

Frontiers of Performance in the NHS

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MORI Social Research Institute

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Summary and Key Findings

Summary and Conclusions

As the government announces the next steps in the reform and modernisation of the NHS, this report highlights in some detail the key factors that determine overall patient perceptions. This research is particularly relevant and timely - one of the challenges facing the new Healthcare Commission is how much weight to give to patient perceptions, as opposed to financial or clinical measures of success, in whatever system replaces CHI's star ratings.

In this report we show that there are some very clear key drivers of patient perceptions that individual managers and clinicians *can* affect. There are others, however, that neither they nor the Department of Health can influence very much at all.

Our analysis provides an alternative picture of relative performance that suggests that some apparently under-performing trusts may actually be doing very well given local conditions, whilst some top-rated trusts are benefiting from operating under relatively 'easy' circumstances.

While there is always room for improvement, and individual trusts should not be complacent in striving to meet patient expectations, the results presented here do highlight the need for any new system of assessing overall performance to properly reflect local conditions, rather than assuming a level playing field. We show that, by looking beneath headline figures and being sensitive to local factors, it is possible to put patient perceptions in context and recognise that excellence looks different in different parts of the country.

Key Findings

The specific key findings of our research are summarised below.

- **Being treated with dignity and respect is key** to a positive inpatient experience. Other factors that contribute to positive perceptions of quality of inpatient care include cleanliness of hospital toilets and wards, effective communication with doctors, successful pain control, a well organised A&E department, and privacy during examinations and when discussing treatment.
- In comparison, the actual length of hospital waiting lists and other more '**objective**' performance measures (such as readmission rate, length of stay etc.) **bear very little – if any – relationship to inpatient perceptions**. This is despite the fact that the general public regard waiting lists as a fundamental measure of success.
- **What *is* important is the nature of the population served by individual trusts** – in particular, trusts serving more ethnically diverse areas with relatively young populations are rated less positively by patients.

For PCTs, higher levels of local deprivation are also linked to lower patient ratings. In fact, simply by knowing the characteristics of the local area in which a trust is based or the nature of the population served, we can predict patient satisfaction within relatively narrow ranges.

- It is clear from these findings that **perceptions of individual PCTs and acute trusts are 'constrained' by the local conditions under which they operate**, as well as the resources available to them. As such, it can be misleading to compare absolute levels of patient satisfaction (and other performance indicators) in isolation.
- Adopting a technique called Data Envelopment Analysis (DEA), **more meaningful comparisons** of the performance of individual trusts can be made, **taking account of performance achieved elsewhere by trusts operating under similar local conditions**. The results of this analysis show that certain trusts that would appear to be underperforming, on the basis of their patient rating score, are found to be performing at least as well as might be expected in the context of prevailing local conditions (e.g. the ethnic diversity and age profile of the served population). Others serving less 'demanding' populations, on the other hand, could and should be performing better than they are currently.

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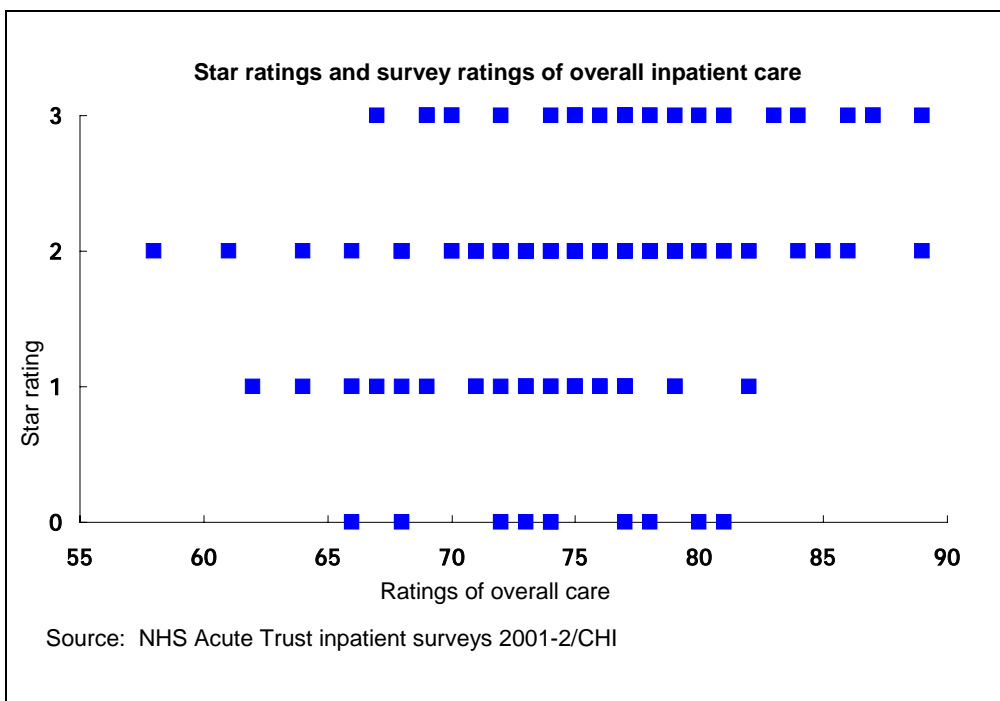
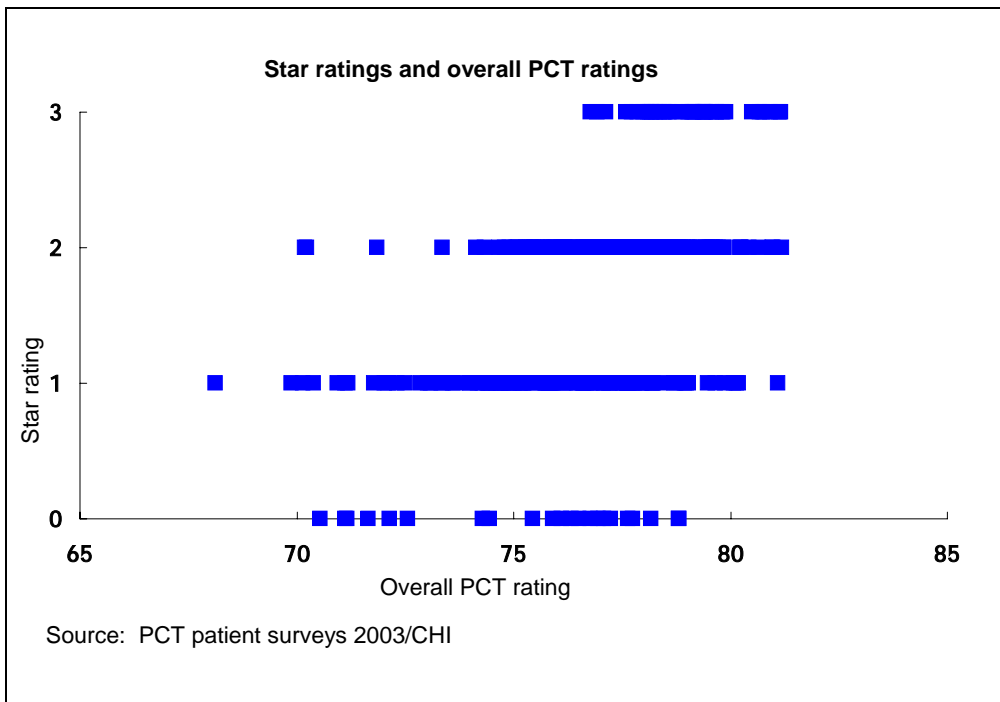
Measuring Performance in the NHS - setting the scene

On April 1st 2004, the Healthcare Commission took over the regulatory functions of the Commission for Health Improvement, as well as the Audit Commission's NHS Value for Money (VFM) work and the National Care Standards Commission's inspection of independent health care providers. The aim is to streamline the external inspection of health care organisations. Along with this shift in responsibility for performance measurement in the NHS, a review of the arguably controversial star ratings system is underway. It is not clear what the new performance assessment regime will look like, but it seems likely that there will be a greater focus on patient experience and their perceptions of the quality of care they receive.

The current star rating system aims to provide a summary measure of the performance of NHS trusts against a number of key targets and broader indicators of progress. Star ratings are currently determined on the basis of a wide range of evidence collected from individual trusts on clinical effectiveness, patient outcomes (including the results of patient surveys) and capacity/capability, plus information gathered as part of CHI's clinical governance reviews. A zero star trust is one that either fails against the key targets or is considered to have poor clinical governance. A three star trust, on the other hand, is one that does well on the indicators and, if a review has been undertaken, is considered to have good clinical governance.

Star ratings have come under criticism from a wide range of sources, not least because they are not very closely linked to patient experiences of quality of care. For example, analysis by the Liberal Democrats shows that there is only a two percentage point difference in terms of average patient perceptions of zero star and three star acute trusts. The following charts provide further evidence that, at present, the stars allocated to individual trusts do not bear a very strong relationship to patient assessments. For example, some three star rated Primary Care Trusts (PCTs) attract lower overall patient ratings than some PCTs with zero stars, and all but one of the zero star acute/specialist trusts in 2001/2 attracted patient ratings at least as high as the lowest rated three star trust.¹

¹ Unfortunately, no overall 'satisfaction' measure exists for PCTs and so we have used answers to specific survey questions to derive a composite ratings score. The appendices provide more details on how patient rating scores have been constructed.



Of course, this alone does not mean that the star ratings are meaningless, rather that they measure something other than patient satisfaction. It is worth noting, however, that the equivalent of NHS star ratings in local government, CPA (Comprehensive Performance Assessment) scores, do correlate reasonably well with general public perceptions of individual local authorities surveyed by MORI – here, there is a 38% correlation, despite CPA focusing heavily on education and social care, used directly by only one third of the public on average.

Against this backdrop, MORI has undertaken detailed analysis of data from two NHS patient surveys (the 2002/3 PCT patient survey and the 2001/2 acute and specialist trust inpatient survey),² along with financial and Census data, to examine what underlies positive patient experiences. Taking the analysis further, this report then describes why it is not reasonable to expect all trusts to perform to the same levels (in terms of patient assessment of performance at least), given the local constraints under which they operate.

Structure of the report

This report is structured around three main chapters.

The following chapter explores the forces that underlie positive patient experiences, considering a range of potentially contributory factors, including:

- patient perceptions of specific aspects of the care they receive (e.g. how they are treated by doctors, cleanliness of surroundings, etc.);
- ‘objective’ performance indicators (e.g. hospital waiting times, length of stay, Standardised Mortality Rates); *and*
- local population characteristics.

Next, we examine the *relative* importance of various ‘exogenous’ factors in driving patient satisfaction and demonstrate how it is possible to predict satisfaction quite accurately simply by knowing the characteristics of the population served.

The final chapter compares actual patient ratings against what is realistic for individual trusts to achieve in the context of the local conditions under which they operate. As such, we are able to identify both under-achieving and ‘efficient’ trusts through more meaningful comparisons of performance.

² Both of these surveys were repeated in 2003/4, but the data are not yet available.

What Makes Patients Satisfied?

This chapter explores the factors that are at play in influencing how happy patients are with the care they receive from their local hospital and PCT, including:

- patient perceptions of specific aspects of their care, using data from the NHS inpatient survey;
- the role of ‘objective’ performance measures, such as mortality rates and waiting times; *and*
- the characteristics of the local population served by individual trusts.

