

## **MEASURING DOCTORS' PERFORMANCE – UNITED KINGDOM**

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### **INTRODUCTION**

Measuring doctors performance is a complex issue because doctors rarely work alone. A surgeon's survival figures could be made worse by a poor anaesthetist or appear better than expected if the pathologist rated tumours as more malignant than they really are. This paper is based on experience in one English region, the West Midlands, centred on Birmingham with a population of 5.2 million. Both of these issues have occurred in my region in the last decade.

Performance assessment is perhaps too formal a term to describe much of what is set out here - a better term might be performance intelligence. Formally assessing performance may ultimately involve disciplinary processes which in the United Kingdom (UK) can be lengthy, legalistic and expensive. No employer wishes to embark on such procedures unless it is essential but equally no one wants to leave a doctor to continue with dangerous or dubious practice. Performance intelligence is the science and art of knowing when and where to act.

### **WHAT MAKES UP PERFORMANCE**

The UK General Medical Council, in the guidance that underpins their work on both performance and revalidation, describe performance under a number of headings:

- keeping up to date;
- teaching and training;
- maintaining trust;
- working with colleagues;
- health;
- conduct;
- good clinical care; and
- treatment in emergencies.

In this paper I describe how these can be approached by those responsible for the management of the National Health Service (NHS). I make no attempt to describe procedures in private practice.

For each of these areas it is possible to find sources of information that can assist those responsible to make a judgement that all is well. These headings can also provide a template for appraisal discussions. In addition appraisal needs also to include an annual discussion of work plans, management responsibilities and other local issues.

To some extent it is surprising that research activity is not included in the list. In the UK system for paying senior doctors (consultants) there are additional payments for

'meritorious' work and contributions to research feature in that assessment, as do management and professional activities and service development.

There have been a number of well publicised cases of doctors whose performance has been aberrant. This has led to considerable public discussion and it is likely that there will soon be new national guidance within the NHS which will clarify how expected standards are to be maintained. Because this new guidance is awaited this paper concentrates on the practicalities of delivering assurance about performance across a region.

## **THE ORGANISATIONAL CONTEXT IN THE UK**

The NHS in the UK is managed by the devolved governments in Scotland, Wales and Northern Ireland and by the Department of Health in England. This article relates to England, though the principles would be the same in the devolved regions. There are eight English regions each of which is overseen by a regional office of the NHS executive. These are part of the civil service. In the past there was a degree of separation between the functions of the NHS Executive and the Department of Health, though both were part of the civil service and responsible to the same ministers. This distinction is disappearing under the current Government. Regional Offices are acquiring wider functions in relation to population health generally and liaison with other government departments in the region and in effect becoming the regional offices of an integrated Department of Health. The primary unit of population to which resources are allocated is the Health Authority and other aspects of the administration and management fit around and within health authorities.

### **Health authorities**

There are 13 in the West Midlands and about 100 in the England. Their populations range from a million in Birmingham to under 200,000 in Herefordshire. Almost the entire NHS budget is allocated to Health Authorities. The allocation is based on a formula that takes into account the likely needs of their population. Health Authorities then deploy this money to hospitals and other service providers in order to secure a comprehensive health service for their population. Most of the money inevitably goes to hospitals and other providers of complex services but the health authorities also employ primary care staff (see below). Health authorities also employ public health doctors, one of whom must be a member of the board as the Director of Public Health. Health authorities are responsible for developing strategy across their population and for liaison with other statutory and voluntary agencies. They are obliged to produce an annual Health Improvement Plan and a Service and Financial Framework which set out how they will deploy their resources in order to improve the health of the population. Within that they must take a view about likely manpower needs including the medical manpower that will be needed in order to deliver the services for which they contract for.

### **Hospitals and other providers**

NHS trusts are public bodies within the NHS and are the means through which the bulk of NHS services are provided. These are self managing organisations which are accountable to the NHS Regional Office for both the quality, financial balance and probity of their services. Trusts may provide hospital services but there are also trusts that provide

exclusively community or mental health services and some provide a mixture. Within these trusts most doctors are still employed on national terms of service but some trusts have developed their own contract for career grade doctors. All doctors in training are employed on a joint contract where half of their salary is paid through a national system responsible for postgraduate medical education and half of their salary is paid by the trust. They are obliged to have at least the chief executive, a medical director and a finance director as executive directors.

### **Primary care**

Primary care is now organised into groupings, not surprisingly called Primary Care Groups (PCGs), which include all the general practitioners covering populations of about 100,000. PCGs are sub committees of Health Authorities, though they expected to have a degree of independence. In the future all these will become Primary Care Trusts (PCT) which have greater independence and will be able to own property and both provide primary care services and also commission secondary care. They will have a budget determined by the health authority but based on a national formula. They will be accountable to Health Authorities which will normally be responsible for several PCTs.

