

Can community service card possession be used to measure need?

Barry Gribben MBChB M Med Sc FRNZCGP, Senior Research Fellow, and Felicity Goodyear-Smith MBChB MGP FRNZCGP, Senior Lecturer, Division of General Practice and Primary Health Care, Faculty of Medical and Health Sciences, University of Auckland

ABSTRACT

Introduction

If general practice is to move towards capitation funding, formulation is necessary to adjust for practices with a high proportion of poor health status and high healthcare service utilisation. One option is to use community service card (CSC) holding as a measure for high-need populations. The aim of this study was to measure the uptake of the CSC in a random population sample, and to determine whether there were any differences in uptake of the CSC by ethnicity.

Method

Random selection of individuals from West Auckland households were surveyed regarding CSC status, ethnicity, doctor visits and family income. The survey was 'quota'd' for ethnicity to determine if uptake differed between ethnic groups.

Results

One thousand one hundred and sixty out of 1 812 households were contactable (response rate of 64%). From these, 662 individuals were randomly selected and interviewed in depth. 44.6% said they were CSC holders. Analysis indicated that 33.4% of non-CSC holders were eligible for a card and these were disproportionately likely to be Māori and Pacific people, large families and young people. Even if all those eligible in the non-contactable households were assumed to hold cards, the effect was sufficiently large that the data still shows diminished CSC uptake in deprived households.

Discussion

A significant proportion of people eligible for a CSC do not have one. Furthermore uptake is biased against Māori and Pacific people, large families and young people. Card-holding inadequately measures need – adjustment is required for ethnicity and other factors.

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Introduction

It is well-established that low socio-economic status is associated with a greater incidence of chronic illness and increased GP visits. International research on the correlation between socio-economic status and health is compelling. Inequality in health status was clearly identified in Britain twenty years ago in the Black Report.¹ A 1994 BMJ editorial commented that while the social causes of ill-health are inadequately understood, the health differences between rich and poor have become more striking as the poverty gap has widened.²

The association between socio-economic status and poor health status similarly has been established in New Zealand. For example, there are well-documented differences in mortality between high and low socio-economic groups with ratios as high as 5 to 1 in the 15–24 age group.³ There are also ethnic differences. Māori mortality is significantly higher than non-Māori, even after controlling for social class.⁴ Māori have more hospital discharges for asthma (5.6/1 000 vs 3.3/1 000) and more hospital discharges for ear infections (192/100 000 vs 135/100 000).⁴ Other stud-

ies show that hepatitis B,⁵ rheumatic fever,⁶ diabetes⁷ and lung cancer^{8–10} are more prevalent in Māori.

Regions with disadvantaged populations appear to receive less than their share of the available health services. A study of public health expenditure in Auckland found that affluent populations in the central city received higher than expected expenditure, whereas poorer populations in South Auckland had significantly lower expenditure.¹¹ Analysis of national data in 1994 to 1995 also showed significant under-utilisation of, and expenditure on,

primary health care services to Māori and other New Zealanders in poor circumstances.¹²

Subsidy regimes do not always achieve the desired redistribution of medical resources. A study of primary care utilisation following the 1992 New Zealand health reforms which provided subsidies and charges reshaped to favour poorer people found that the latter were not advantaged by the regime and may even have been adversely affected by the changes.¹³

General practice (GP) funding is moving from a fee-for-service towards a capitation funding scheme. Under such a scheme, providers are paid a lump sum to provide primary medical care for a registered population, with the lump sum adjusted for certain demographic characteristics of that population. The formula for determining capitation is currently under review. If there is to be adjustment of payment to GPs who have a high proportion of patients in their care with relatively poor health status and who are high users of health care services, then a measure is needed to allow for appropriate weighting of the formula. If this is not achieved, GPs practising in areas of high deprivation will be financially disadvantaged.

The proportion of high-need patients in a GP's practice will need to be determined, taking both socio-economic status and ethnicity into consideration. Classifications of occupations to assign social class groups has been used in New Zealand research

situations, but this data would not be available from providers, at least in the short-term. Furthermore research indicates that such classifications do not adequately allow for variability between ethnic groups (Māori/Pacific Island and Pakeha) of indicators of social disadvantage.¹⁴

Community service card (CSC) holdings have been viewed as a readily available measure of need.¹⁵ The CSC is a dichotomous indicator of income adjusted for family size. One possible approach to redistributing resources, which has been used in capitation calculations, is to increase the subsidy for CSC holders and reduce it for non-CSC holders, within a fixed budget. The expectation might be that providers would pass on the subsidy changes by reducing their fees to CSC holders, and possibly by increasing them for non-CSC holders. It has also been proposed to use the proportion of CSC holders in

a provider's registered population as an indicator of population health need which can be used to redistribute resources to high-need populations.

