

Purchasers have to ensure the services they purchase are effective, efficient and equitable. But most purchasers have confined their monitoring of contracts to measuring activity levels, lengths of stay and costs. There is little evidence that purchasers are routinely monitoring the accessibility, appropriateness and outcomes of health services, or that they are using their data systematically to improve contracts.¹

Using examples from the treatment of ischaemic heart disease, we discuss how purchasers can use the minimum contract data set to monitor access to health services and improve needs assessment, and how they can improve NHS information systems and the data they provide.

Providers are required to supply purchasers with information on every consultant episode: the minimum contract data set. This includes clinical information on diagnoses and operations, as well as demographic and administrative data such as age, sex and postcode.

To see if the data set could be used to monitor access to health services, Wandsworth health authority's public health medicine department carried out an analysis of data for 1990-1992 on admissions of Wandsworth residents for ischaemic heart disease.² The aims were to see if Wandsworth HA could use the data set to identify age, sex and geographical differences in use of hospital services, and improve the quality and monitoring of contracts.

We used routine data to measure the current impact of ischaemic heart disease and other cardiac diagnoses on hospital activity, and to identify potential inequities in the provision and use of health services. We discovered several problems with our providers' information systems, with implications for contracts.

Age and sex differences

We calculated by age group and sex the number of admissions of Wandsworth residents with ischaemic heart disease who had received reperfusion treatment (coronary artery bypass grafting or angioplasty). Men admitted with a diagnosis of ischaemic heart disease between 1990 and 1992 were 80 per cent more likely to undergo reperfusion treatment than women. Younger patients were also more likely to receive reperfusion treatment than older patients (see figure 1).

Explanations for these differences include: errors in the data set; differences in the severity of disease in men and women; differences in potential benefits from reperfusion treatment in men and women; increased comorbidity in elderly

people, making surgical intervention more risky, and age and sex bias in access to reperfusion treatment.

Our findings are consistent with those from previous studies, which have shown that after admission to hospital, men are more likely than women, and younger patients more likely than older patients, to be investigated and to receive reperfusion treatment for ischaemic heart disease.³

Geographical differences

To see if there were geographical differences in the use of hospital services, we compared death rates from ischaemic heart disease (a measure of need) with admission rates for ischaemic heart disease (a measure of use) in Wandsworth HA's 16 electoral wards.

We found that residents from electoral wards with high mortality rates from ischaemic heart disease had lower admission rates than the residents of wards with low death rates.

There are three possible explanations. First, the low death rate from ischaemic heart disease in wards with high admission rates may be due to high levels of hospital care reducing the death rate, although it is unlikely that hospital care would have such a dramatic impact on death rates. Second, the hospital admission rate may be appropriate in areas with high death rates from ischaemic heart disease but excessively high in areas with low death rates. Third, this relationship may be an example of the inverse care law: the provision and use of healthcare are inversely related to the need for care, with patients at high risk of death from ischaemic heart disease making less use of hospital services than those at low risk of death.⁴

Needs assessment

The impact of many diseases is often underestimated because they are not common causes of death. When we examined admission rates for cardiac diagnoses other than ischaemic heart disease, we found diseases such as heart failure and arrhythmias were common causes of



AGE	SEX	POSTCODE
34	female	SW17 YRE

Purchasers can use the minimum contract data set to improve their monitoring of local health services, argue

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admission, especially in elderly people, but were often not recorded as a cause of death (see figure 2). Diseases such as heart failure can have a major impact on the health status of a population and result in many hospital admissions, but because they are often not recorded as a cause of death their impact on health status is often underestimated.

There have been many advances in the management of heart failure and arrhythmias in recent years. Purchasers can therefore discuss with local GPs and hospital clinicians how to improve the management of these diseases. The example of heart failure and arrhythmias illustrates the need for purchasers to analyse data systematically if they are to identify all the conditions that have a major impact on the health status of their population and on the use of healthcare resources.

Problems with information systems

■ **Data errors:** coding of procedures. Angiography is always carried out before reperfusion treatment and usually we

would expect twice as many patients to undergo angiography as reperfusion treatment.

But our analysis of inpatient data revealed that reperfusion treatment was carried out in more episodes than angiography. This suggested there was a problem in the coding of these procedures.

Subsequent discussion with clinicians revealed that many angiographies carried out in our local provider unit were not coded. This confirmed our suspicions about the inaccurate coding of data.

■ Lack of process and outcome measures.

The data set does not contain important process measures that are indicators of the quality of care. Examples from the area of ischaemic heart disease include whether patients admitted with a diagnosis of acute myocardial infarction received streptokinase and aspirin, and the delay between admission and treatment with streptokinase.

Other problems with information systems include the lack of quality assurance of the data collected; the difficulty of linking activity data to financial data; and limited data on the outcomes of clinical care.