General practitioners (GPs) are employed by Health Authorities through two possible mechanisms. The most common method is as independent contractors within a contract whose terms and conditions are negotiated nationally. The alternative is through an arrangement which only became available through a new NHS act in 1997. This allows for salaried GPs and others to be employed through schemes known as Personal Medical Service (PMS) schemes. Each of these schemes has its own contract in which the population coverage and quality of the service is defined. Groups of GPs and other organisations such as NHS trusts may enter into these PMS contracts but there is no provision for the private sector to do so. The national contract for GPs is very limited in the quality standards that it sets so Health Authorities have little scope for improving the quality of NHS GP services other than through persuasion. PMS provides for a more substantive quality framework. There is currently considerable interest in PMS schemes and if the current interest continues it could become the most common way to provide GP services in the future. If this happens it will represent a sea change in the culture and deployment of GPs.

### **MEASURING DOCTORS' PERFORMANCE**

Any doctor who is registered can set up in private practice but in the NHS there are two types of career grade doctors who are able to practise without supervision. These are consultants in hospitals and health authorities and GPs in primary care. The remainder of this paper relates to these career grades and mostly to hospital practice. In primary care there are many less systems available because the model is essentially that of the independent practitioner. PCGs and PCTs have a responsibility for clinical governance and are beginning to develop systems for monitoring and developing standards of practice. When the inquiry into Dr Shipman has reported there will no doubt be further developments.

**Keeping up to date**

There has been a progressive change over the last few years to make continuing professional development effectively compulsory. Most Royal Colleges are now bringing in systems through which all members keep some sort of diary that records their continuing professional development (CPD) activities. These are usually categorised under a number of headings such as formal educational sessions, reading, preparing lectures and teaching etc. Although these systems do not detect that anything has been learned as a result of the activity they do at least detect those who are not engaged in any visible CPD activity. If CPD is used as one of the things to discuss in appraisal interviews the local medical manager has a basis for deciding whether the individual doctor really is keeping up to date.

**Teaching and training**

This is relatively easy to monitor in most trusts because there are formal relationships. Most consultants have junior staff who they are expected to train. All doctors in specialist training posts have an annual assessment which serves to provide a quality check on their supervisor as well as on the trainee. The Post Graduate Dean who oversees this process has the power to remove trainees from a consultant if the training that they are given is not good enough. If such an event occurs the medical director of the trust will also be informed and it provides an opportunity to trigger a more systematic review of performance. The system for general practice is similar, in that practices are approved for training and this approval has a fixed time period. Reports from trainees go to the relevant part of the Post Graduate Dean's department and action can be taken if the quality of training deteriorates.

**Maintaining trust of patients**

There is a standardised complaint system across the UK. All Trusts are expected to log complaints and the trust board is expected to review these annually. Each general practice must have a complaint handling system and there is an appeal mechanism. Complaints that go to appeal are sent to the Regional Office as part of the monitoring process. When complainants are not satisfied the process for an appeal provides for an opinion from independent experts. It rapidly becomes visible if a particular consultant or general practice has more complaints than would be expected. Obviously there are some areas of practice where there may be more complaints because death is more likely or cosmetic results more obvious but it is easy for a medical director to take this into account when judging the record of an individual consultant. Litigation in the UK is becoming more common but is still a relatively rare event when considered in relation to the total number of care episodes. Because the sums awarded may be disproportionately large in certain areas the actual amounts do not usually give a good guide to performance. It is however the case that numbers of cases going to litigation may give a clue to performance and any individual case might be used as a trigger for a more systematic review of performance.

**Working with colleagues**

Most doctors now work in teams. These include other doctors as well as a range of other staff. Senior doctors are expected to provide leadership and supervision and should also set an example to which others aspire. Systems to bring a view of their performance to medical directors are relatively rare. Most trusts rely on there being good relations between

senior medical managers and senior managers responsible for other staff. If things are not working well word should get up through the nursing or other managerial hierarchies. Sadly this does not always happen. Work still needs to be done to flatten hierarchies and ensure that important information travels upwards at an effective rate. In the worst organisations, which are bad at learning, bad news travels upwards very slowly but sideways at the speed of light. Only those managers with their ears to the ground hear anything.

In general practice it is probably more difficult for poor relationships to come to the attention of someone who has the power to intervene. In larger group practices there is usually some form of management process but in smaller practices it is more likely that staff who were unhappy about the behaviour of doctors would simply leave. Hopefully PCGs and PCTs will find some way into this.