Chapter Summary

- *Being treated with dignity and respect is **key** to a positive inpatient experience. Other factors that contribute to positive perceptions of quality of inpatient care include cleanliness of hospital toilets and wards, effective communication with doctors, successful pain control, a well-organised A&E department and privacy during examinations and when discussing treatment.*
- *The actual length of hospital waiting lists and other more ‘objective’ performance measures (such as readmission rate, length of stay etc), in comparison, bear very little – if any – relationship to inpatient perceptions.*
- *What **is** important, however, is the nature of the population served by individual trusts – in particular, more ethnically diverse areas serving relatively young populations (under 65 years) are rated less positively by patients. For PCTs, higher levels of local deprivation are also linked to lower patient ratings.*

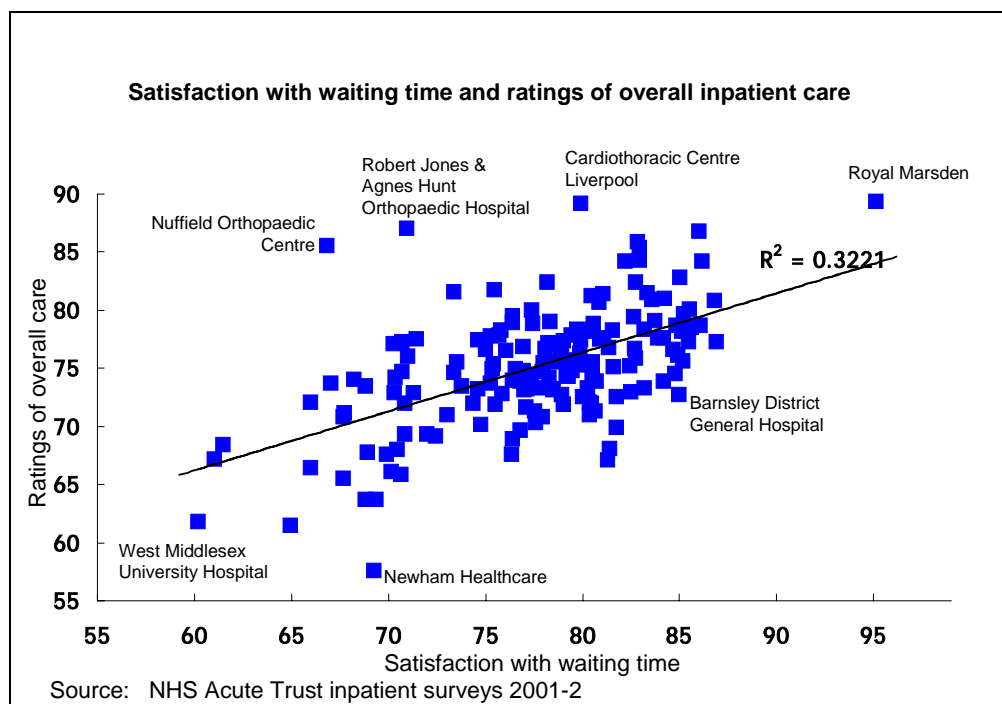
Perceptions of Specific Service Dimensions and Overall Patient Ratings

Using data from the 2001/2 inpatient survey, the relationship between very specific aspects of patients’ experience while they are in hospital can be shown to be very closely linked to overall assessments of the care they receive.³ The charts presented in this section illustrate these relationships, by plotting overall inpatient ratings of the quality of the care received against patient assessments of how long they had to wait to be admitted, how they were treated by doctors, how involved they were in decisions about the treatment they received, etc.

³ A comparable analysis of the PCT patient survey data has not been possible, as no overall satisfaction measure is available – instead this has been calculated from individual survey questions.

Waiting time is fairly important ...

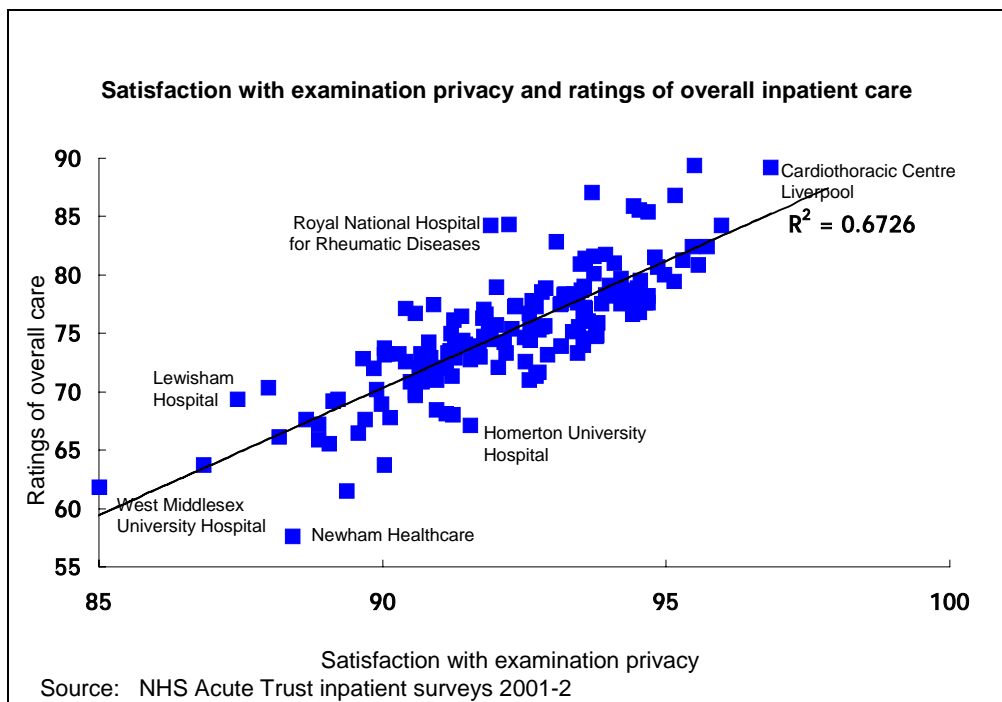
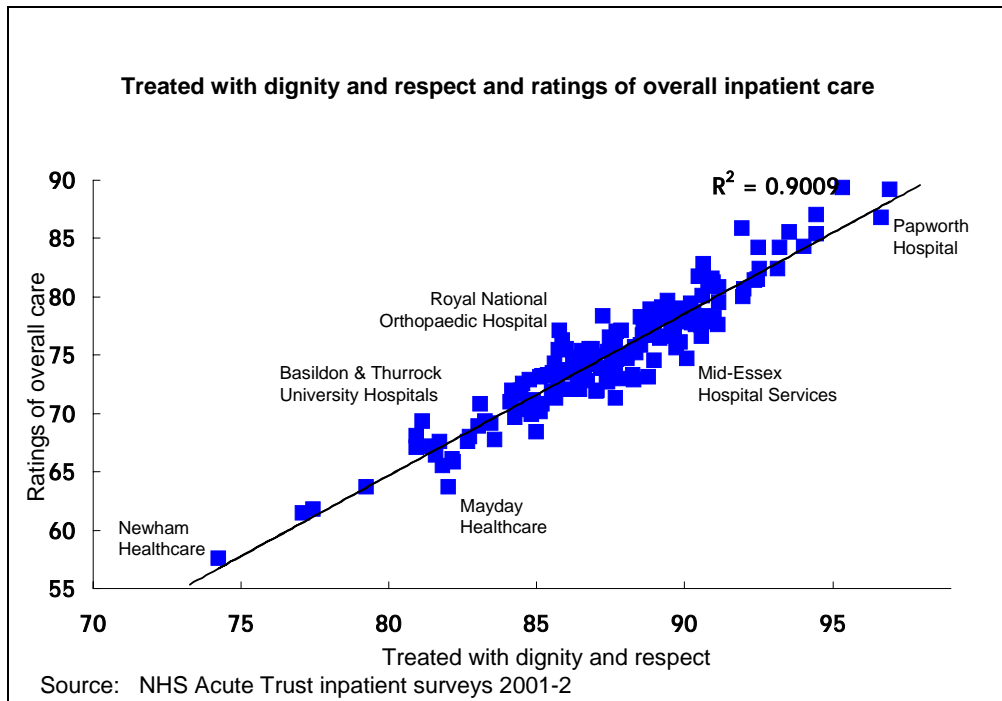
The chart below shows that inpatients who are less satisfied with the amount of time they had to wait before being admitted to hospital are also less likely to rate the hospital highly on the overall care they received. The chart shows an R^2 of 0.32, which represents a reasonably strong relationship between these two variables.⁴



... but not as important as being treated with dignity and respect, or privacy

However, looking at the two-way comparison in the following chart, it would seem that being treated with dignity and respect is far more important to patients than how long they have to wait to be admitted (showing an R^2 of 0.90, compared to 0.32 in the previous chart). Similarly, being given privacy (either when being examined or when talking things through with a doctor – only the former is charted here) is also very strongly related to positive patient experiences, but apparently slightly less so than being treated with dignity and respect.

⁴ R-sq values range from zero to one, according to the strength of association between the two variables. It is interpreted as the percent of variance explained. For example, if the R-sq is zero, then the 'independent variable' (e.g. satisfaction with waiting time) explains none of the variation in patient ratings. If the R-sq is 1 then it explains all of the variation.

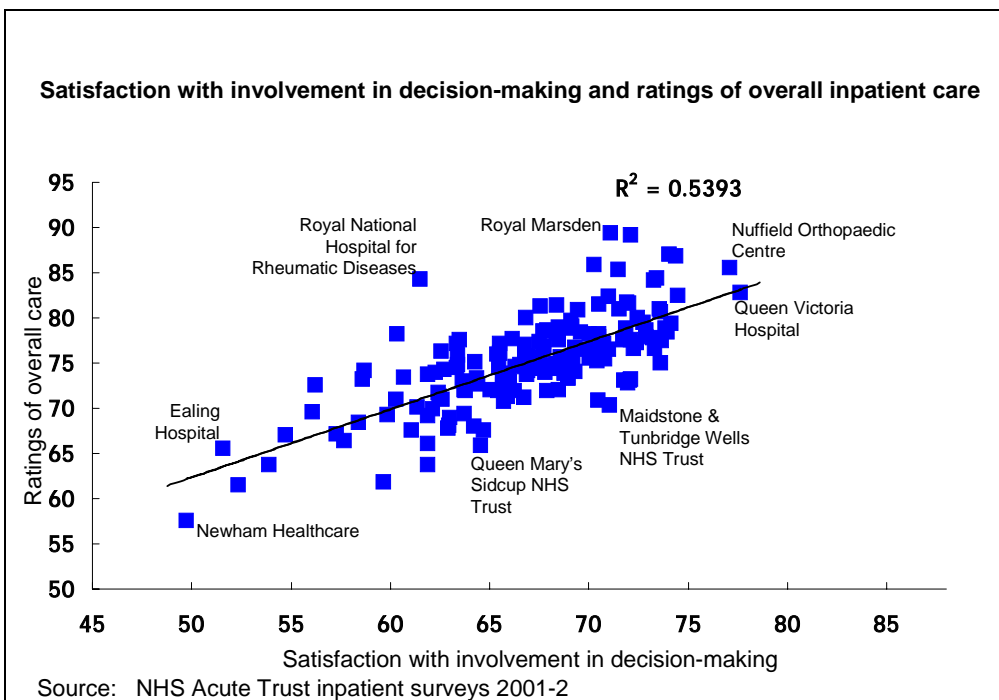
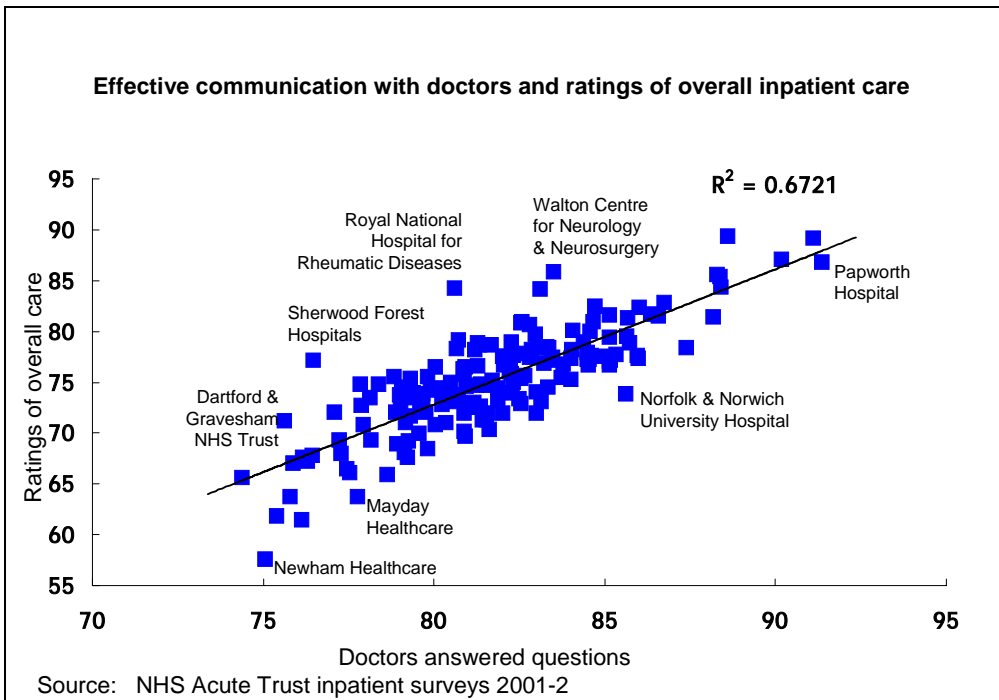


