Improving Health Outcomes
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Locality profiling

Geographical Area covered: Avon
Focus: Case studies focusing on subdistrict variation in health outcome

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Editorial comments on how case study is linked to improving health outcomes: (also published in Volume 1)

Morgan and Kammerling describe how locality profiling techniques can focus attention on different communities within their health authority which purchases healthcare for just under one million people. Population based outcome measures in particular - standardised mortality ratios and census derived morbidity indicators - can provide compelling evidence on which to base the case for change.

They have defined 13 localities according to a set of key criteria. They note that some communities have unusual health experiences and need more or different services whatever the reason for people's poor health. The information in their locality profiles includes local perceptions of health and health care needs as well as information on the use of health services. The conclusions from one deprived locality in South Bristol are presented together with the action taken.

The reasons for wide variation in admission rates for psychiatry between localities are explored in their case study as an example of the effect of locality profiling on local mental health services. Unemployment alone explained nearly 95% of the variation. They funded a number of developments to improve services available in the inner city and other deprived areas.

They conclude that population outcome measures are essential tools in the task of distributing resources on a locality base within health authorities. Profiles which emphasise population outcome measures also serve to downplay the vested interests which inevitably influence priority setting and to promote health gain.

Abstract (also published in Volume 1)

This case study concerns the use of locality profiling techniques in focusing attention on a population with outstanding health needs and in defining the steps which will be taken to meet them. Two generic population outcome measures in particular - standardised mortality ratios and census derived morbidity indicators - provided compelling evidence on which to base the case for change.

Improvements to the infrastructure and the scope of primary care are under way or planned and they are listed together with suggestions for monitoring progress. Key factors in the successful use of locality profiling and in the management of change are presented. Population outcome measures are essential tools in the task of distributing resources on a locality base within health authorities.

The locality profiles included standardised hospitalisation rates by specialty. The variation in admission rates for psychiatry was identified as being far greater than the variation in any other specialty. The case study explores this example to illustrate the application of the locality profiling approach. The analysis included an examination of the number of people admitted, regardless of the number of times each person was admitted, and the relationship between admissions and certain socio-economic variables, including unemployment. The relationship with unemployment was so strong that this variable alone explained nearly 95% of the variation. In the context of the wider literature on this subject, this was thought to be because unemployment acted as a sensitive marker of deprivation, rather than a direct effect of unemployment. The inner city had the highest admission...
rate by far, and the study identified that this was unlikely to be related to the nature of the service provided, but more a marker of increased need. As a result, a number of developments were funded to improve services available in the inner city and other deprived areas.

**Introduction:**

**Why this clinical area was chosen:**

**Further information that was required:**

Our first approach was to discuss this variation within the Department of Public Health, and amongst a number of psychiatrists. A number of explanations were offered, relating primarily to different clinical styles within the four separate mental health services run by each of the four NHS Trusts. For example, two ideas put forward were that the Trust with the greatest admission ratio had not invested adequately in community facilities, and that the psychiatrists serving the areas with the highest SAR had a low threshold for admission. The effect of socio-economic deprivation was, however, flagged up by a senior psychiatrist, and we were encouraged to examine what proportion of the variation was due to this feature.

The further information we identified was:

- A further years data, in order to see whether we were looking at a particular oddity or a longer term situation.
- As well as counting the number of admissions, we tried to exclude the effect of multiple admissions by using the hospital number, available to us on the data files, to count the actual number of people admitted, regardless of the number of times each person was admitted.
- In order to examine separately the variations associated with adult psychiatry and psychogeriatrics, we repeated the analysis for people under 65 only.
- We used the census data to identify the socio-economic status of each locality. However, this work was carried out in 1992, when the results of the 1991 census were not yet available. Thus, the only census data we had was from 1981, and at least 11 years out of date. We used this, despite this limitation, and used it to calculate Jarman under-privileged area scores for each locality. In an attempt to identify some more timely indicators of socio-economic status, we used unemployment statistics. These were published by the Department of Employment, and made available to us by Avon County Council on a three monthly basis.
- We looked at length of stay, both for separate admissions, and as the total time spent in hospital by an individual.
- We looked at the relationship between the SHR and the distance from the hospital, in case people living close to a hospital were more likely to be admitted there.

During the period studied, 4109 people were admitted to the local mental health institutions, but because some were admitted more than once, there were total of 6096 admission episodes.

The variation in SARs in people under 65 was even greater than in the all age data we had examined previously- the range was 39 to 299 in terms of admissions and from 44 to 293 when we used person based SARs.

When we plotted the relationship between unemployment rates in a locality and the SARs, we were amazed to find an almost perfect straight line relationship, with increasing numbers of people admitted with increasing unemployment rates. This straight line included the inner city, even though it was exceptional for both a very high rate of unemployment and a very high rate of admissions (Kammerling and O'Connor 1993).

Statistical analysis confirmed the power of the relationship between these two elements. Indeed, we demonstrated that unemployment rates alone explained nearly 95% of the variation between localities. Length of stay and distance from the hospital did not seem to be related at all to the SARs.

There was also a relationship with the Jarman under-privileged area score, but this was weaker than the relationship with unemployment rates. When the 1991 census data became available, we repeated the analysis using the Townsend score, but the results were very similar.
Whilst we could not examine the issues of availability of community based services preventing hospital admission, or consultant specific admission rates (in order to examine the possibility that individual professionals had differing thresholds for admission), the strength of the relationship between unemployment and SARS was such that any of these alternative explanations became untenable.