### **Management and supervision**

Many doctors have formal management responsibilities but others will have influence which is not formalised. Doctors are often not trained in exercising authority and influence and some may have little insight into the impact of their activities. It is essential that these issues are covered in appraisals so that there is learning year on year. This enables poor performance and bad habits to be challenged but it also enables the organisation to spot talent and do some succession planning to ensure an emerging supply of future medical leaders. Once again the emerging structures in general practice provide the first opportunities to address some of these problems in primary care.

### **Health**

Physical health would appear to be easy to monitor but may present some problems where chronic deteriorating conditions exist. We had a notorious case where a pathologist had multiple sclerosis (MS). The precise contribution that failing eyesight made to an increasing number of errors was never exactly clear because the errors took place in the context of an increasing workload and an increase in the complexity of cases referred to the surgical team. The problems were further compounded by cultural factors which meant that the errors were not discussed within the team or drawn to the attention of management. It is easy to be wise after the event and think that it must be obvious that MS might be a risk factor in a pathologist's performance but unless these things are discussed in regular appraisal they may well progress too far before action is taken.

Failing mental health or development of drug abuse may be equally difficult to detect until some catastrophic failure occurs and causes closer scrutiny to occur. Health problems in general practice are even more difficult to deal with, especially in small practices where there is no organisation and hence no local governance framework. Again it is to be hoped that the new forms of organisation will have an impact. The expansion of PMS probably presents the best chance because this creates a much more normal contractual framework in which doctors become employees rather than contractors. In that relationship they acquire both responsibilities and rights. It becomes possible for someone to intervene if a practitioner begins to behave in an unusual way and also provides a possible mechanism for supportive action to be put in place.

## **Conduct**

Conduct covers a wide range of issues but is a convenient heading in which to discuss what the expected range of normal behaviour should be. Most older consultants will tell stories of 'characters' in the past who were clearly larger than life (and their image has possibly been further amplified by the telling). On this anecdotal basis it might appear that most conduct these days is within expected limits but it is surprising how much deviant behaviour is tolerated if it is done by senior figures who are difficult to challenge.

When a consultant who is not disabled regularly parks in the disabled parking space because it is closer to his office what should we make of it? Is it arrogant conduct that might be an indication that this man listens to no-one and might not learn from errors, or is it a busy dedicated hero, striving to perform to the peak of efficiency looking for every last second that can be saved from non essential activities. Whose job is it to notice such things and who do they tell?

Lois Parker in her teaching sessions on error management says that clinical governance comes down to 'knowing when to speak up and knowing how to'. Most people don't know either and will continue to keep their heads down unless trained and encouraged.

Deviant conduct may be the first sign of a problem emerging. In one of our trusts a consultant who gave cause for concern was also once suspended for gross rudeness to a member of the administrative staff. The rest of the story is detailed below in the section on clinical care (and see also figure 4).

Again the situation in primary care is less structured but the new organisations and contracts may help.

## **Research**

Many consultants will say that they do research. It is possible to assess quality in a number of ways. External grants obtained are a well used method of judging quality as are the papers produced. In addition to those sources it is possible to look at submissions to the ethical committee. Do the proposals from a particular consultant usually get through without modification or does the ethical committee often ask for amendments. If there are amendments in what sort of areas; patient information, statistical design etc. In the UK, new guidance on research governance ([www.doh.gov.uk/research/announcements/researchgovernanceconsult.htm](http://www.doh.gov.uk/research/announcements/researchgovernanceconsult.htm)) has just been promulgated for comment and this will mean that each Trust will need to develop an internal set of systems which will also no doubt provide material for performance intelligence.

## **Good clinical care**

The intelligence gathered from the previous sections will often point to someone whose performance is doubtful. It is unusual for a failing doctor to only appear on one of these counts. Most of the major cases encountered in my region in the last 10 years have been clearly deficient against several or even all of these headings. There remains however a view that if the clinical results are OK almost everything else can be forgiven. This is

probably an error of thinking because clinical performance is one of the hardest things to assess. If the results of a group of doctors, all of whom are apparently doing similar work are compared then we will find a range of results that correspond in most part to a normal distribution. If we ask a statistician we will be told that most of this variation is probably due to chance and formal estimates of probabilities can be calculated.

### **SYSTEMS IN USE IN THE WEST MIDLANDS**

In this section I wish to describe our experience with trying to use routine data available in the NHS to assess consultant performance.

Several years ago I was asked to meet a deputation of consultants from a particular trust in the region who told me that they were worried about the performance of one of their colleagues. They described a number of aspects of his conduct and behaviour which appeared aberrant but they had failed to make any progress with the trust management because no-one could be sure that his results were poor. In summary this colleague was reclusive and sometimes rude to patients and colleagues. The deputation asked me if there was any way that I could tell from regional data whether this surgeon was bad enough to worry about.

