may be explained because SA2s with a higher proportion of males are more likely to be the more deprived quintiles.

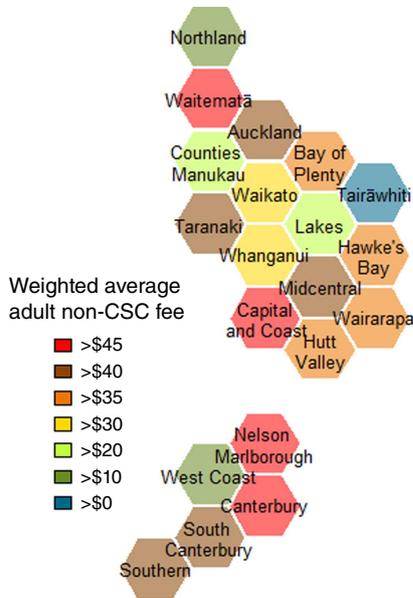


Fig. 1. Average WAFs by DHB districts.

Fig. 2b shows that as the proportion of youth increases in quintiles the average of the WAFs decreases, however this result is not practically significant (see Table 1, model 1). For the working age and retirement age groups, as the proportion of each group increases the average of the WAFs increases, but it is only practically significant for the retirement age group.

As the proportion of Māori and Pacific peoples increases in quintiles the average WAF decreases; a predicted decrease of \$25 and \$21 respectively, from quintile 1 to quintile 5 (see Fig. 2c). For the European group, as the proportions increase in quintiles, the average WAF increases, with a predicted increase of \$20. For the Asian group, there is no clear pattern, although modelling indicated that as the proportion of Asian people increases, there is a slight positive trend in WAF which is not practically significant.

In Fig. 2d, WAFs decrease as the quintiles of NZDep increase, ie as the proportion of people who are more deprived increases. The predicted decrease from category 1 to category 5 is \$28.

When the VLCA variable is added to these models (model 2, Table 1), all trends across quintiles become practically insignificant, ie the VLCA variable is now explaining the variation in fees rather than sex, age group, ethnicity or NZDep. This indicates that VLCA practices, on average, appear to be in the right geographical locations, according

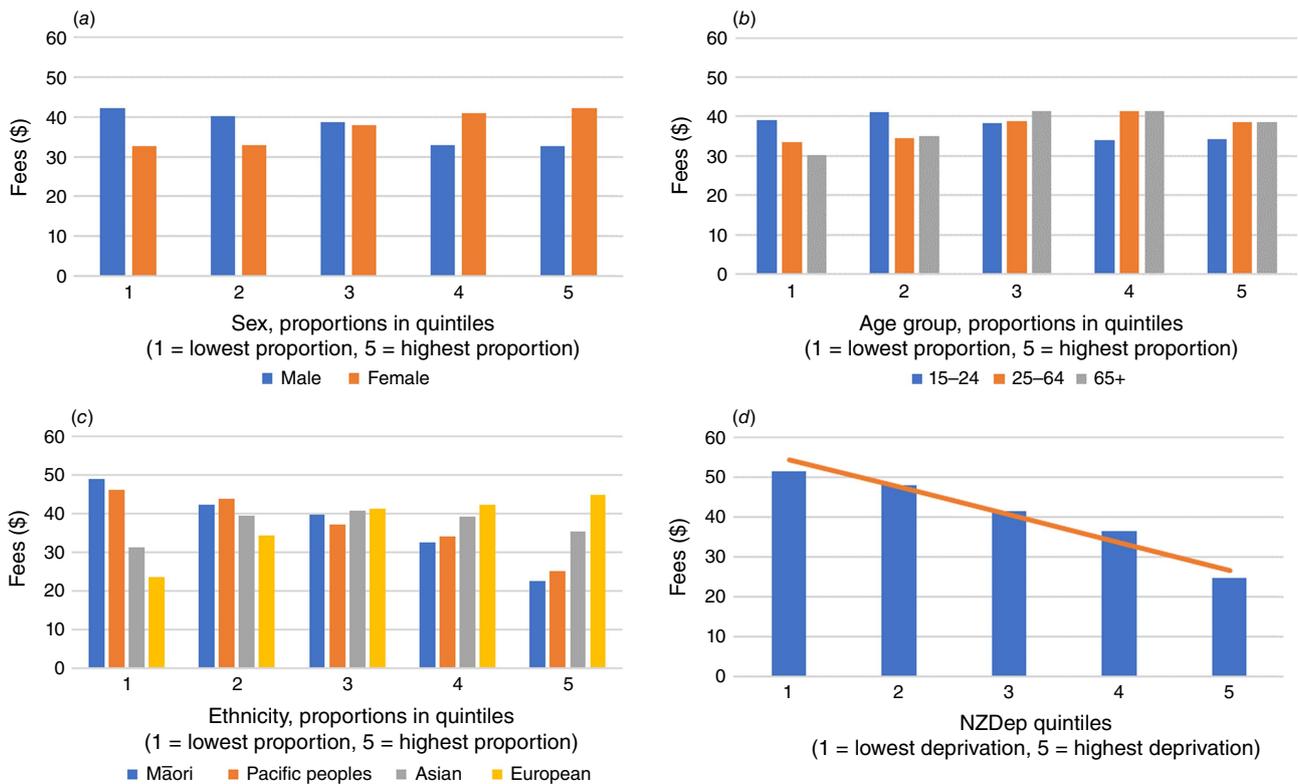


Fig. 2. Weighted average adult non-CSC fees for general practices by quintiles of the proportion of (a) sexes, (b) age groups and (c) total count ethnicities; and d) NZDep quintiles in the SA2 of the general practice. A trend line has been fitted to the fees across the NZDep quintiles.

