

The deprivation profile and ethnicity of Healthline callers

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ABSTRACT

Aims

To show the deprivation indices of the addresses of callers to Healthline.

Methods

A retrospective analysis of routinely collected addresses of callers to Healthline in two, one-week sample periods, geocoded and matched with the NZDep2001 Index of Deprivation.

Results

Call rates increased with increasing level of deprivation of caller address, except at the highest levels of deprivation, when there was a decrease.

Conclusions

Healthline is used by callers from all socioeconomic levels, but there are proportionally more calls from areas of middle to high deprivation. There are fewer calls from areas of extreme deprivation than expected.

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The Government's Primary Health Care Strategy states that a strong primary health care system is central to improving the health of New Zealanders and, in particular, tackling inequalities in health.¹

Healthline, New Zealand's telephone health advice, information and triage service² was, from 1 July 2005, available to every New Zealander with access to a telephone. PlunketLine has been providing 'well child' advice for several years, and

was subcontracted to answer well child calls in association with Healthline.

To demonstrate its contribution to the Primary Health Care Strategy, Healthline should show that it is accessed by all ethnic and socioeconomic groups according to need. Access should be higher where need is greater – i.e. in more socially deprived groups, and among Maori and Pacific people.^{3–6}

George expressed the concern that NHS Direct, the similar British service, may in fact have been serving the needs of the 'worried and well middle classes',⁷ a position supported by a survey showing lower awareness of the service among those in social classes D and E (i.e. the two lowest socioeconomic quintiles).⁸ The UK House of Commons Public Accounts Committee recommended NHS Direct should act to encourage use by disadvantaged groups.⁹

In response, Burt and coworkers used postcode data to identify the address wards of callers to NHS Direct South East London over six months.¹⁰ They used Jarman and Townsend scores for deprivation in each ward, and found that calls rose with increasing deprivation, until at extreme levels they declined. Their results challenged the contention that NHS Direct is not used by those living in deprived areas.

Cooper and coworkers similarly examined six months' calls to West Yorkshire and West Midlands NHS Direct sites, and found call rates were highest where deprivation was at or

just above the national average. Furthermore they found that at extreme deprivation, although the rate of calls about children was low, adult call rates were relatively high.¹¹

A more recent study of NHS Direct in Bedfordshire and Hertfordshire used the IMD 2004, a summary measure of multiple deprivation, and found a rising linear relationship between calls per 1000 people and deprivation quintile.¹²

These studies of a service similar to Healthline have thus shown increasing use with increasing deprivation, as would be expected if use matched need.

The NZDep2001 Index of Deprivation combines nine variables from the 2001 national Census that reflect eight dimensions of deprivation.¹³ It provides a deprivation score for each meshblock in New Zealand. Meshblocks are geographical units defined by Statistics New Zealand, containing a median of about 90 people in 2001.

The index of deprivation ordinal scale ranges from 1 to 10, where 1 represents the 10 per cent of areas with the least deprived scores and 10 the 10 per cent of areas with the most. NZDep2001 deprivation scores thus apply to areas rather than to people.

Our aim was to show the deprivation indices of the addresses of callers to Healthline.

Method

Healthline was piloted in four regions of New Zealand for four years – 2002–5. In 2005 coverage was pro-

gressively increased, until in 1 July 2005 Auckland was added, to complete a national service.

We accessed our electronic record storage for calls to Healthline seeking symptom triage or health information, and 'well child' calls to PlunketLine. We included all such calls during the two weeks beginning 25 July and 24 August 2005.

We examined calls from Auckland addresses because we wanted to detect differences between regions recently serviced by Healthline, from those that had Healthline available for some years.

We examined the ethnicity of callers. Nurses routinely record ethnicity and addresses, but many callers prefer to remain anonymous, or give unclear addresses or ethnicity.

The New Zealand Health Information Service (NZHIS) assigned meshblock numbers to addresses, and we assigned the NZDep2001 deprivation scale to each geocoded address. We calculated the percentage of calls from addresses in each deprivation decile.