The only outcome measure readily available from routinely available data is mortality, and using this to assess quality of care in provider units is difficult because death rates depend on case-mix as well as on the quality of clinical care. One solution would be to develop better methods of measuring case-mix. This would allow an accurate comparison of hospitals and make hospital league tables of death rates more meaningful.

Systems development

What can purchasers do to maximise the potential of current information systems?

■ Improve the accuracy of routine data.

Purchasers require accurate, timely information to monitor contracts effectively. Purchasers could collaborate with clinicians to set up clinical audit programmes aimed at improving the completeness of clinical coding. For example, does the information in hospital notes agree with information recorded in the data set? Are all episodes coded? Is the coding of procedures complete? What is the average time between discharge and data becoming available to the purchaser?

■ Develop protocols for the analysis of routine data.

Purchasers need to define what data they need, and how to collect and analyse it. Well-designed protocols have many potential benefits. They can simplify the process of data analysis, allowing junior

information staff to carry it out. They can allow purchasers to identify age, sex and geographical differences in the use of health services more easily. They can help purchasers assess need, give them better information on how resources are being used, and help purchasers avoid breaking the terms of the Data Protection Act.

■ Develop statistically sound methods for measuring the process and outcome of clinical activity. Better process and outcome measures are needed for three reasons. First, to allow purchasers to identify the often large variations in the way individual clinicians from the same specialties treat patients; second, to allow purchasers to monitor the provision of care to their residents; and third, to allow purchasers to compare the outcome of care from different providers.

Purchasers must carry out these tasks successfully if the internal market is to succeed in rewarding provider units that provide high-quality, cost-effective care.¹

■ Develop methods of linking consultant episodes to individuals.

This is one of the major problems with hospital information systems. We do not know if apparent increases in activity are due to providers treating more patients; and we cannot calculate accurate, person-based rates using episodes as the denominator. Purchasers require methods of linking episodes to individuals to enable them to monitor care received by their residents more effectively. The introduction of the new NHS number may allow better linkage of consultant episodes to individuals.

■ Use the results of data analysis to improve the contracting process.

Are purchasers routinely using the results of their data analysis to improve the contracting process? For example, have they discussed with their providers whether age and sex differences in treatment are clinically justified? Are locality purchasing teams using data on geographical differences in assessing the need for and use of health services? Are providers correcting

Figure 1. Percentage of Wandsworth residents admitted with a diagnosis of ischaemic heart disease between 1990 and 1992 who went on to receive reperfusion treatment

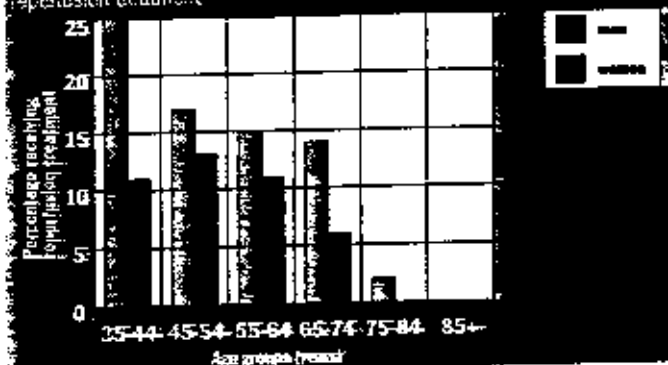
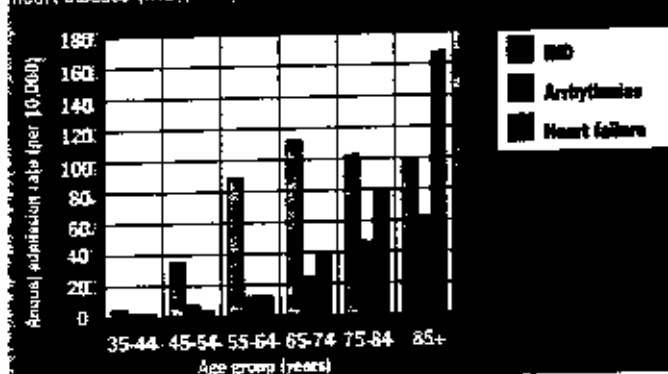


Figure 2. Annual admission rates per 10,000 Wandsworth residents for ischaemic heart disease (IHD), arrhythmias and heart failure between 1990 and 1992.



problems with their information systems?

Although purchasers and providers have used the minimum contract data set mainly to produce financial and activity data, we have shown this data set can also be used to monitor access to health services and to help purchasers assess need.

But the minimum contract data set has many limitations, the most important of which is the lack of information on the quality and outcome of care. If purchasers are to monitor their contracts more effectively, and make informed decisions on what services to purchase and where to place their contracts, they will need to collaborate with providers to overcome this limitation, and to start to improve the quality and usefulness of routine data. ■

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