Concerns regarding the use of CSC holding for targeting fund-

ing for capitated general practice have already been expressed by Crampton and Gibson in 1998.¹⁵ The disadvantages of this mechanism they cite include the CSC being a poor measure of socio-economic status because it is based solely on equivalised income (whereas education and occupation are also socio-economic determinants); a significant

Key points

- As we move towards capitation funding, one option is to use community service card (CSC) holding as a measure for high-need populations.
- A significant proportion of people eligible for a CSC do not have one.
- Uptake of the CSC is biased against Māori and Pacific people, large families and young people.
- Relative income is not the only predictor of socio-economic disadvantage.
- The CSC alone is inadequate as a surrogate measure of need, and other factors, in particular ethnicity, need to be taken into account.

proportion of those eligible are non-holders; and the abrupt cut-off for eligibility creates a 'poverty trap' for those at the low end of the non-eligibility population.

In 1993 the Health Reforms Directorate commissioned the 'Micromarkets' or 'Primary health care utilisation and expenditure survey'. This comprised a consumer survey, collection of pharmacy data, and the collection of consultation data from a sample of local GP patient records. The latter were collected from a one in 10 random sample of all active patients of 32 GPs – in total from 6 157 patient records on 21 486 consultations and 20 537 prescriptions. CSC were held by 39.0% of patients and high user cards by 2.0%.¹⁶

Data from this survey supported the use of the CSC as a surrogate measure of health need. CSC holders have an average 4.24 consultations per annum compared with 2.99 for non-CSC holders, and receive an average of 6.74 prescription items per annum compared to 4.89 for non-CSC holders. Holders of CSC have increased odds of having certain chronic conditions (see Table 1).

The abrupt cut-off for eligibility creates a 'poverty trap' for those at the low end of the non-eligibility population

Table 1. Increased odds of CSC holders having certain chronic conditions

Chronic condition	Odds ratio	95% confidence interval
Musculoskeletal	1.32	1.03 – 1.71
Asthma	1.54	1.24 – 1.87
Hypertension	1.67	1.34 – 2.02
Major psychiatric	2.43	1.61 – 3.82
Diabetes	2.59	1.73 – 3.96

These data show that at present the CSC is associated with health need, as well as measuring relative economic disadvantage.

However, whether the CSC is an adequate measure to calculate the adjustment needed in capitation payments to allow for high need patients has not been established. Use of the CSC in this way relies on CSC uptake being reasonably high, and most people entitled to a CSC actually holding one. Alternatively, if the uptake of CSC is relatively low, a scaling factor could be used to adjust overall CSC holding rates to those expected for the whole population. This latter option would only be valid if there is no bias in uptake, and those non-holders who are entitled to CSC represent a uniform population.

Anecdotal data from various sources has suggested that this is not the case, and that Māori and Pacific Island populations are less likely to hold cards to which they are entitled than other populations. Data suggests that the take-up rate in particular high-need populations may be significantly lower.¹⁷

The aim of this study was to measure the uptake of the CSC in a random population sample, and to de-

termine if there were any differences in uptake of the CSC by ethnicity.

Method

The Auckland RNZCGP Research Unit commissioned a survey by MRL Research Group to determine the degree of uptake of CSC by eligible families.

The sample was drawn from West Auckland, an area whose demographic profile closely matched that of the North Health region by age and ethnicity. It also coincided with the catchment of practices of the doctors participating in the urban GP utilisation survey, which had found that CSC is a significant predictor of utilisation.¹⁷

The number of families comprising a single household was established, and then individuals were randomly selected. CSC eligibility was determined by collecting information on all sources of family income. Individuals were sampled rather than households or families because capitation budgets will be worked out according to the characteristics of individuals. However CSC eligibility

is determined by a test of family income adjusted for family size, and this selection process eliminated any possible bias against large families or large households.

As one of the key goals was to determine if uptake differed between ethnic groups, the survey was 'quota'd' for ethnicity. Once 175 'Other' interviews had been obtained, only Māori and Pacific Island individuals were invited to participate. This increased the power of the survey to determine whether there was a difference in

Anecdotal data has suggested that Māori and Pacific Island populations are less likely to hold cards to which they are entitled than other populations

uptake rates by ethnicity.