Table 1. The linear trends in model 1 and model 2 of the quintiles of the proportion of sociodemographic variables for model 1 and 2.

	Model 1		Model 2			
	Trend ^A	P-value	Trend ^A	P-value	VLCA	P-value
Sex						
Male	-2.7	<0.0001	-0.5	0.0014	-31.6	<0.0001
Female	2.8	<0.0001	0.6	0.0006	-31.6	<0.0001
Age group						
Youth	-1.6	<0.0001	0.0	0.8061	-32.0	<0.0001
Working age	1.7	<0.0001	0.6	0.0001	-31.8	<0.0001
Retirement age	2.3	<0.0001	-0.1	0.6111	-32.0	<0.0001
Total count ethnicity						
European	5.0	<0.0001	0.7	0.0002	-31.1	<0.0001
Māori	-6.3	<0.0001	-1.8	<0.0001	-29.5	<0.0001
Pacific peoples	-5.2	<0.0001	-1.0	<0.0001	-30.8	<0.0001
Asian	0.8	0.0353	0.5	0.0014	-31.9	<0.0001
NZDep quintiles	-6.9	<0.0001	-2.2	<0.0001	-29.0	<0.0001

^AThe trend is the gradient in fees across the quintiles for each sociodemographic variable. An example of a trend with a gradient in fees of -\$6.9 across NZDep quintiles appears in [Fig. 2d](#).

to the distributions of these sociodemographic variables, to target groups with greater need. Across all models 2, the average VLCA effect is \$31, ie there is an average reduction in user fees of \$31 in a VLCA general practice compared to a non-VLCA general practice.

Discussion

We wanted to explore the relationship between primary care co-payments and sociodemographic characteristics of populations in different locations in New Zealand. What the analysis shows is that fees charged to patients in general practice are strongly associated with the sociodemographic composition of the area where the practice is located. It also shows that the introduction of the VLCA variable into these models renders all trends practically insignificant. This means that VLCA practices appear to be in the right geographic locations, ie lower cost practices appear to be where there are groups with greater need. This suggests that general practice is attempting to mitigate a flawed system by lowering co-payments for more vulnerable patients and thus reducing health inequities, despite concerns about the VLCA scheme.

This result seems to be at odds with the proportion (12.9%) of respondents in the NZHS 2022–23 who reported being unable to have a GP visit because of cost, equating to 541 000 people in the general population.⁶ Although VLCA practices seem to be in the right geographic locations, the proportion of people reporting unmet need is still high. This may in part be due to this analysis capturing average effects

in an SA2, but not being able to capture the variation in circumstances in an SA2, eg those reporting this unmet need may be the more socioeconomically deprived people in that location making fees in the local practice difficult to afford. It may also be due to people choosing a GP for reasons other than price, such as expertise in chronic conditions. Alternately, it could be because some people have higher health needs and require more GP appointments; eg in the NZHS 2022–23, all people aged 15+ years reported an average of 2.4 GP visits per year, while people in the most deprived quintile reported 2.6 visits and people with disability reported 4.9 visits.²⁷ While the fees for an individual visit might be reasonable, the cost of each additional visit is felt as an additional burden.

A further reason may be the issue of ‘closed books’ in general practice. Patients may not be able to transfer to a general practice with cheaper fees, or when their circumstances change, because that practice is closed to enrolments or may limit new enrolments, eg to patients who are new to their area.²⁸

The results from model 2 show that the premium a non-VLCA practice can charge is around \$31 (see [Table 1](#)), or given four consultations per year, a premium of \$124 per patient per year. In comparison, the government-funded ‘bonus’ capitation funding in a VLCA practice for an adult, non-CSC holder ranges from \$22 for males aged 15–24 years to \$82 for females aged 65+ years.²⁹ There could be several explanations for the discrepancy between this extra government funding for VLCA practices and the non-VLCA premium: (1) the VLCA practices are not getting enough funding to meet what non-VLCA practices consider adequate

recompense;³⁰ (2) the non-VLCA practices are over-charging non-CSC holders, possibly to subsidise other patient groups; or (3) the non-VLCA practices are offering more services which come at a cost.

A limitation of this study is that we do not capture the actual characteristics of patients in a general practice, just the characteristics of the people in the SA2 that the practice is in. People may bypass their local general practice for many reasons, eg their current practice is closer to work or a former address or they picked a practice that suited them better. In addition, the area that a general practice draws from may be wider than an SA2 and not every SA2 contains a general practice. This analysis draws on only 33% of the populated SA2s, ie SA2s where a general practice resides; containing 38% of the population. The analysis is most likely to miss out the rural population, where the closest general practice is likely to be in a more highly populated area, in a different SA2. While in cities, SA2s may be highly spatially correlated, the difference in people's characteristics between a rural SA2 and a neighbouring urban SA2 may be large. This may bias our results, however, in which direction would depend on the characteristics of the SA2s.

In conclusion, the analysis reveals that general practice fees are associated with the sociodemographic characteristics of their location. While VLCA practices seem strategically placed to serve populations with greater need, this finding contrasts with the 12.9% of respondents in NZHS 2022–23 reporting unmet needs due to cost. Despite VLCA practices aligning with equity goals, fees still pose a significant barrier for many. Addressing these issues is crucial for ensuring equitable health care access.

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Data availability. The data are publicly available (citations provided) or available on request from the MoH.

Conflicts of interest. The authors declare that they have no competing interests.

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