Communication and involvement also matter ...

Communication and involvement are consistently found to be strongly and positively related to overall satisfaction with public services. This is an aspect of service delivery that is easy to forget about or neglect, but our analysis shows that communications are a vital element in shaping views, as we find across just about all public services.

Specifically, getting answers to questions from doctors that are easily understood, and being involved in decisions about their treatment, both contribute to positive overall assessments of an inpatient’s stay. These findings

are of particular relevance in the context of greater choice for patients over where and how they are treated, a key component of both major parties' plans for the future of the NHS.

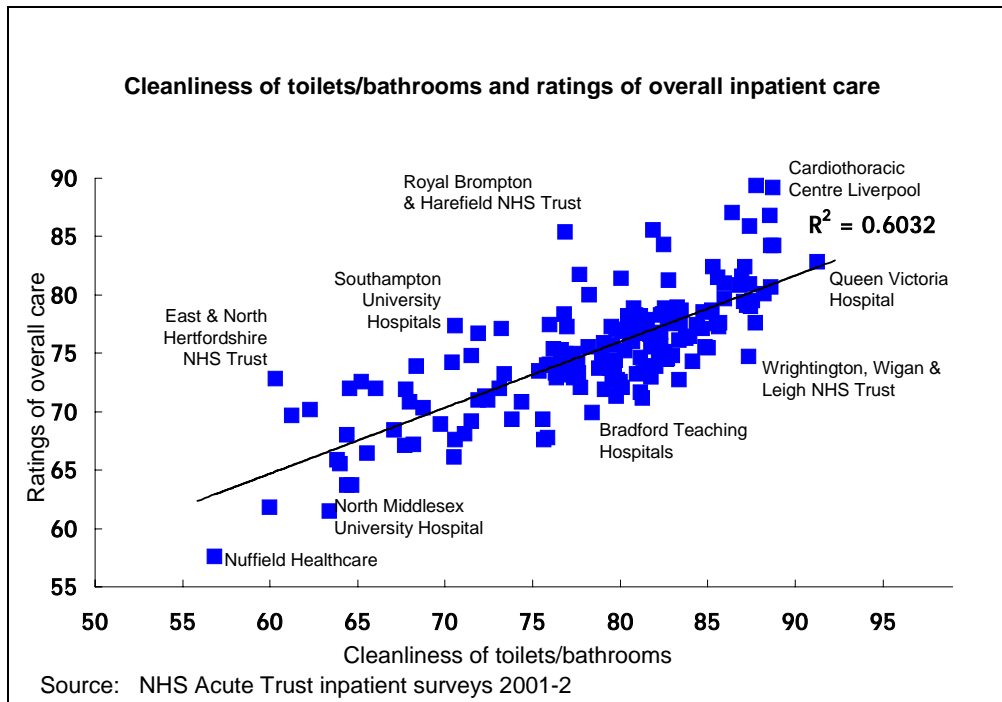


... and so do 'hygiene' factors

Cleanliness also matters a great deal to patients. For example, the chart below shows a strong positive correlation between how clean hospital toilets and bathrooms are and overall ratings of quality of care. Clean wards are also

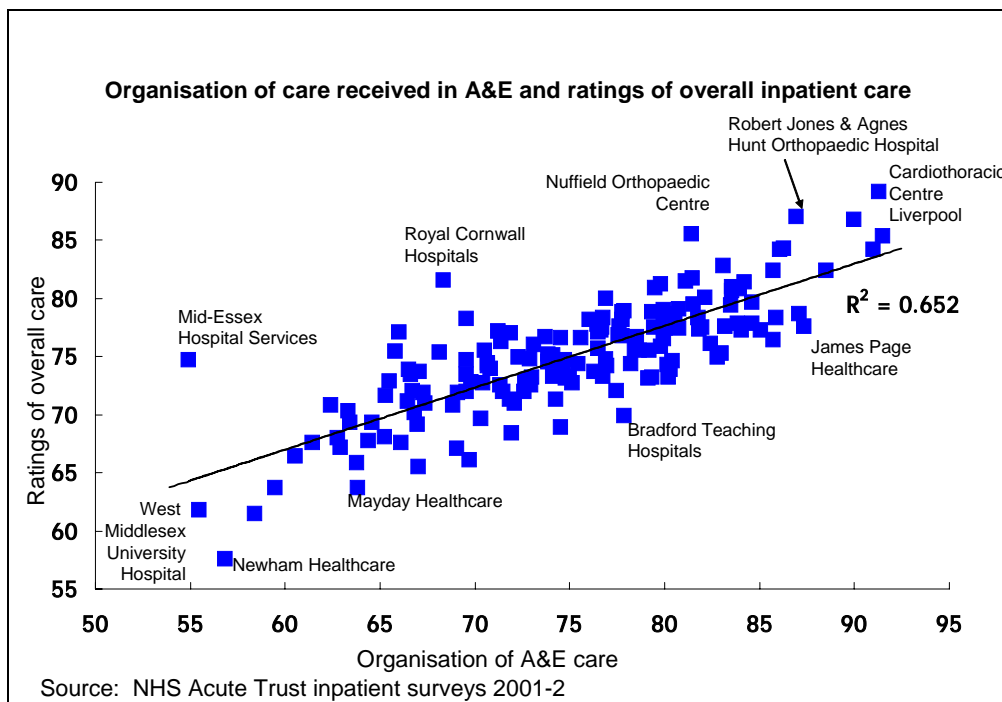
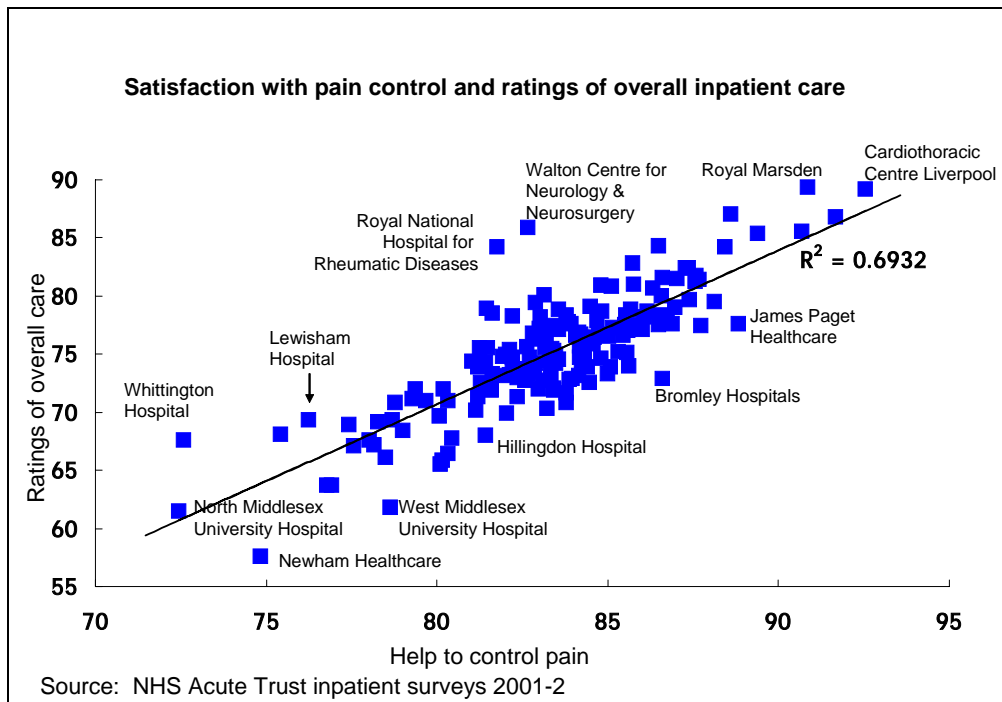
important – generating an R^2 of 0.58 when plotted against overall ratings (not shown here).

The quality of hospital food is similarly quite important to patients, although slightly less so than being cared for in clean surroundings (plotting this against overall ratings of care generates an R^2 of 0.4).



Perceptions of clinical competence and organisation are linked to positive patient experiences too

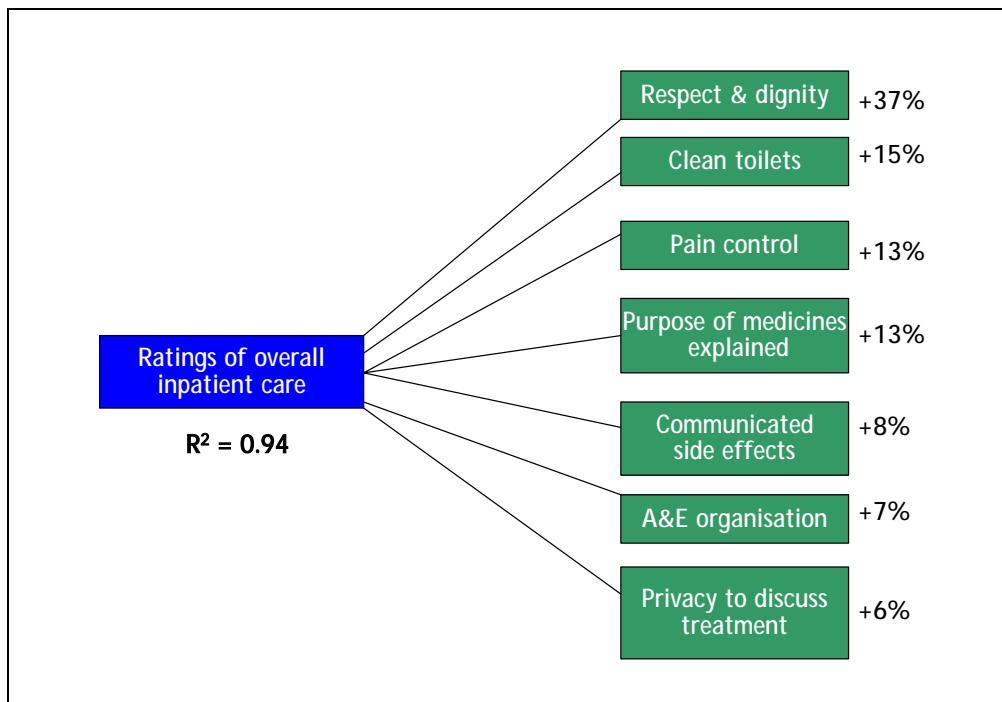
Taking pain management as a factor related to clinical competence, patients do indeed place quite high importance on this aspect of their care. There is also a strong link between assessments of how well-organised the hospital is (both in terms of A&E care and the admissions process – only the former is charted here) and overall patient perceptions.