#### **What data is available**

The Hospital Episode System (HES) collects data about every hospital stay. This includes up to 6 diagnoses and operations as well as demographic information and data about source of admission, emergency, elective etc. and discharge, to home, other hospital etc. From this it is possible to calculate death rates, re-admission rates length of stay and to standardise these for age and sex and to adjust for casemix in various ways. It is possible to link this data with out of hospital deaths by using matching algorithms which achieve matches in most cases. It is also possible to add in census data in order to make some estimation of the impact of social deprivation and other social and geographic variables, like distance travelled.

#### **What are the drawbacks of this approach**

The most obvious drawback with this approach is that the data was not collected for this purpose. This may in fact undermine the whole enterprise because thinking on data protection is moving towards explicit consent for all data. This could make it impossible to use data unless the patient and the consultant concerned both consented in advance. Whilst it might be possible to achieve that as a condition of employment for consultants it is likely that some patient objections could make the data sets incomplete and less reliable.

#### **What does the data look like**

Figure 1 shows the expected normal distribution. The case fatality rate in hospital has been standardised for age and sex. No attempt has been made in these graphs to weed out those so called general surgeons or physicians who are in fact doing a very specialised casemix but have not been classified as more tightly defined specialists.

A similar normal distribution is seen for length of stay and for re-admissions (figures 2 and 3).

All this data shows us is that for most doctors it will not be possible to distinguish their practice from others with any degree of statistical reliability. Further more it shows the folly of publishing league tables because most of the table would be covered by statistical uncertainty. It may be possible to identify a few persistent poor performers and it may be possible to spot a few stars. Our own analysis has shown that there are some correlations with the other sources of data. Doctors who persistently feature in the complaints files are more likely to be in the worst part of the distributions on death and length of stay. Similarly those with higher merit awards are more often in the upper part of the table but none of these give more than a trend. There are no absolutes.

Whilst the absolute position in a league table in any single year is unlikely to mean much it did seem possible that changing relative performance over time might be a useful marker. In order to study this we tabulated the rank order of the various groups of doctors over a 5 year period. We did not separate the different specialties because the particular groups tend to occur close to each other in the ranks. All the neurosurgeons and heart surgeons have relatively high death rates and all the plastic surgeons much lower ones. What becomes of interest is what happens over time across the ranks.

Figure 4 charts the career of one particular consultant referred to above in the conduct section. The consultant's steady deterioration in performance is demonstrated by a poorer ranking each year compared with a group of colleagues with a similar casemix. (It will be noted that the comparable surgeons appear to rise up the ranking table year on year. This is because the total number of consultants in the rank table has expanded year on year so the average ranking rises each year. Our index case is not rising at the same rate, thus indicating a deterioration in real terms.) In year 4 on the graph the consultant was referred for external peer review but it is noteworthy that this identified a few points for improvement but did not suggest that formal disciplinary action should be taken to improve performance. Throughout this period other markers were also deteriorating, there were arguments with colleagues and the post graduate dean did not allocate any training grade doctors to the consultant. Shortly after the last point on this graph the doctor concerned was suspended by the trust but died suddenly before any hearings were completed.

In these graphs the death rates have been standardised for age and sex but no other adjustment has been made. The relative rankings as compared with a group of surgeons doing similar work appear to provide enough of an idea of the effect of casemix for the purpose of detecting poor performance. It might of course be possible to get the same figures if this surgeon was being referred an increasingly complex or terminally ill case mix. If this was the case the local medical director would probably be aware of it and other markers, such as relations with colleagues, would probably also indicate that performance was good rather than bad.

Figure 5 shows changes in one trust over 5 years. It is interesting because series 1 is the surgeon about whom the original deputation visited me. There appear to have been significant improvements over the subsequent years. To some extent this is an illusion because the action taken by the trust was to limit his casemix for this surgeon to low risk surgery. By this means they reduced the risk to the trust and the impact of their action can be clearly seen. The behaviour problems remain but less people die after the operations. To some extent the other surgeons must have taken a more onerous casemix and this may have made their overall ranking worse. Again it does show that the data can be used to track the impact of managerial action. Whether one would want one's mother operated on by this surgeon remains a question.

