

The removal of patients who live outside the practice boundary:

a study of outside-area removals in Northern Ireland in 2001–2002

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ABSTRACT

It has been suggested that there are significant overlaps between removals due to deregistration and removals arising because patients live outside the practice area. If this is true, it would mean that the current estimates of deregistration would need to be revised upwards. All outside-area removals for the calendar years 2001 and 2002 were reviewed and characterised by age, sex and Jarman score of the enumeration district of the patients' residence and distance from the practice. The average outside-area removal rate was just over one removal per practice per year. Removal rates were highest between the ages of 18 and 44 years; there were no significant differences between the sexes. Rates of removal increased exponentially with distance, although even at marked distances from the practice there were about 10 patients remaining on the list for each one removed. Residents in deprived areas were more likely to be removed, although because areas most distal to the practice tend to be affluent, overall there was a predominance of affluent patients among those who are removed. In Northern Ireland rates of outside-area removal are only slightly higher than those of deregistration. It is evident that GPs are exercising some discretion as to which of the outside-area patients they retain on their list. This has the potential to cause some misunderstanding and resentment among patients, as has been reported previously.

Keywords

catchment area (health); deregistrations; health services accessibility; patient removals; practice boundaries, socioeconomic factors.

INTRODUCTION

GPs in the UK can have a patient removed from their list for two main reasons. The first of these occurs when the GP feels that the doctor–patient relationship has irretrievably broken down and is more formally known as 'removal at GP request', although it also called 'struck off' or sometimes, and less pejoratively, as 'deregistration'.¹ Removal at GP request has generated some unfavourable press for the profession² and has been quite well researched over the last decade.^{3–10}

GPs may also remove patients who reside outside what is deemed to be the practice area. These are called 'outside-area removals' and it is these cases that the current paper addresses. The practice area is the geography that defines the population for which the GP undertakes to provide 24-hour cover, including house calls. These removals often arise when the patient has moved further away from the surgery, but can also occur if the practice has redrawn its boundaries. If the Central Services Agency ([CSA], responsible for the registration and the maintenance of the computerised index of all patients in Northern Ireland) becomes aware that the patient now lives outside the practice area they will write to the GP asking if the practice is willing to keep the patient on and provide 24-hour cover. If they are not, the CSA informs the patient of the situation and asks them to register with another practice closer to their home within the following 28 days. In a minority of cases it is the GP who suggests that a patient is living too far away and who requests an outside-area removal. In contrast to deregistrations, there has been very little written about outside-area removals.

An unpublished qualitative study (L MacLeod and J Hopton, Edinburgh, 1998) provides a powerful argument that the division between deregistrations and outside-area removals is not clear-cut. It suggests that GPs may have a number of patients living outside the practice boundaries and therefore exercise some discretion as to who is retained and who is removed: once patients are perceived to be troublesome they are removed, although as an outside-area removal rather than by deregistration, which is presumably less stressful for the GP and less

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stigmatising for the patient. If this is correct then the current estimates of deregistrations may be an underestimate. However, this thesis has not been tested in a quantitative framework.

The present study aims to examine the numbers and distribution of outside-area removals in Northern Ireland and, in particular, to examine the relationship between removals and socioeconomic factors.

METHOD

The researchers were supplied with an anonymised dataset of all the patients in Northern Ireland for the years 2001 and 2002. The Jarman score¹¹ of the patient's enumeration district (average population size 400) was used as a measure of deprivation, and the dataset included an indicator that allowed individuals to be grouped into households. This was important, as it is households rather than individuals that are removed. The distance 'as the crow flies' (in kilometres) of the household to the practices' main and branch surgeries was also calculated by applying Pythagoras' theorem to the grid references of the respective addresses.

The general aim was to see if GPs, when considering patients who lived beyond their practice boundaries, were more likely to remove patients who came from areas with higher Jarman scores, that is, those who were likely to be more deprived. Unfortunately, there is no easy way to determine a practice boundary as they generally are not precisely defined geographically and will vary between areas, such that rural practices will tend to cover larger areas so that both GPs and patients will have further to travel. To control for this variation in practice boundaries we used standardised units of distance rather than straight kilometres. These were calculated as follows: the minimum distance from the patient's home to the nearest main or branch surgery of their practice was calculated and then log-transformed to reduce the skewness of the distribution. Standard deviates were then produced by subtracting the mean distance of patients in that practice and dividing by the standard deviation. The result is a measure that relates the distance of the patient to the mean for his/her own practice, and the distance to the practice is measured in terms of standard deviates away from the practice mean rather than kilometres. A measure of 1–1.5 standard deviates greater than the

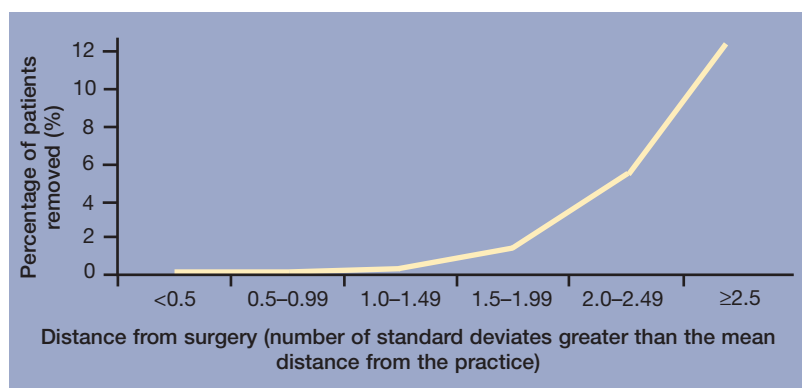


Figure 1. Likelihood of being removed by distance from surgery.

mean distance is equivalent to about 5 kilometres in an urban setting, and about 11 kilometres in a rural setting.