But what service aspects are *most* important to patients?

The results presented so far are perhaps not surprising - people who are generally satisfied with their experience as an inpatient are likely to have positive views about most aspects of their care. However, what these simple bivariate relationships do not tell us is which aspects of their care matter to patients the most. Using multivariate analysis techniques, however, it is possible to identify the *relative* importance of these various factors, which can contribute to a better understanding of which particular aspects of care providers should focus on to improve the patient experience.

The results presented in the chart below show the relative importance of specific service aspects, scaled to 100. The positive signs against the percentage values demonstrate a positive relationship with overall ratings. The model demonstrates a very high R^2 - 94% of the variation in overall ratings of quality of care can be 'explained' by the included factors.⁵ The results corroborate those illustrated in the two-way scatterplots above – i.e. being treated with respect and dignity is the strongest predictor of overall satisfaction. Clean toilets,⁶ clinical competence (in terms of pain control) and organisation, privacy and communication/involvement are also confirmed as important factors underlying positive patient experience, all other things considered. Waiting time to admission, however, is not identified as a key driver of overall satisfaction, when all other aspects of care are taken into account.



⁵ Such a high value is linked to the very strong bivariate correlations between overall ratings of inpatient care and each of the 'explanatory' variables.

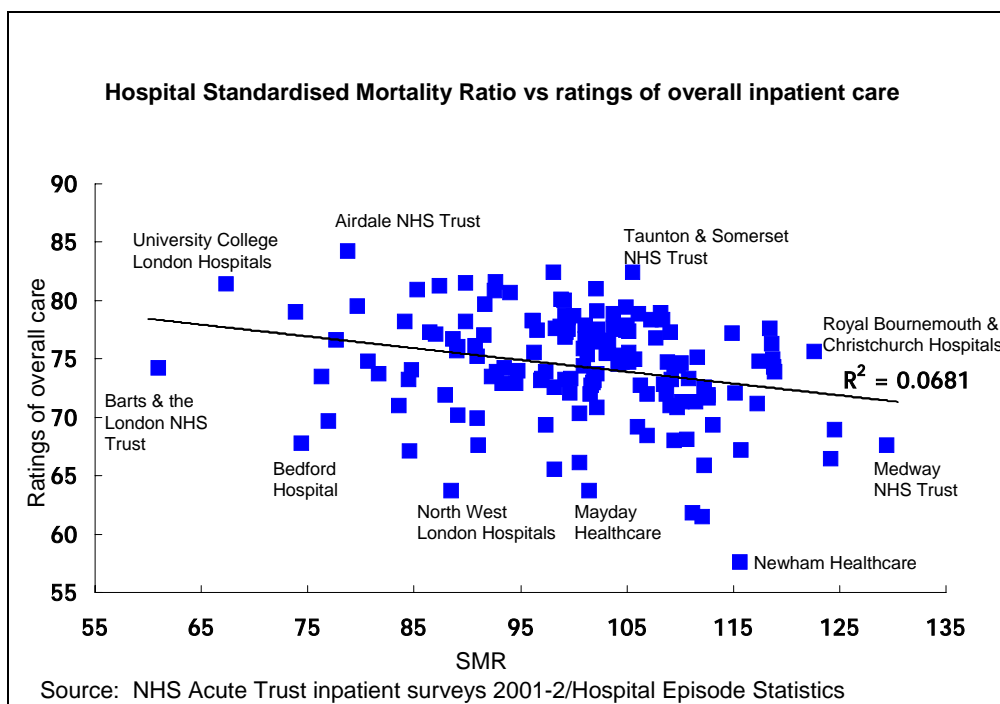
⁶ In fact, ward cleanliness is also a key driver of overall patient ratings, but due to its very high correlation with ratings of clean toilets/bathrooms, only one of these variables has been included in the model.

Patient Perceptions vs 'Objective' Service Delivery Measures

Patient views, of course, cannot be the only concern when trying to run a health service. To obtain a balanced view of performance, a wide range of indicators needs to be considered, not only user or patient perceptions. This is one of the challenges facing those designing any system of performance measurement within the public sector – how much weight to give to perceptions, financial and managerial measures and how much to clinical outcomes?

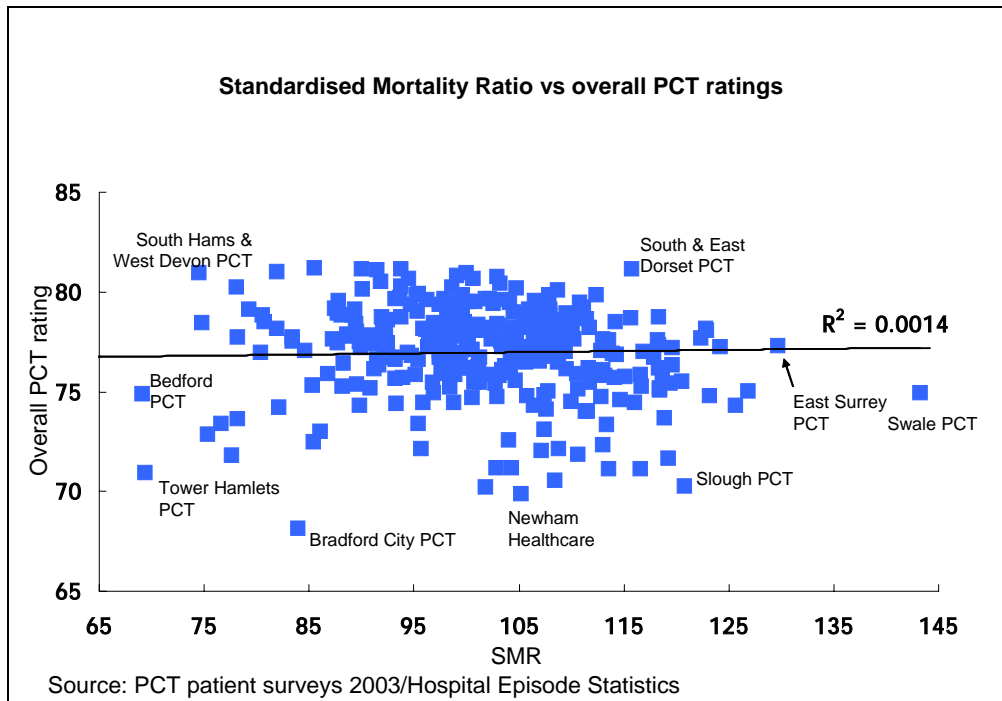
In fact, the quality of the patient experience, as perceived by patients themselves, does not always reflect 'objective' measures of performance, as was suggested by the chart mapping star ratings against patient satisfaction in the previous chapter. The results presented in this section suggest that how a trust is objectively measured as performing is far less important in shaping perceptions than individual patient experiences.

Of particular interest, while patient perceptions of clinical competence (using the example of effectiveness of pain control) have been shown to be strongly related to their overall ratings of the quality of care, a much smaller correlation is found with hospital SMR⁷ – arguably the strongest test of clinical competence.

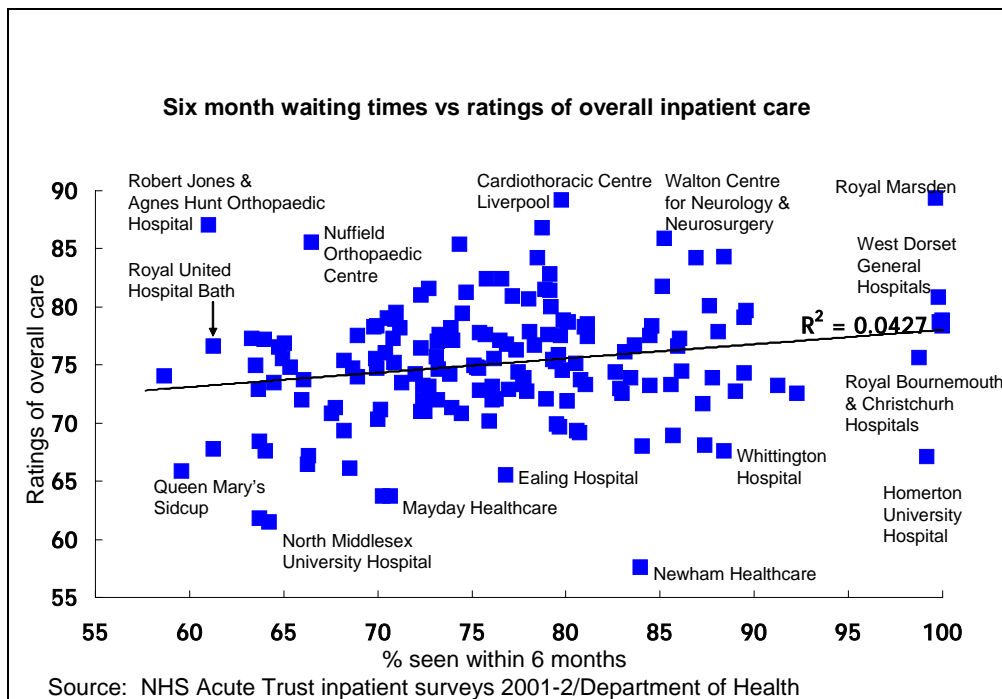


Looking at PCTs, the results are even more stark, in that no relationship is shown at all between overall patient ratings and SMR – chance of death is not linked in any way to the quality of care that people perceive to be provided by their GP.

⁷ SMR = Standardised Mortality Ratio. This is a measure of mortality rates, taking into account the age and gender profile of the patient population.