Results

Healthline nurses answered 7618 calls during the study periods; of these 6415 callers (84.2 per cent) gave their addresses, and 5533 (72.6 per cent) were successfully geocoded. PlunketLine nurses answered 2181 calls during the study periods; of these 1615 callers (74.0 per cent) gave their addresses, and 961 (44.1 per cent) were geocoded.

Figure 1 shows the per cent of Healthline calls from addresses in each decile of deprivation. There was no change to the shape of the graph when repeat calls from the same address were removed (Figures 1–3 apply only to Healthline data).

Figure 2 shows the ratio of per cent of Healthline calls from each deprivation decile, to the per cent of population in that decile (i.e. 'observed' per cent over 'expected', where a ratio of >1 indicates a higher than expected rate of calls based on population numbers, and a ratio of <1 a lower rate) for New Zealand, and for Auckland.

In Auckland, where Healthline had just become available, the ratio of per cent of calls received from decile 10 areas to population in decile 10 areas was 0.90, similar to the national level of 0.95.

Seven thousand three hundred and ninety Healthline callers gave their age (97 per cent), and of these 2896 (38.7 per cent) were calls about children aged 0–14. Figure 3 shows the ratios of per cent of Healthline calls from each deprivation decile to per cent of the population in that decile, for all calls, and for children and adults separately.

Decile 10 adults (15 years or older) are 9 per cent of all adults in New Zealand. They were the subjects of 9.2 per cent of geocoded Healthline calls about adults, giving a ratio of 1.02.

Figure 1. Per cent of callers to Healthline in each deprivation decile, compared with per cent of the New Zealand population in each decile.

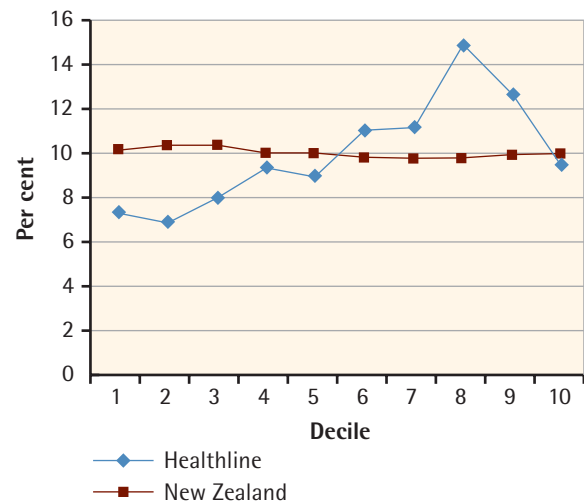


Figure 2. Ratio of per cent of calls to Healthline over per cent in the population, for New Zealand and for Auckland, for each decile.

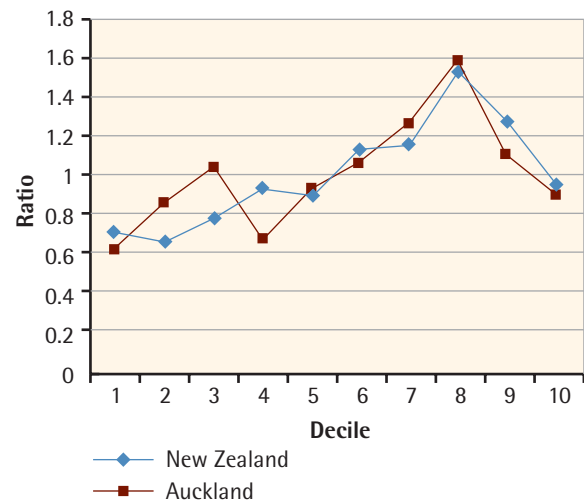


Figure 3. Ratio of per cent of calls to Healthline, over per cent of people in New Zealand, for each decile and for children and adults.