Previous studies had found relationships of a similar power when correlating admission rates with combinations of census variables. We therefore concluded that the relationship was not a function of unemployment per se, but rather that unemployment was a sensitive marker of deprivation, and it was the deprivation which was related to the need for hospital admission. This was in line with the general literature in this field.

**Data validity studies:**

We were impressed by the completeness of the data available to us. Over 95% of records could be assigned to one of the localities using postcode data.

There is no doubt that data quality generally improved over the period following the introduction of the NHS reforms, but, even when we repeated the analysis in subsequent years, the findings were virtually identical.

We originally undertook analyses using the diagnosis included with the hospital record, but soon abandoned this as an explanatory factor because of the view expressed to us by local professionals that they considered the diagnostic data to be unreliable. This view was based on their own experiences of using this information in audit work and identifying substantial problems with the identification of diagnoses in the case notes and their subsequent translation into diagnostic codes by clerical staff.

**Summary findings from initial work:**

**Changes which were made:**

This work showed clearly that the variation in admission rates was a function of the underlying socio-economic status of the localities, and had little, if anything, to do with the different nature of the services provided in each of the areas. Thus, if admission to a psychiatric hospital is considered as an undesirable outcome indicator for community based mental health services, this study identified that the outcomes in the inner city were, despite first appearances, consistent with those in other areas of the District, given its socioeconomic status. Indeed, if admission to psychiatric hospital is considered as at least one indication of underlying need for mental health services in a community, this showed that the inner city had a level of need far higher than the rest of the District. This last feature was of particular importance. It marked out the need for increased investment in areas of deprivation.

The presentation of this information within the health Authority coincided with pressure for a number of specific changes within mental health services. When demands for initiatives within the inner city arose from local GPs, the information allowed the Authority to respond positively, without blaming the problems on the ‘inefficient’ services provided by the Trust, a response which had been offered on previous occasions to such demands.

The Health Authority, over a period of time, resourced a number of developments. It set up a new mental health team to work closely with the GPs in the inner city, and improved the rehabilitation facilities serving both the inner city and other areas of deprivation. It is currently considering setting up low secure facilities, most potential clients coming from the inner city.

Although the information was accepted and influential within the Health Authority, its acceptance by local clinicians was much more problematic. It was immediately welcomed by clinicians working in the inner city, and by local academics. However, because the work happened at a time of severe financial constraint, it was feared by clinicians elsewhere that the outcome of the work would be a transfer of the resources available to them into the inner city and other deprived areas. The original presentation of the study to them identified this as one possible option. As a result, there was a substantial body of opposition and attempts were made to undermine the scientific credibility of the study.
How changes will be monitored:

The development of a new mental health team working specifically with GPs in the inner city is a particularly innovative method of managing the issues identified in this case study. As well as routine contract monitoring, a more formal evaluation is being conducted.

Changes in the rehabilitation service are being monitored through contracts.

Resource Implication:

The analysis took a significant amount of internal resources, both within the Public health Department and in the Information section of the Health Authority. On working with GPs for the additional community mental health staff allowed this development to be funded with moneys specifically earmarked by central government for primary care developments. The growth of the rehabilitation service was part of mainstream Health Authority funds, identified through the normal planning process.

Practical lessons learnt:

South Bristol is not the only locality with particular health needs, although it is perhaps the most striking. Much has been learned about profiling, interpreting the findings and facilitating change.

Information about health and health services can act as a focus for debate but rarely contributes wholly original ideas. It is often the general pattern that counts and of course it is debate itself that leads to change.

Organisational issues often predominate when change is considered. Particular features in this case include:

- the difficulty of maintaining a high profile for primary care development when management time and resources are preoccupied with demand in the secondary sector;
- many important developments in health care have been opportunistic, when a particular champion can be encouraged to make progress; for a variety of reasons, this is difficult in hard pressed localities;
- resources to put into developments - one of the main levers for change - are scarce and usually have to be found by targeting specific localities at the expense of others; the general practice system itself is not suited to this approach, however compelling the arguments.

Despite these difficulties, the needs of people in south Bristol have been well appreciated by Authority and primary care staff.

Conclusion:

The variation in admissions between localities in the District was almost entirely a function of the socio-economic status of the different areas. Unemployment rates are a very sensitive marker of this status and are much more up to date than census data.

References:


Organisational Context:

It is important to recognise that efforts to improve health and services for people in this locality have been under way for many years and will continue for many more to come. In this phase of development, four key features of the Health Authority's approach have helped to make progress.

- The emergence of locality commissioning which has led to the recognition of the locality as a significant entity and given focus to the work. It has provided a forum for meeting and working with GPs in particular but also has done the same for Trust-based staff and
community groups.

- An acceptance that resources may have to be channelled towards specific populations perhaps at the expense of others. An important factor here is the coincidence of the views of people who live and work there and the evidence of population indicators showing there to be an unusual need.

- The existence of staff who are skilled in change management and who can persist in this for several years. The merger of the FHSA and DHA has undoubtedly helped in bringing people together for a common purpose.

- A strategic approach which intends to commit funds to primary care development.

Throughout this work, the ready availability of high level information on a locality basis has been of fundamental importance. In Avon, locality profiles are widely published and discussed with local health workers in particular and have often been the main reason for bringing different groups with different viewpoints together. Profiles which emphasise population outcome measures also serve to downplay the vested interests which inevitably influence priority setting and to promote health gain. Recently, GPs in South Bristol have greatly improved their approach to diabetes and talk increasingly of better services for the population, workers and residents of the locality. Population health outcome measures have played a key part. The Authority as a whole well understands the meaning of generic measures such as those discussed here and, like many others, is keen to monitor indicators specific to diseases and procedures as quickly as they can be devised.