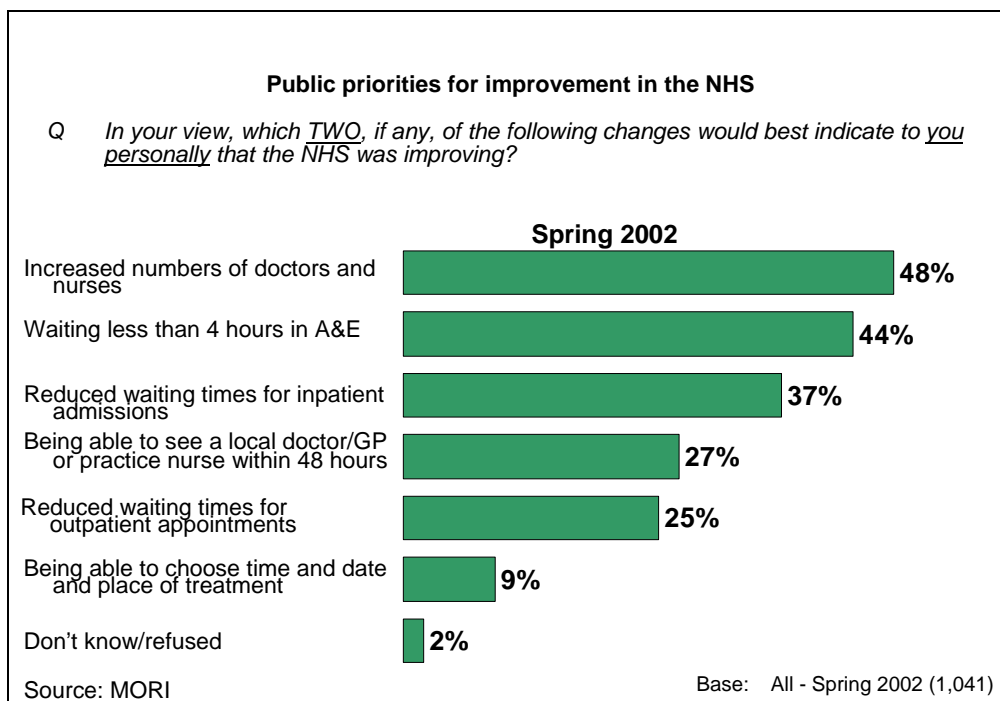


Similarly, whilst satisfaction with waiting time to admission shows a reasonably strong correlation with inpatient ratings (as shown earlier in this chapter), overall hospital waiting times have very little impact on patient perceptions.



In contrast, evidence from MORI surveys which have been tracking attitudes to the NHS since 2000, shows that amongst the public as a whole waiting times are seen as a key indicator of success, as the following chart demonstrates. Moreover, the general public are still more likely to believe that waiting times are increasing, rather than decreasing.

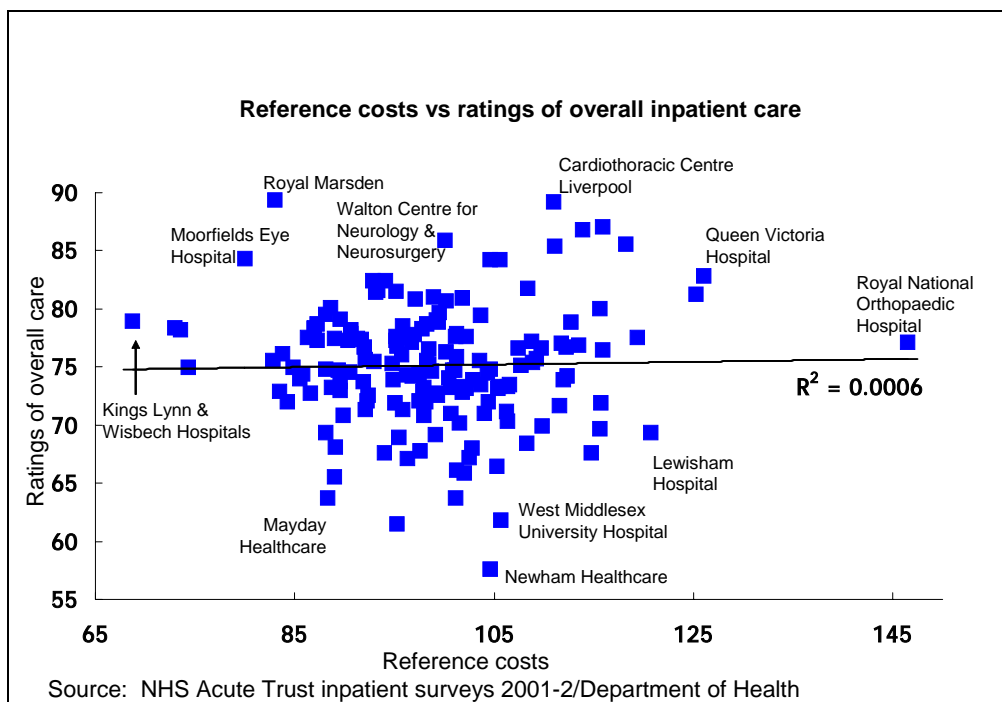
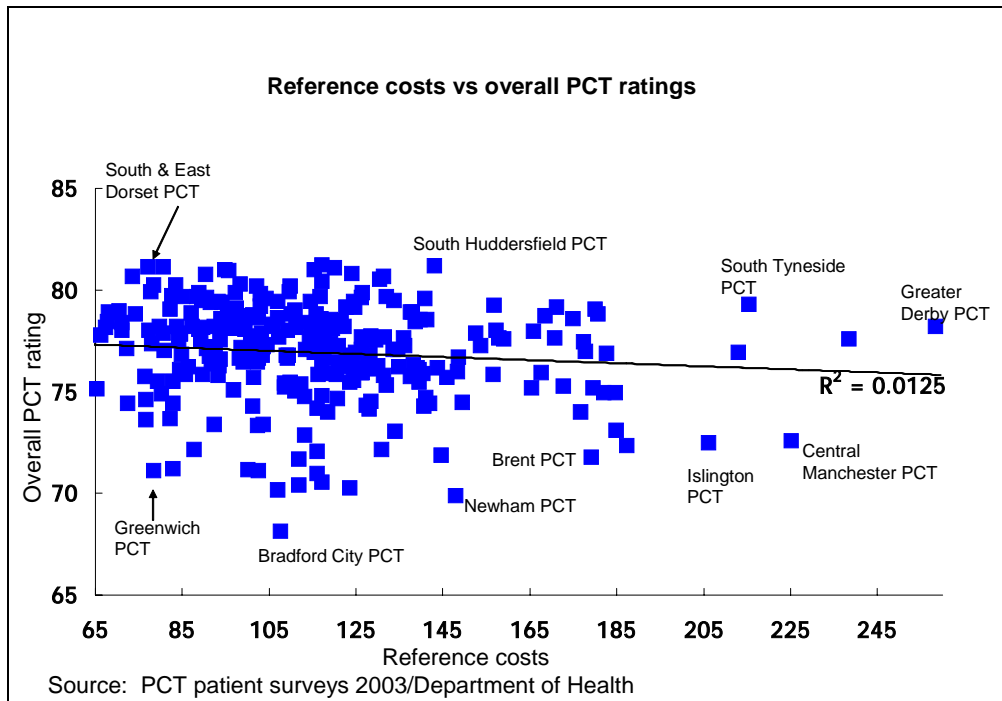
Given the generally negative media coverage on waiting times, which acts to fuel public pessimism about the NHS, this difference in perceptions between the public and patients is an important message that needs to be communicated.



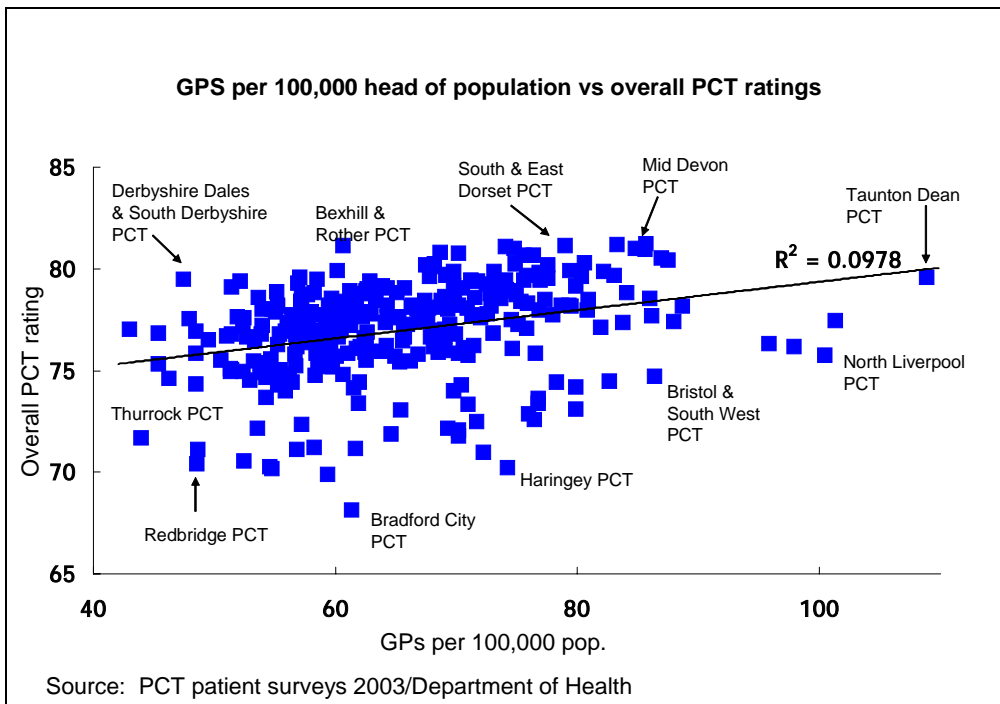
In the same way as for waiting times, neither average length of stay nor readmission rates are very closely linked to inpatient ratings of quality of overall care, although we haven't charted these correlations here.

In theory, performance is constrained by the resources available to deliver services and, therefore, we might expect to observe a relationship between financial controls and/or manpower resources and patient ratings. However, this is not borne out in practice. For example, the unit cost of providing health services, either at the hospital or PCT level, has very little or no bearing on what patients think of the service they receive, as the following charts illustrate. Neither does per capita income show a close relationship with patient ratings, for either PCTs or acute trusts (results not shown here).⁸

⁸ Per capita income is derived by dividing total income by the number of finished consultant episodes for acute/specialist trusts; for PCTs, this is calculated by dividing total income by the size of the population covered. Income data source: NHS Trust summarisation schedules 2001-2; PCT audited summarisation schedules 2002-3.



Similarly, more doctors per hospital bed do not appear to improve patient ratings, despite the fact that the general public regard this as the most important factor in improving performance in the NHS (see chart on priorities on previous page). On the other hand, whilst the availability of GPs only displays a relatively small correlation with overall PCT ratings in the following chart, this relationship *is* a statistically significant one – i.e. it could not have happened by chance. In other words, increasing the pool of GPs within a PCT area may lead to slight service improvements, as perceived by patients.