Data collected included age, gender, ethnicity, relationship to other members of the household, CSC status, number of visits to a doctor over the past three months, sources of income and total income for the family. The Income Support criteria for CSC eligibility were then applied. Interviews were conducted by proxy for those unable to respond due to age or disability. Selected individuals were offered an interview in their first language if they wished.

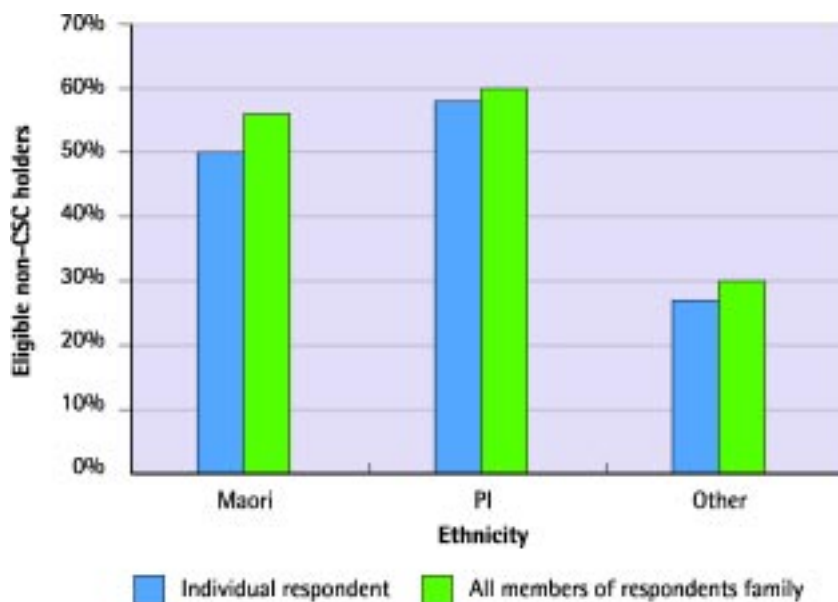
The survey was conducted by face-to-face interviews over a two-week period. Interviewers called back up to three times at differing times to make contact with the selected household.

Results

A total of 2 513 households were initially selected. Of these, 701 failed to qualify for reasons such as full quotas, or not being selected by the randomisation protocol. This resulted in 1 812 eligible households. Of these, 652 households were not contactable after three call-backs, giving a response rate of 64%. From the 1 160 households contacted, 662 individuals were randomly selected and interviewed in depth.

Of the 662 individuals interviewed, 295 said they held a CSC, a holding

Figure 1. Non-CSC holders eligible for CSC by ethnicity

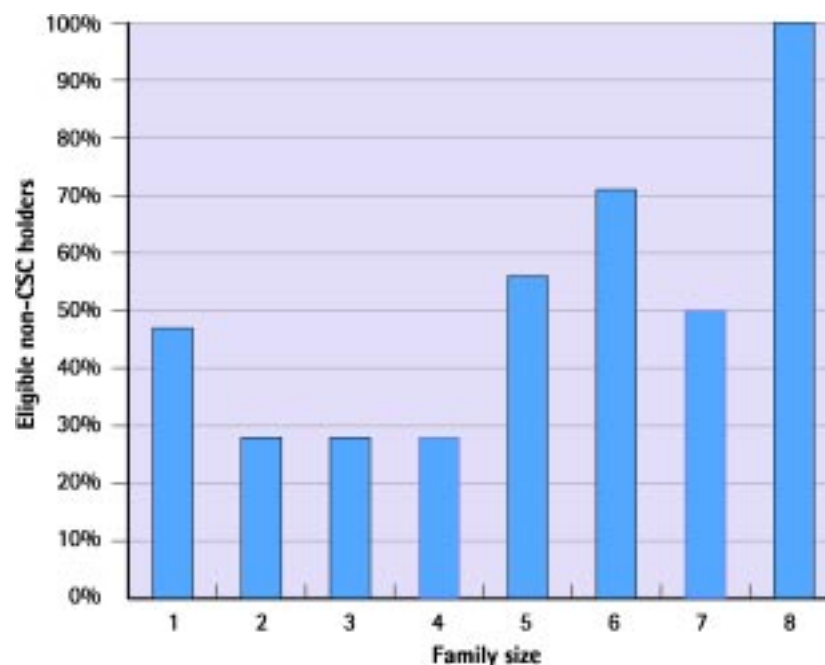


rate of 44.6%. This compared with an eligibility estimate by the then-Department of Social Welfare of 53% (1.83 million) in 1992, and an eligibility estimate of 47% in the Personal Health Formula calculations in the 1996/97 RHA Policy Guidelines.