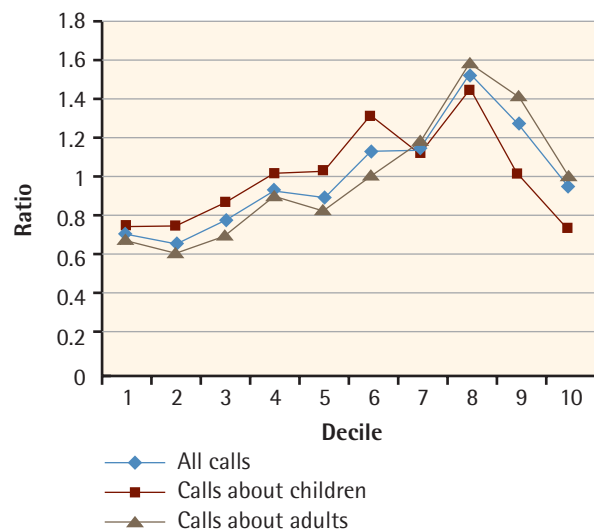


Figure 4. Ratio of per cent of calls to Healthline and PlunketLine from each decile over per cent of people in New Zealand: all ages for Healthline, 0–4 for PlunketLine.

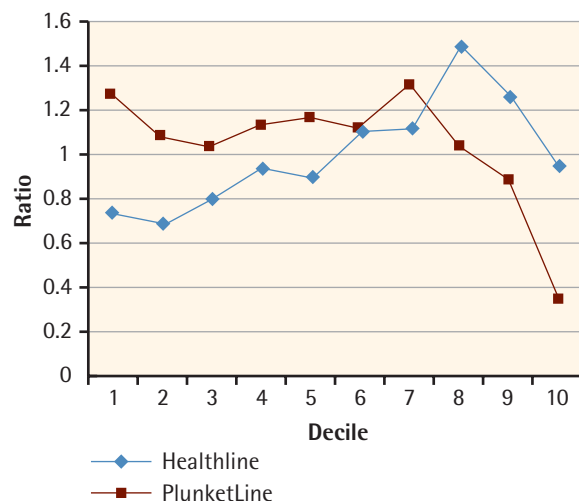
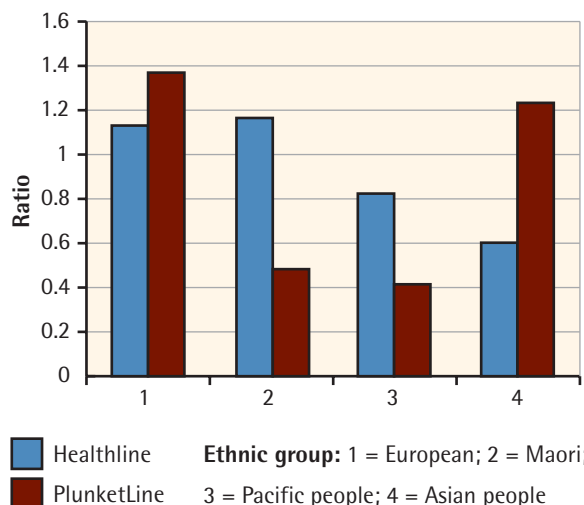


Figure 5. Ethnicity of callers – ratio of per cent of callers in each ethnic group to per cent of NZ population in each group – all ages for Healthline, 0–4 years for PlunketLine.



Decile 10 children (age 0–14) are 13.2 per cent of all children in New Zealand, and were the subjects of 9.9 per cent of geocoded Healthline calls about children, giving a ratio of 0.75.

Decile 10 children (age 0–4) are 14.2 per cent of all 0–4 year olds in New Zealand, and were the subjects of 4.9 per cent of geocoded PlunketLine calls, giving a ratio of 0.35. Figure 4 shows the ratios of per cent of calls to PlunketLine from each deprivation decile to per cent of the population aged 0–4 in that decile, and similarly for calls to Healthline where the denominator is per cent of all ages in each population decile.