Who and Where You Serve Matters

Combining the patient survey data with local area statistics from the Census and the Index of Multiple Deprivation (IMD),⁹ it becomes evident that where people live is also linked to their attitudes towards the healthcare they receive. This suggests that patient perceptions are to some degree beyond the control of individual trusts – they are largely determined by the characteristics of the local population which they serve. This highlights the dangers of comparing performance (however it is measured) without an understanding of the context in which trusts operate.¹⁰

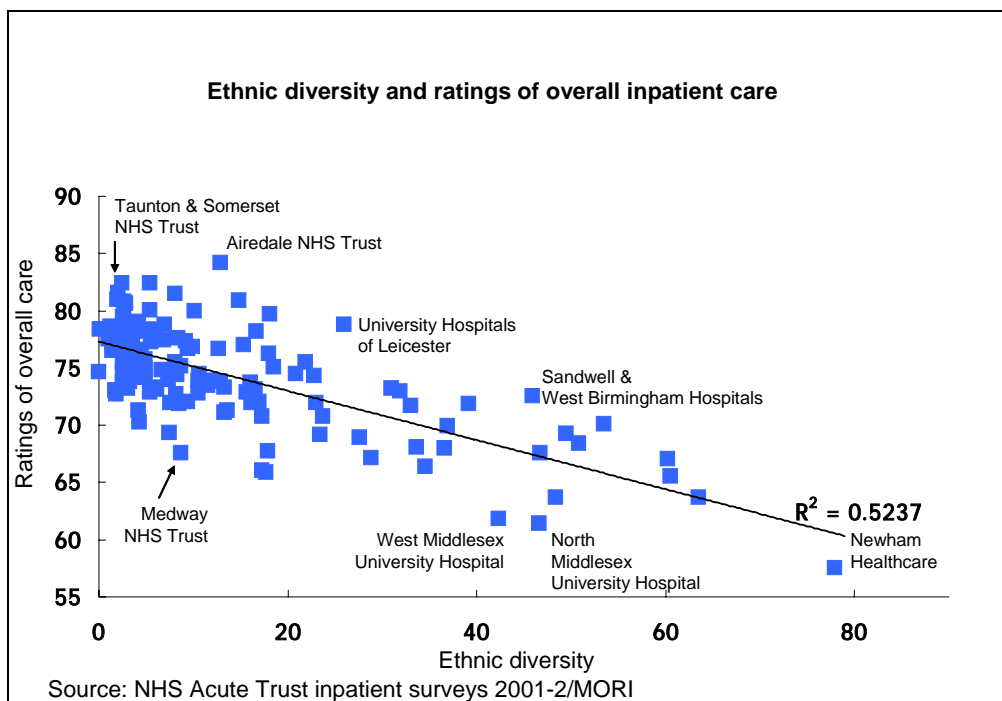
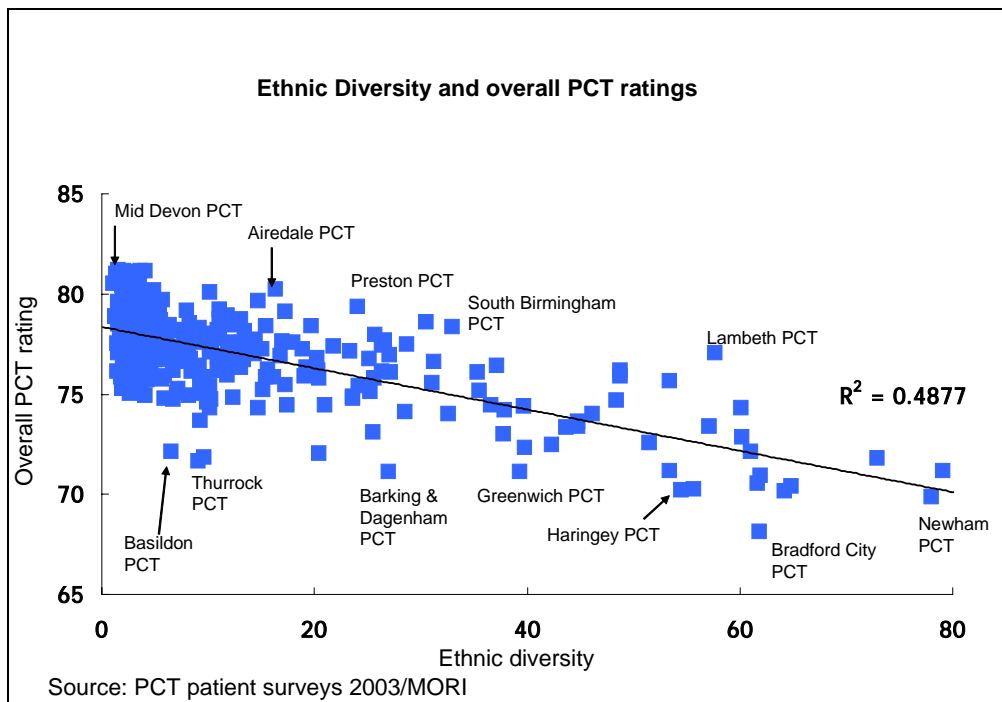
In particular, trusts serving patients drawn from a relatively ethnically diverse local population are somewhat less likely to attract higher ratings from patients for their services than those operating in relatively homogenous areas like the North East or South West, as the charts overleaf illustrate. It is important not to draw sweeping conclusions on the basis of this finding alone, however. Ethnic diversity could simply be picking up other area characteristics such as local population turnover/churn, rurality/urbanity, deprivation or inequality, and it also correlates with age (more ethnically diverse populations also tend to be younger). However, the results of the multivariate analysis presented in the following chapter (where migration, measures of rurality/urbanity, deprivation and age were all controlled for) show ethnic diversity to be a key ‘driver’ of patient satisfaction, even after taking account of these potentially related factors. This is consistent with our research in local government and suggests that a more ethnically diverse population presents some challenges to local service providers, for example, in terms of meeting different language and cultural needs and also their expectations.

Note on definitions

The ethnic diversity of a local area is derived using a simple formula based on the Herfindahl index (used in economics to measure industry concentration/competition), taking account of the range and proportion of local residents from different ethnic groups. Areas with a high proportion of minority ethnic residents that are all from the *same* ethnic group will have a lower ‘diversity’ score than an area that has a similar proportion of ethnic minorities drawn from a wide range of different groups.

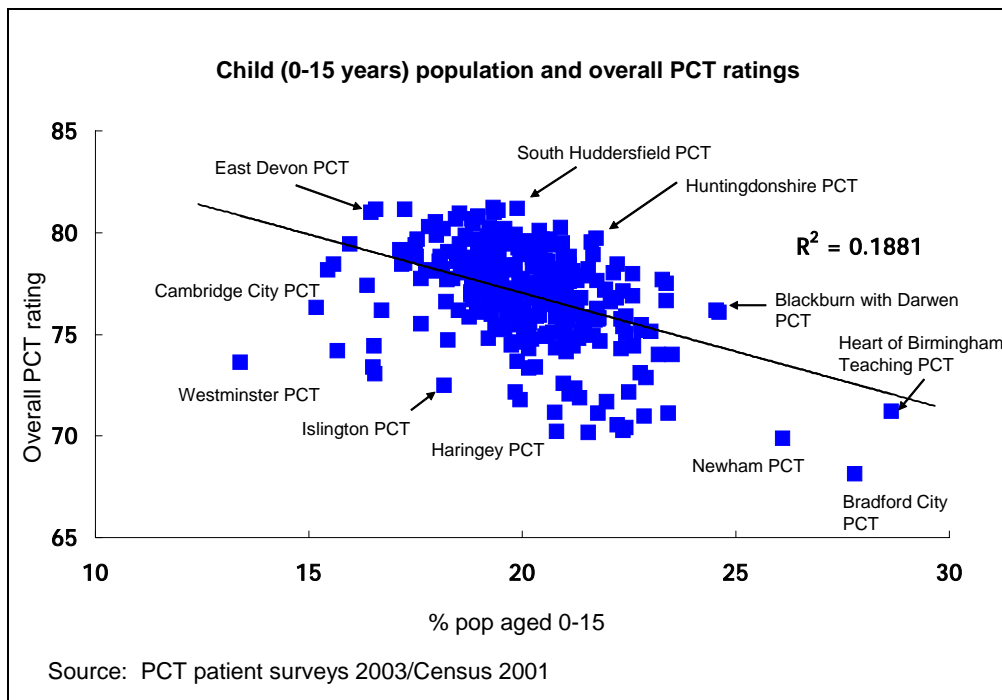
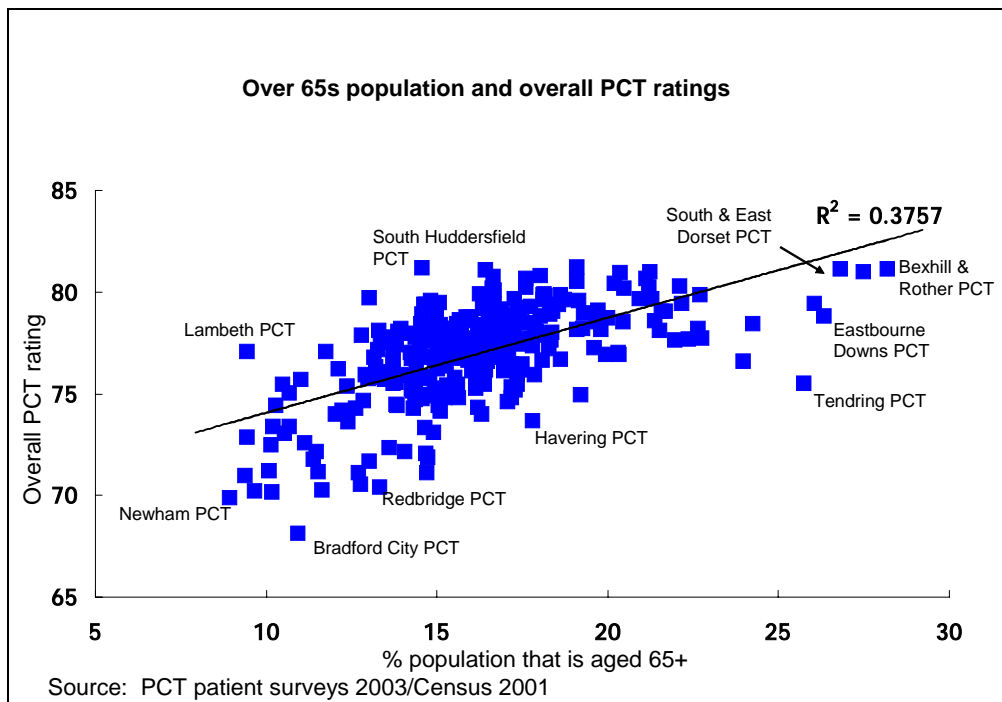
⁹ The Index of Multiple Deprivation (IMD) is a weighted index, calculated according to ‘performance’ in six areas – income (25%), employment (25%), health deprivation and disability (15%), education, skills and training (15%), housing (10%) and geographical access to services (10%).

¹⁰ For acute and specialist trusts, local area statistics were derived on the basis of the PCTs which they serve. Where inpatients come from a wide range of different PCTs, this analysis was not, therefore, appropriate. In the most part, this affected specialist and orthopaedic hospitals and many teaching hospitals – these trusts are excluded from the results presented here.



The age profile of the local population is also linked to patient ratings of health services. Where patients are drawn from an ‘older’ population (i.e. where there is a relatively high prevalence of over 65s locally), they are apparently easier to please than where the population is relatively younger. This is a common finding in public sector research – older people are more likely to express satisfaction with a range of services for any given level of service quality. Conversely, trusts that serve areas with a relatively large number of dependent

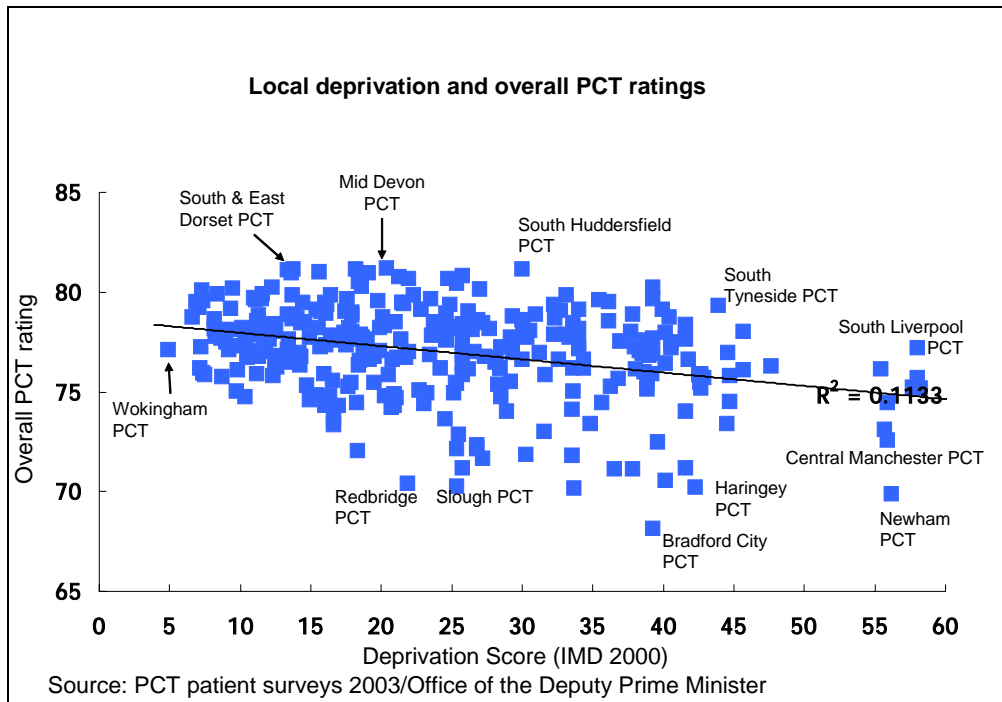
children (measured here by the proportion of the population who are aged 0-15) attract lower ratings.