### **What kind of issue can such a system detect**

In an individual trust it is likely that deterioration in individual performance will be suspected if not confirmed by local data. This is the more likely because it is unusual for technical performance to change without there being some other alerting factor such as illness, poor team work, poor training etc. The problem that the trust then has is to answer the question 'is this performance so bad that the doctor should be cautioned or dismissed?' In the NHS there is an assumption that it is one service so the test that the trust will need to apply if it is to be successful with a dismissal is not 'is this the worst doctor that we have? but is he or she so bad that they would be dismissed if they were working anywhere in the NHS?'. It is much more difficult for a trust to answer that second question but that is what an appeal against unfair dismissal through the legal system will be asked to consider. Furthermore a contested dismissal process is expensive and will almost certainly take a long time. The trust therefore becomes liable for salary costs while the doctor is suspended pending a hearing and for legal costs if it goes to an external tribunal. There have been a number of notorious cases where protracted and expensive processes have led to reinstatement, so everyone knows that the process is both expensive and uncertain. It is not surprising that in one recent case of a doctor who was eventually struck off by the GMC for incompetence the doctor concerned had been asked to leave a previous hospital and given £100,000 to persuade him to go. The trust thought this was preferable to the salary and legal costs that they would incur if they tried to dismiss the doctor.

### **Considering casemix**

In trying to answer these wider questions the issue of casemix becomes more important. This is something that has a significant literature that I do not propose to summarise but the issue is well demonstrated by a few examples taken from performance of consultants in my region.

It is important to remember that systems such as Diagnostic Related Groups (DRGs) (and Health Related Groups (HRGs) in the UK) were invented with resource allocation in mind rather than performance. They are iso-resource groups not degree of difficulty classifications or iso-risk groups.

It is nevertheless possible that there is some relationship between cost and risk. Some of the additional costs in the more complex HRGs comes from co-morbidities which might

indicate increased risk. For that reason we tried adjusting for HRGs in order to see if it made much difference to possible judgements about performance. More importantly we must remember the impact of age and sex and always standardise for those. Such adjustments can be made in an individual trust and may achieve some value in the larger trusts. However in order to achieve much accuracy it is necessary for the trust to have access to the database for the whole region or country. In the examples that follow it is the collected data for all hospital episodes in the West Midlands that has been used.

Table 1 shows the results for 4 consultants, standardised for the age and sex of patients.

**Table 1**

<b>Consultant</b>	<b>Standardised case fatality ratio</b>
A	101
B	99
C	228
D	76

On this basis it appears that consultant C has a much increased death rate. Table 2 shows the impact of adding HRGs to the standardisation.

**Table 2**

<b>Consultant</b>	<b>Standardised case fatality ratio</b>
A	154
B	153
C	88
D	47

The effect of this is to make consultant C look much more reliable and raise doubts about A and B.

It is possible to make some further adjustment for the impact of poverty. In the next table we added a further standardisation by using a poverty index attached to the home address of each patient. This allowed us to calculate a regression which told us the additional deaths associated with poverty. 18 bands were used, derived from the Townsend score - a well used poverty index in the UK.

**Table 3**

<b>Consultant</b>	<b>Standardised for poverty HRG, age and sex</b>
A	165
B	152
C	96
D	48

It can be seen that this makes A look even worse, takes some of the shine off C and makes D appear more than twice as good as might be expected.

Without wanting to draw conclusions as to whether any action should be taken against any of these doctors the examples serve to show that we should tread carefully if we try to ignore important things like casemix and poverty that might have an impact on the likely survival of any given patient which is quite independent of any effect related to the performance of the doctor.

There is of course a statistical limit to the amount of standardisation that can be sensibly attempted. Eventually there comes a point where too many cells in the analysis have too little data.

### **SPECIALISATION AND DE-SKILLING**

In the UK there has been a steady trend towards specialisation. This has created a pressure to aggregate hospitals into larger entities but in many cases local population pressure groups make it politically impossible to remove medium sized hospitals from medium sized towns (say populations around 100,000-150,000). In these small and medium sized hospitals there are conflicting pressures, towards specialisation in order to meet the demands of training and accreditation by external bodies and towards generalists in order to maintain an emergency cover. This means that surgeons whose elective work might be all breast surgery would still be expected to open abdomens and undertake other major procedures when they were the surgeon taking emergencies. These smaller hospitals simply do not have enough senior doctors to be able to take any of them off the rota for general cover. The question then starts to arise 'does de-skilling occur?' and 'are these specialists a risk when doing general work?'

We investigated this by dividing the work of each surgeon into that which was common, say a case every month, and that which was rare. For those consultants for whom a precise definition of their specialism was available, expressed as HRGs this can be used instead to classify their work into their specialism and the rest. For each surgeon we calculated an expected number of deaths by aggregating the death rates for all the same cases treated by all the other surgeons in the region. We did this for their common work and for the rare. We produced a directly standardised case fatality rate for common and rare work for each surgeon and we did this for both elective and emergency work. Once again the usual caveats apply in that some specialities have so few deaths that the figures may mean nothing and in most cases the death rates for electives are much lower than for emergencies. It is worth remembering that the performance question here in most cases arises in relation to the emergency work.