Six thousand six hundred and thirty Healthline callers (87 per cent), and 1766 PlunketLine callers (81 per cent) gave their ethnicity. Figure 5 shows the call ratios by ethnic group. These were calculated using NZ 2001 Census population data; for Healthline we compared the per cent of callers in each ethnic group with the per cent of all people in each group, and for PlunketLine we compared the per cent of callers in each ethnic group with the per cent of children aged 0–4 in each ethnic group.

Discussion

Health care need is related to socioeconomic status, and socioeconomic status is measured by the deprivation index. As with NHS Direct in the UK, Healthline was used overall to a greater extent by people calling from areas of higher deprivation.

In two other respects our results reflected earlier UK observations.

First, the rate for all calls from decile 10 areas was lower than expected, much lower than the rate for deciles 8 and 9, and lower than their presumed health need suggests it should have been. The reason is not obvious; it may be lack of access to a telephone (less than 5 per cent of New Zealanders lack telephone access, but they may be among the most deprived); language difficulty (although translation services are available, a perceived barrier may persist and, in support of that, population-based call rates to Healthline were rather lower than expected for Pacific and Asian people); inadequate information about the service, laissez-faire health beliefs, or homelessness (decile 10 callers may have been over represented among those who did not give an address).

Interestingly, complaints to the New Zealand Health and Disability

Commissioner also showed a significant fall at the highest quintile of deprivation.¹⁴

In the UK, higher levels of deprivation are associated with greater use of immediate care primary services, such as general practices and accident and emergency centres. In New Zealand 'not for profit' general practices, attendance rates were highest among those from highest deprivation areas, but that would be expected from the populations they serve.¹⁵

Second, although there was a higher rate of calls about children than about adults from low deprivation areas, there was a lower rate of calls about children than about adults from high deprivation areas. Again, the reason is not obvious, but the PlunketLine figures show that the presumed high needs of high deprivation children were not being met by that service. The low rate of calls about children from high deprivation areas is even more concerning if increasing deprivation is associated with increasing child mortality and morbidity in New Zealand, as it is in England.¹⁶

The profile of use across deprivation deciles in Auckland was similar to that for all of New Zealand, suggesting that longer availability of

the service did not greatly change the distribution.

The study period began three weeks after Healthline had become a national service; we do not know whether 'early adopters' were over represented, nor the effect that may have had on the sample. Rural addresses were less likely to be successfully geocoded than urban ones, and again, we do not know what effect that may have had. The study period of two winter weeks may have

had some effect on the nature of the sample.

Overall, the result is encouraging for Healthline, which is used to a greater extent by those in the lower than the higher socioeconomic groups, is thus helping to meet the higher health care need of those groups, and is thus contributing to the Primary Health Care Strategy. On the other hand, the under use of this service by people living in deprivation deciles 9 and 10 requires fur-

ther assessment, beyond the capabilities of this study.

Conflicts of interest

All authors are associated with McKesson New Zealand, which at the time of the study operated Healthline and subcontracted PlunketLine for the Ministry of Health.

Acknowledgements

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Avoid Salesmanship

'As family physician educators, we are often placed in the dual role of instructor and recruiter. My experience with more than 300 volunteer clinical faculty who participate as instructors for medical students tells me that we pursue our role with zeal. Many of us have little doubt that more family physicians could help solve the current US health care crisis. Unfortunately, our enthusiasm is often misperceived as overzealousness. The students we seek to attract to our profession are often repelled by our uniqueness. As a result, we should teach more and recruit less. It is easy to forget that bright young medical students can make reasonable decisions if they are given objective data and some reasonable guidance. We must refrain from trying to make our pupils into family physicians. Rather, by demonstrating how we practice the art and science of medicine, we reveal that our specialty has a legitimate place within the context of health care delivery and that it represents an attractive career decision.'

Orientele E Jr. Ten tips for effective teaching. Fam Med 1998; 30(5):326-7.