Similarly, it is possible to show that the more deprived a local population is (as measured by the Office of the Deputy Prime Minister's Index of Multiple Deprivation, or IMD), the less satisfied with PCT services patients drawn from this population tend to be. This is not a surprising result – it is widely recognised that public service provision is more difficult in deprived areas, where residents (and therefore patients) are more dependent and place more complex demands on service providers. Moreover, IMD is closely linked to measures of

local population health (e.g. people living in relatively deprived areas are more likely to assess themselves to be in poor health), which could be expected to impact upon the effectiveness of healthcare delivery.

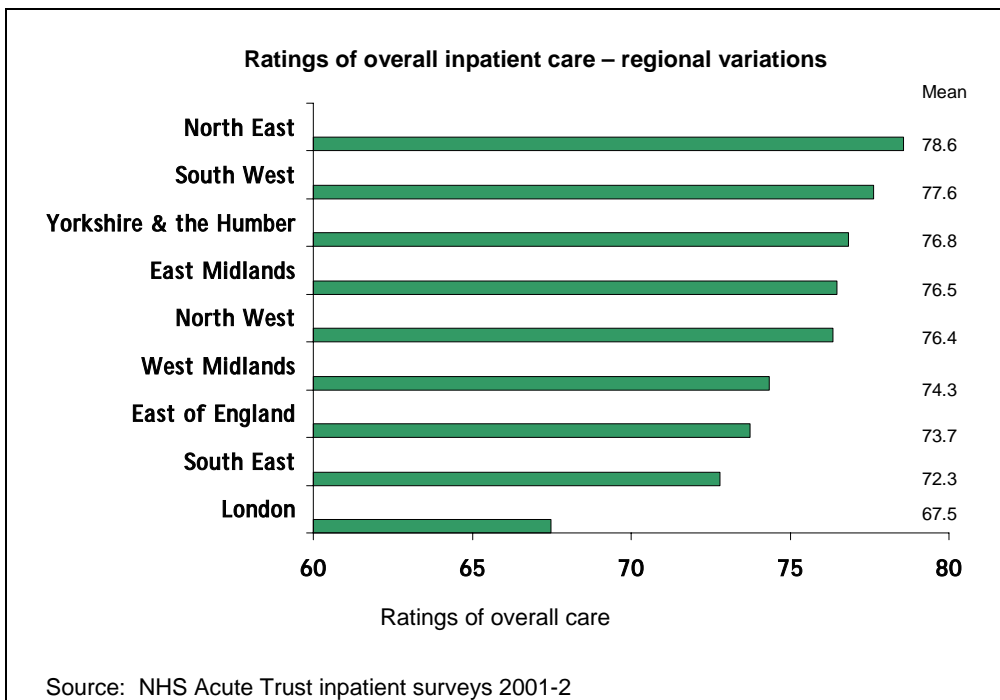
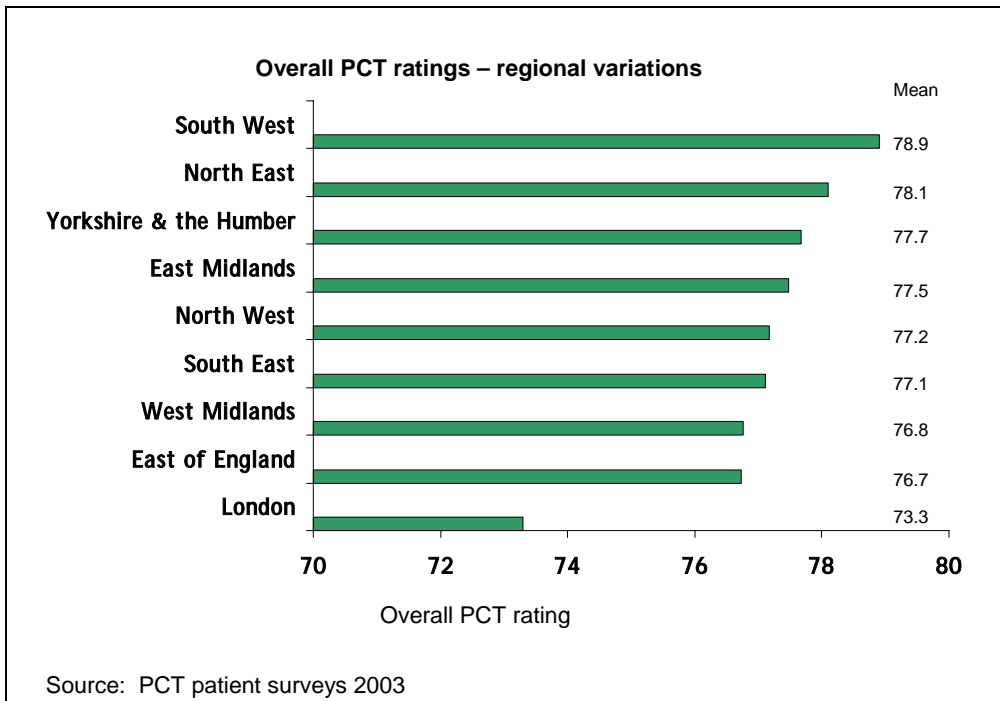
In the chart below, whilst an R^2 of 0.11 is relatively small, this does represent a statistically significant correlation between IMD and overall PCT patient ratings.



Regional variation exists too

Finally in this chapter, the following charts show that there are also regional differences in patient perceptions, with ratings of both acute trusts and PCTs lowest in London and highest in the South West and parts of the North of England. These findings *are* consistent with the star rating allocations – trusts in London and the South East tend to be found lower down the ranks, whilst those in the South West and more rural areas tend to be ranked more highly.

This is broadly consistent with the findings of other MORI research, which shows that people living in northern parts of England (the ‘shiners’) express the most positive views on a range of private and public sector institutions, with those in London and the South East (the ‘grouzers’) the most critical and pessimistic. This is despite the fact that northern areas have lost population and jobs to the South over the last few decades.



Can We Predict Patient Satisfaction?

The previous chapter showed that being treated with dignity and respect is the most important factor contributing to a positive inpatient experience, taking account of patient ratings on a range of specific service aspects (such as hospital cleanliness, communication and involvement and privacy). There are important lessons here for service managers, but what the results so far have also shown is that this is not the full story – performance also hinges on the nature of the population that you serve.

In this chapter, multivariate analysis techniques are again used, this time to examine the relative importance of local population and area characteristics in ‘explaining’ the difference between both PCTs and acute trusts in terms of the ratings that patients give their service, taking into account other ‘external’ factors that are at least in part outside the influence of individual trusts to control (i.e. reference costs, per capita income and GPs per head of population/doctors per 100 beds).¹¹ The results of this analysis can then be used to ‘predict’ patient satisfaction, based only on these exogenous factors.

Chapter Summary

- *Multivariate analysis confirms that the nature of the local area/population served by individual PCTs and acute trusts is closely linked to levels of patient satisfaction - in particular, the more ethnically diverse and younger the served population, the more difficult it is to achieve high patient ratings. For PCTs, local deprivation levels are also linked to lower ratings.*
- *Simply by knowing the characteristics of the local area in which a trust is based or the nature of the population served, it is possible to predict patient satisfaction quite accurately.*

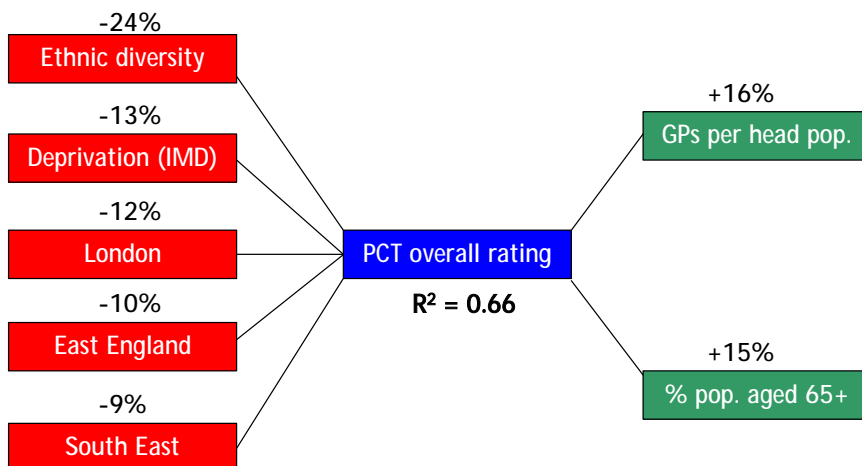
As previously, the ‘key drivers’ results presented below illustrate the relative importance of the various factors in driving overall ratings, scaled to 100. A minus sign illustrates a negative relationship; a plus sign demonstrates a positive relationship.

Primary Care Trusts – key drivers of patient ratings

The chart below confirms the importance of the age profile, ethnic diversity and relative levels of deprivation amongst the local population in influencing PCT patient ratings. The regional effects described in the previous chapter are also borne out here, with PCTs operating in London, the East of England and the South East performing the worst. The results also suggest that increasing the

¹¹ Only trusts with complete data were included in the analysis. In particular, specialist trusts and a number of other acute trusts that serve very geographically-dispersed populations are excluded, as it was not possible to map local area Census data in these cases.

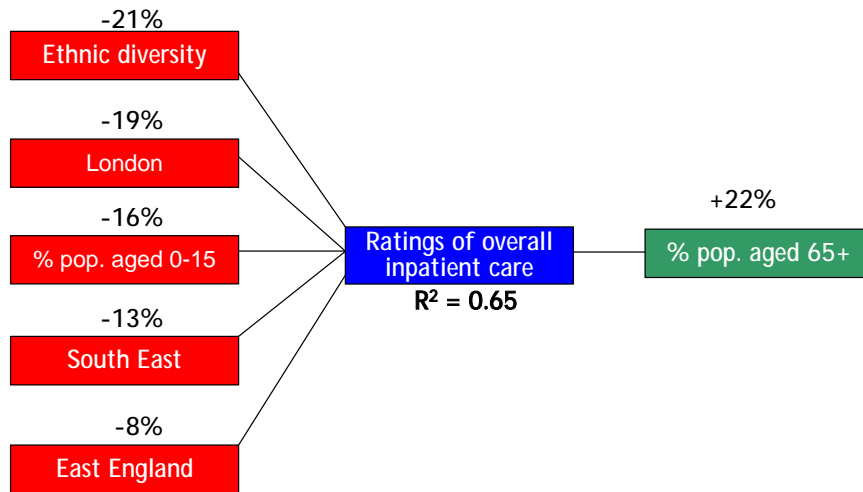
size of the local pool of GPs could help improve patient experience, when considered alongside a range of local population and area characteristics. On the other hand, income per capita is not found to be a key driver of patient ratings, all other things considered.