Figure 6 shows the data for one surgeon compared with the regional data for the same casemix. The wider confidence intervals for the individual reflect the lower numbers of cases. It can be seen that the confidence intervals for this individual overlap the regional figure in for both common and rare work. We would conclude that this surgeon was safe to have on the emergency rota.

Figure 7 shows an example taken from elective work. In this case the surgeon concerned has a worse average than the region for both common and rare cases but the confidence interval overlaps for common conditions. For the work this surgeon does rarely the confidence interval, though wide, does not overlap. This suggests that this surgeon should be encouraged to stick to a limited casemix of things that the surgeon does often.

These examples show that the technique has some power to address the question. Once again it has to be emphasised that such analyses should not be used alone because there may be other local factors that have to be considered.

### **Uncertainty and judgement**

Whatever systems are used to indicate the different aspects of doctors' performance there remains considerable uncertainty. This has been recognised by recent Government policy. In Supporting Doctors, Protecting Patients (see [www.doh.gov.uk](http://www.doh.gov.uk) for full document) there is a new proposal for assessment centres to be established. Arrangements to set up the service are being implemented at the moment. Under this system it will be possible for a trust to refer a doctor whose performance is giving rise to concern. The centre will then make an assessment of the doctor's performance and make recommendations for any re-training or other action. It is hoped that this will cut through the difficulties encountered in the present system. We do not yet know how the cost of the system will be allocated but even if the trust is charged for the doctor's salary and a proportion of the cost of the centre it is unlikely that it will be as expensive and time consuming as the current legal system. This should mean that referrals are made early and less patients are put at risk simply because managers are not sure how bad a doctor is.

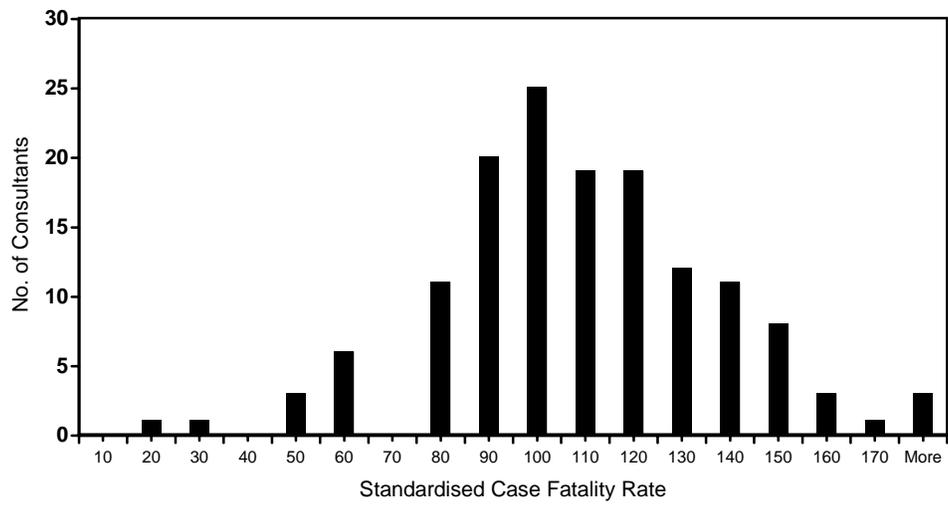
### **CONCLUSION**

In the British NHS as currently structured there are a number of ways in which doctors' performance can be examined. Routine data is available in the NHS which can allow performance to be screened and which can assist local managers when they have suspicions that performance is less good than it should be. There is considerable variation and it is not possible to reliably distinguish the performance of most doctors from the general average. In operational terms this means that we have to conclude that most doctors do acceptable work. It is also true that standards and results continue to improve. Most doctors work in teams and the statistical systems only tell us about the performance of teams, performance within teams can only be detected by audit processes within the team. Casemix and external influences like poverty have an impact on performance which must be evaluated in coming to any conclusion about an individual or a team.