As levels of paid employment had increased, the estimated eligibility for the CSC decreased over the previous three years. If the actual card holding rate (44.6%) is divided by this estimate of eligibility (46.6%) an 'uptake rate' of 95.7% is obtained. In the 'Micromarkets' survey, conducted in rural NZ in 1992/3 and which formed the basis of the earlier report for North Health, the estimated uptake rate was 74% (39%/53%).¹⁶

The group of people who did not have a card (367/662) was analysed by ethnicity to determine ethnic group specific non-uptake rates (see Figure 1). Of the 96 Māori interviewed, 50% (48) were eligible for the CSC. For Pacific Islands people the figure was 58% (51/88) and for Others it was 27% (50/182). The second bar in the figure represents the effect of including all

Figure 2. Non-CSC holders eligible for CSC by family size



the family members of the non-CSC holder in the calculation of the non-uptake rate. When the data is re-weighted to the North Health ethnicity profile (assumed to be Māori 13%, Pacific people 9.9%) the

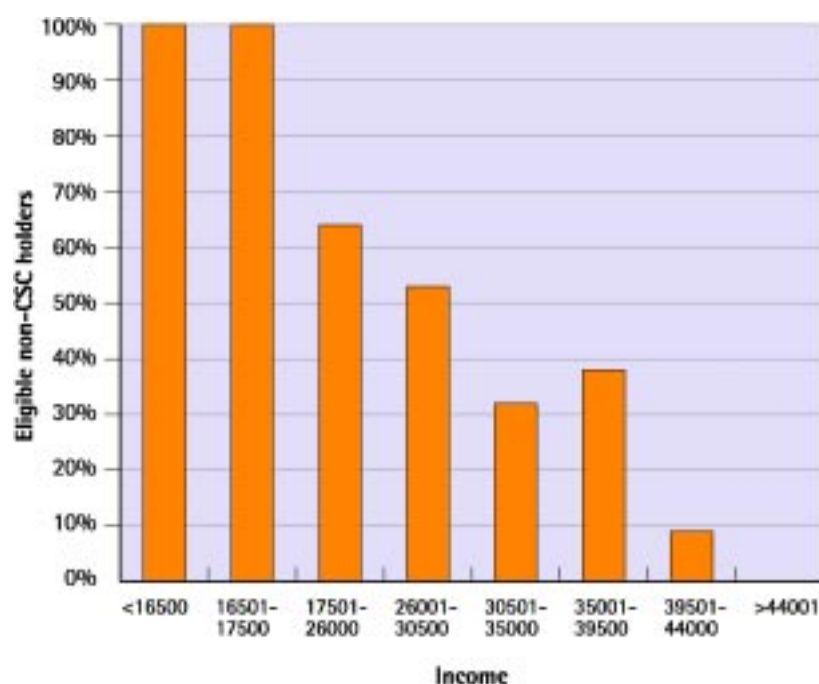
data suggests that 33.4% of non-CSC holders are eligible for a card.

This data is inconsistent with the estimated national eligibility figure of 47%. If all people deemed to be eligible for a card actually got one from Income Support, and all people who said they held one actually had a CSC, the total number of possible card holders in the sample of 662 would be $295 + 149 = 444$, a CSC holding rate of 67.1%, which is extremely unlikely. It is likely that a significant proportion of the people who said they had a CSC either did not actually have one, or they had had a CSC in the past but it had expired. Also, persons who were calculated to be eligible for a CSC but did not have one may have understated their income. The purpose of the study was to establish whether there was any differential non-uptake, as scaling to national figures can adjust for consistent levels of under or over-reporting.