Logistic regression analysis was used to determine which factors were associated with an increased likelihood of a patient being removed for outside-area reasons. It was not possible to control for the age or sex of the patient as households rather than individuals were the unit of analysis.

RESULTS

The registered population in Northern Ireland in 2003 was 1 782 188 patients (416 789 households). Between January 2001 and December 2002 there were 1403 (0.08%) individuals and 882 (0.21%) households who had been removed by their GP because they lived outside the practice boundaries. Removal rates were highest for those aged between 18 and 44 years (range = 0–97 years) and removed patients were, on average, 4.0 years younger than those who were not removed (95% confidence interval [CI] = 3.1 to 4.9 years). There was no significant difference in the rates of removal between men and women.

Very few patients are removed at distances less than 1.5 standard deviates more than the mean distance for the practice, but the likelihood of removal increases exponentially at greater distances (Figure 1). It is also apparent that the majority of patients are still retained by their GP, even at marked distances from the practice.

Of the 416 789 households, 84.2% live within 1 standard deviate from the mean from the practice surgery, with only 5.7% living at distances of 1.5 standard deviates or greater (Supplementary Table 1). Both the proximity to the practice and the likelihood of being removed varies according to the Jarman score of the area of residence. Deprived households tend to be situated close to the GP surgery where removal rates are low, and there are a greater proportion of affluent households furthest away from the practice, where the rates of removal are higher. However, at any given distance it is those living in the deprived areas that are more likely to be removed. Consequently, slightly more patients from affluent than from deprived areas were removed overall (the difference in Jarman scores for

How this fits in

One often-quoted qualitative study has suggested that patients who are removed because they live outside the practice boundaries may share many of the characteristics of those that are 'struck-off'. This is the first quantitative study to describe the characteristics of patients who are removed for outside-area reasons in Northern Ireland.

Table 1. The effect of distance and Jarman score on the likelihood of being removed as an outside-area removal.

Variable	Odds ratio (95% CI)
Distance ^a	
0.50–0.99	8.2 (4.0 to 17.2)
1.00–1.49	66.0 (35.4 to 122.9)
1.50–1.99	376.3 (205.4 to 689.5)
2.00–2.49	1592.9 (870.4 to 2914.8)
≥2.50	3734.1 (2039.3 to 6837.5)
Jarman score	1.009 (1.005 to 1.014)

^aDistance is measured in standard deviates away from the mean where base = <0.5 standard deviates. All odds ratios are significant at the P<0.001 level.

removed versus non-removed patients was 2.65 [95% CI = 1.56 to 3.72]).

Logistic regression modelling (Table 1) confirms the marked exponential increase in the risk of being removed the further away the patient lives from the practice. The Jarman score is also important in determining the likelihood of removal, although the effects are relatively modest in comparison to those of distance. It appears that every 10 points difference in Jarman score is associated with an approximately 10% change in removal rates. There was no interaction between distance and Jarman scores.

DISCUSSION

Removal for outside-area reasons is relatively rare in Northern Ireland and equates to an average of just over one removal decision per year per practice. This is a slightly more frequent occurrence than deregistration removals, which occur at just less than one per practice per year.^{1,6}

Removal rates only start to rise between 1.5 and 2.0 standard deviates from the mean, and at greater distances from the practice the likelihood of removal increases exponentially. However, even at distances of ≥2.5 standard deviates there were nearly ten patients retained for every patient that was removed.

The relationship between outside-area removals and deprivation is complex. At any given distance from the practice the rates of removal were highest for those patients living in the more deprived areas — that is, GPs were more likely to remove deprived patients. However, at distances where removal rates are highest most areas tend to be affluent, so the net result is that overall most patients who are removed tend to be affluent (because a greater proportion of a small number may be less than a small proportion of a much larger number). Although strongly associated with deprivation, the primary function of the Jarman score was as a measure of GP workload and this suggests that out-of-area removals may be influenced more by workload considerations than by deprivation as such.

It has been suggested that there is an overlap

between outside-area removals and deregistrations³ and this paper offers some support for this viewpoint. Both types of removal are initiated by the GP and patients are aware of an element of selectivity as some patients are removed while, in the patient's eyes, others with similar attributes are allowed to remain. It is known that mismatches between patient and GP perceptions of appropriate demand can lead to deregistration,⁸ and workload may be an initiating factor in outside-area removals. It is likely, therefore, that some cases of outside-area removals are very similar to deregistrations and invoke an equivalent emotional response in patients. However, we do not believe that the current demarcation between the two should be changed as long as there is proper scrutiny of each request for removal. In Northern Ireland this is done by the CSA, who will challenge GPs if they consider that the an inappropriate coding has been used (for example, for suggesting that a patient within the practice boundary be removed for outside-area reasons). The proof of the effectiveness of this system is evident by the very small numbers of outside-area removal that occur relatively close to the practice and the steep rise at greater distances.

Supplementary information

Additional information accompanies this article at: <http://www.rcgp.org.uk/journal/index.asp>

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Competing interests

None

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