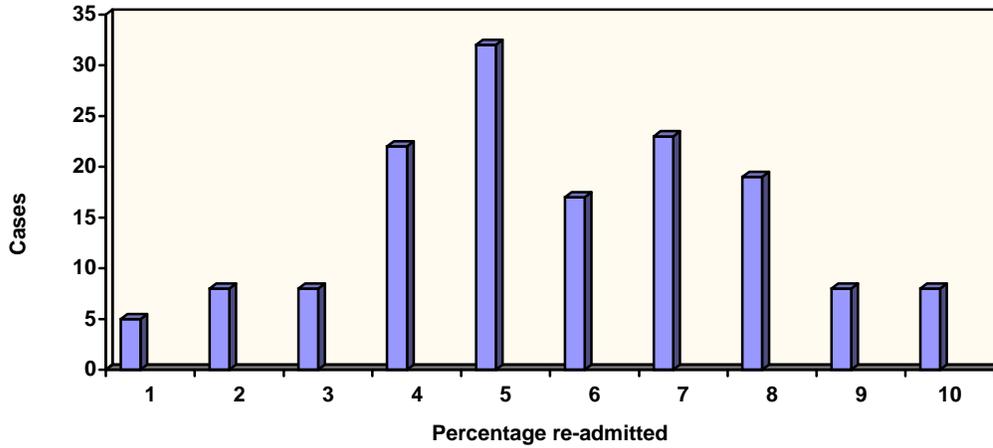
In primary care less data is available and the management systems are less well developed. It is possible to use data from prescribing and hospital referral but similar cautions apply.

Poor clinical performance is usually associated with poor or aberrant performance across a range of activities and relationships and any system for managing doctors' performance should look at each individual in the round and not just at data.

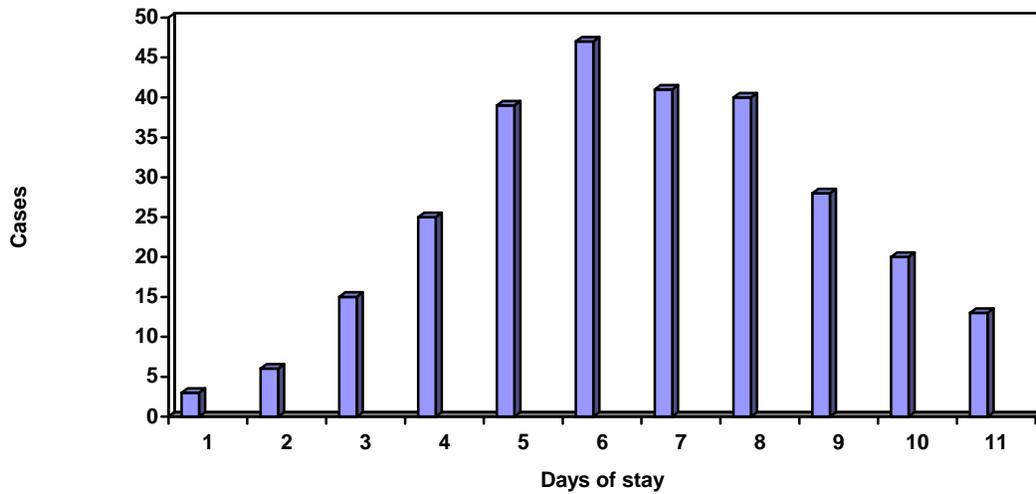
**Figure 1: General surgeons, standardised case fatality rate**



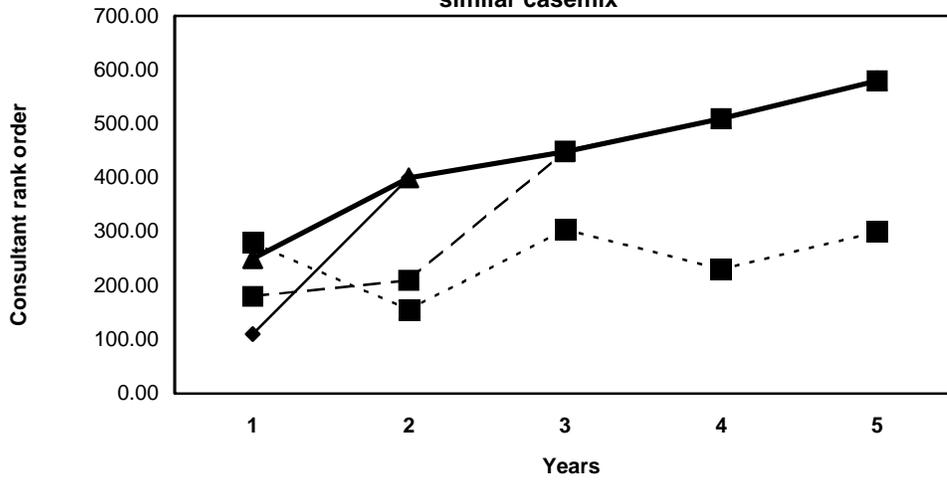
**Figure 2: General surgeons re-admission ratio, United Kingdom**