Discussion

The data demonstrated an inequality in CSC uptake. It was found that as family size increased, the prob-

Figure 3. Non-CSC holders eligible for CSC by income



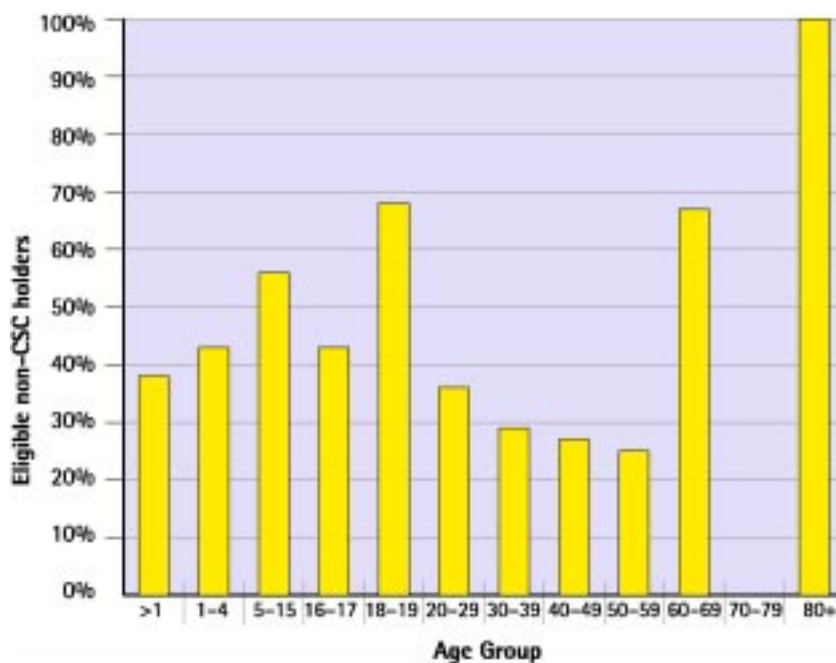
ability of not holding a card that you are entitled to decreased (Figure 2). Lower income biased towards reduced uptake: the lower your income the less likely you are to hold a card that you are entitled to (Figure 3). Anyone earning under \$16 500 is entitled to a card, yet there were 50 single adults with this income who did not have a CSC; there were 19 single adults living alone and earning between \$16 500 and \$17 500 who did not have a card. The increasing uptake with rising income may reflect the effect of increased education or decreased alienation (e.g. decreased language or cultural barriers to negotiating the CSC application process). Finally, Figure 4 shows the relationship with age. A significant part of the problem of non-uptake appears to be with young people not getting the cards to which they are entitled.

This data is consistent with the ethnicity results. Māori and Pacific Island families tend to be larger, poorer and younger than Pakeha families.¹⁸ This confirms earlier anecdotal reports and suggests that should the CSC be used in the capitation formula, the differential uptake by ethnicity needs to be taken account of.

A relatively high proportion of households were not contactable after three visits (36%, n = 652). Non-responders could potentially contribute confounding and countervailing biases.

On the one hand, people away at work, and hence belonging to a higher income bracket, may have been over-represented in the non-responders, although this factor was partly addressed by the interviewers returning on three occasions at different times. On the other hand, non-responders may have included a significant number of households choosing not to open the door because of reluctance to engage with

Figure 4. Non-CSC holders eligible for CSC by age group



perceived state agents, a group more likely to belong to low income categories. However, even assuming that all eligible non-responders held cards, the effect in our findings was sufficiently large that the data still would have shown diminished CSC uptake in deprived households.

The CSC is a crude measure of income adjusted for family size. The eligibility criteria mean that as a tool for targeting relatively economically disadvantaged groups it is potentially quite useful. However it suffers from two major flaws.

The first is that a significant proportion of those people eligible for a CSC do not have one, as previously indicated by Micromarket data and now demonstrated by our data. Furthermore, uptake is biased against Māori and Pacific people, large families and young people.

The second criticism is a more general one. Relative income is not the only predictor of socio-economic disadvantage. The experience of CSC

holders in certain geographic areas, for example South Auckland or the Far North, can be viewed as a syndrome, a cluster of social disadvantages which together cause much greater health need than the income measurement would predict. These people have low educational attainment, are often Māori or Pacific people, come from violent homes, live in overcrowded conditions, have often been the victims of physical and/or sexual abuse and many have never had a job, nor have any likely prospect of a job.

A fair redistribution formula should recognise that the CSC alone is inadequate as a surrogate measure of need, and that other factors, in particular ethnicity, need to be taken into account.

As an alternative, serious consideration should also be given to adjustment to recognise other determinants of health need, on the basis of other demographic statistics, for example ethnicity. This could be based on a deprivation score (e.g. NZDep96) for geographically based provider groups or on data supplied by provider groups themselves. This is an approach that could be adopted if the CSC was dropped by government.

A fair redistribution formula should recognise that the CSC alone is inadequate as a surrogate measure of need

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