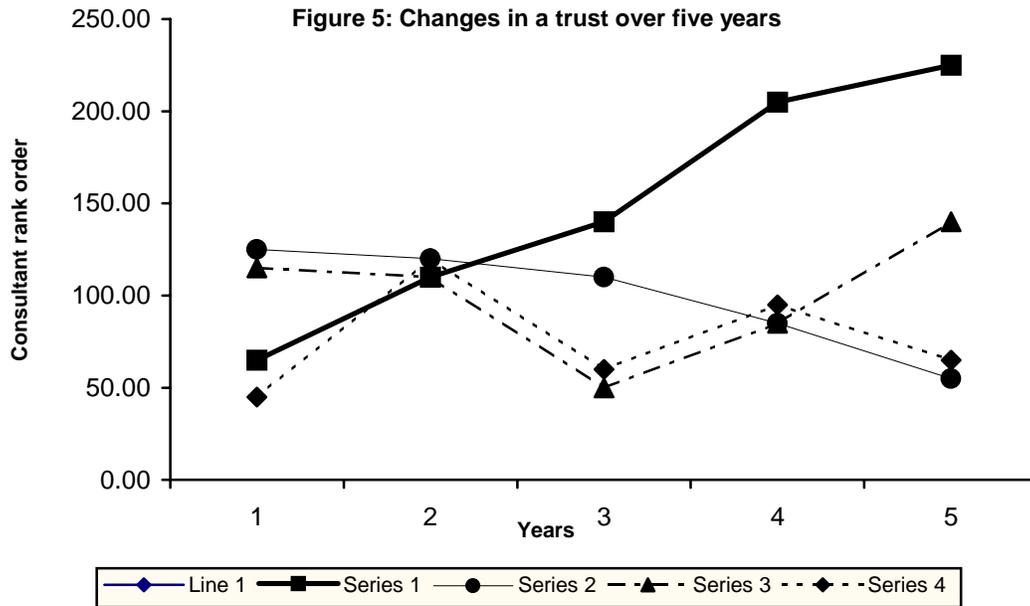
**Figure 3: General medicine length of stay ratio, United Kingdom**



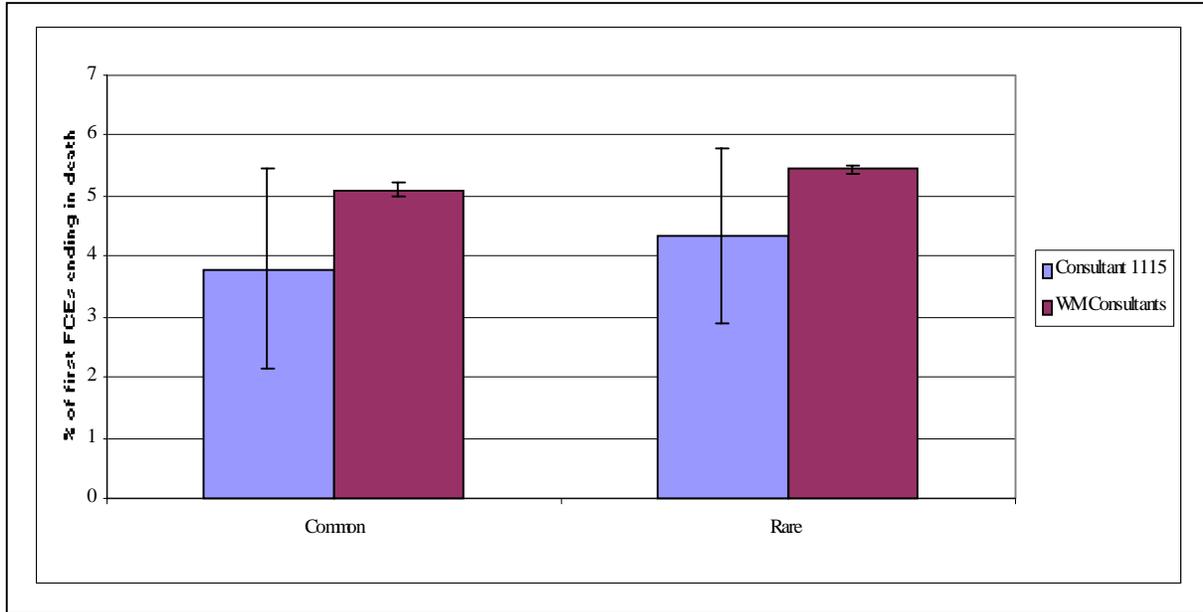
**Figure 4: Consultant rank order compared with colleagues dealing with similar casemix**



**Figure 5: Changes in a trust over five years**



**Figure 6: Percentage of first contact ending in death, individual surgeon compared with region, including elective work**



**Figure 7: Percentage of first contacts ending in death, individual surgeon compared with region, elective work**