Acute Trusts – key drivers of inpatient ratings

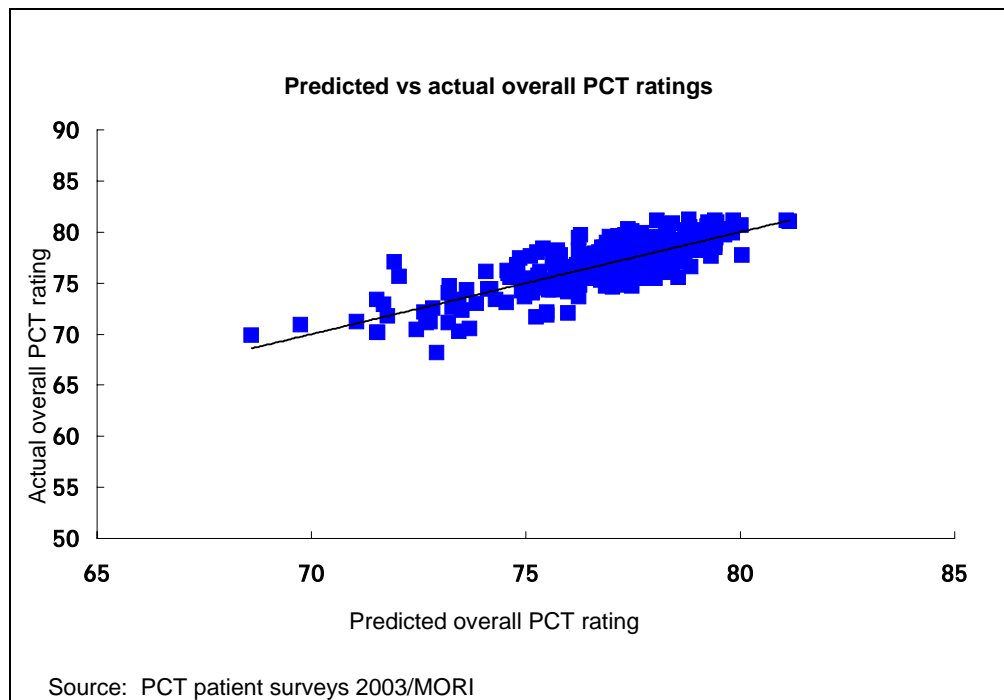
The results for acute trusts are very similar, as shown in the following chart - ethnic diversity and the local population age profile are identified as strong influences on overall inpatient ratings, with similar regional effects. Relative deprivation, however, is not found to be an important factor in ‘explaining’ inpatient experiences.¹² Unlike PCTs, nor does the number of doctors per bed appear to be linked to patient satisfaction, when these other local factors are taken into account (this confirms the findings reported in the previous chapter).

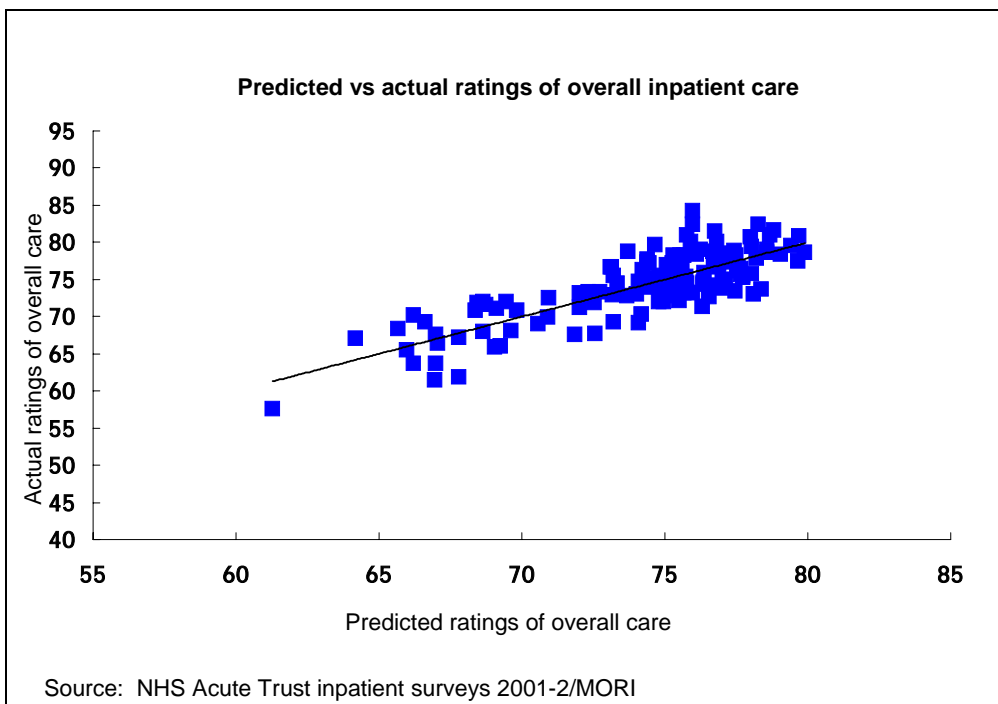
¹² This is not a surprising result, as IMD is an area-based measure and acute trusts cover more geographically dispersed populations than PCTs.



MORI Predictions

These models can then be used to ‘predict’ the patient ratings that can be expected for individual PCTs and acute trusts, given prevailing local conditions. Indeed, by simply knowing the age profile and ethnic diversity of the served population and - for PCTs - local levels of deprivation, it is possible to predict overall patient ratings quite accurately, as the following charts - which plot actual and predicted values - illustrate.





These findings provide the context to the next level of analysis, the results of which are presented in the following chapter, which looks at setting realistic targets for individual trusts, taking account of local conditions, local population characteristics and available resources.

What Performance Levels Should We Expect?

In this final chapter, we compare actual performance, as measured by patient ratings, against what is 'optimal', based on performance achieved elsewhere by trusts operating under similar conditions. This provides a more meaningful comparison of a trust's performance against that of its 'peers' and offers a more realistic assessment of performance on which future service plans can be based.

Chapter Summary

- *The performance of individual PCTs and acute trusts is 'constrained' to some degree by the local conditions under which they operate (e.g. the ethnic diversity and age profile of the served population) and the resources available (e.g. GPs per head of population or doctors per bed). Therefore, it is perhaps unrealistic to expect all trusts to achieve similar patient ratings.*
- *Adopting a technique called Data Envelopment Analysis (DEA), it is possible to make more meaningful comparisons of the performance of individual trusts, taking account of performance achieved elsewhere by trusts operating under similar local conditions.*
- *The results of the analysis show that certain trusts (e.g. Newham PCT and Trafford Healthcare NHS Trust) that would appear to be underperforming on the basis of their patient rating score, are found to be performing at least as well as might be expected in the context of how other trusts serving similar populations are performing. On the other hand, others that appear to be doing well, but which are serving less 'demanding' populations (e.g. South and East Dorset PCT and Isle of Wight Healthcare NHS Trust), could and should be performing better.*

Analytical Approach

This final stage of the analysis makes use of a technique called Data Envelopment Analysis (DEA), which compares the relative 'efficiency' of similar organisational units – here, these are PCTs and acute hospital trusts, but this approach can be adopted quite widely for bank branches, chain stores or local councils. (MORI's Social Research Institute published a report in 2001 presenting the results of a similar analysis amongst individual local authorities in England.¹³) The only requirement is that the units being compared in each case use similar resources (inputs) to generate similar 'products' (outputs).

Therefore, the questions that DEA can help answer are:

- Which trusts are performing best, on the basis of patient satisfaction/ratings, given the relative constraints under which they are

¹³ *Frontiers of Performance in Local Government* – contact Ben Page or Bobby Duffy for details.

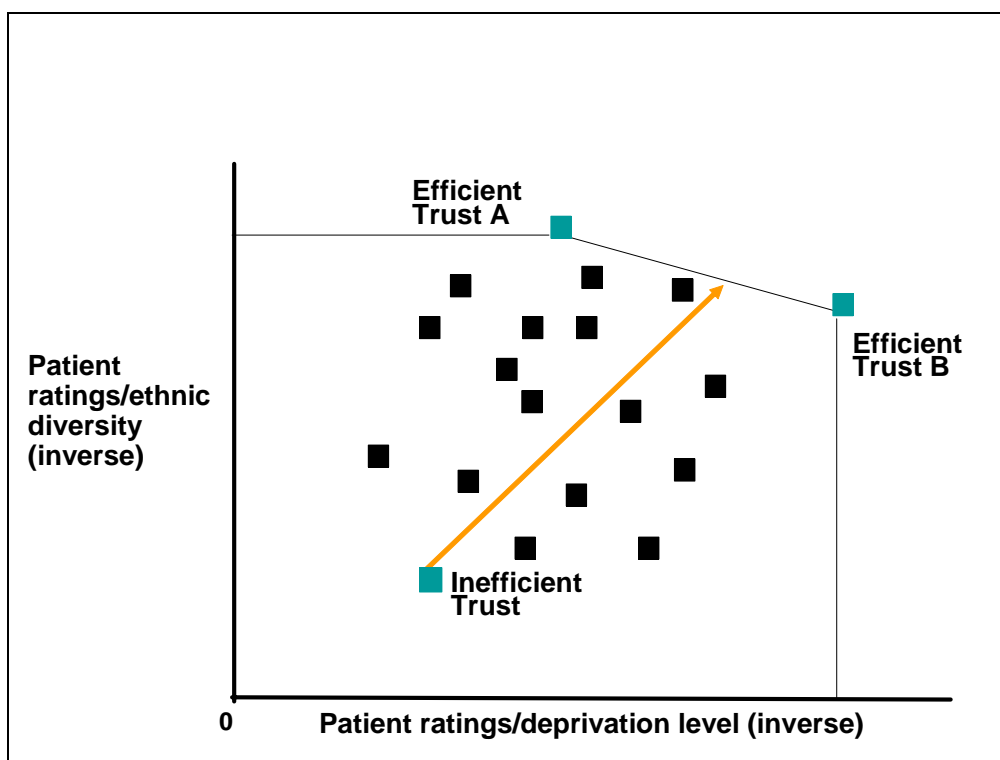
operating (e.g. levels of ethnic diversity and the age profile amongst the served population) and the inputs available to them (e.g. GPs per head of population and doctors per hospital bed).

- How an individual trust can be *expected* to perform, based on satisfaction/patient ratings in other similar trusts, taking on board its available resources and population ethnicity, age profile, etc.

The analysis converts multiple inputs and outputs into a single measure of ‘efficiency’ – those making the best use of resources are rated as ‘100% efficient’, and ‘inefficient’ units receive lower scores. The analysis therefore not only shows which units are underperforming, but also how much they could improve. The key feature for our purposes is that this technique compares individual trusts with their ‘efficient peers’ – i.e. those operating under similar conditions, but who are operating at least as well as would be expected given local population characteristics and the resources they have available to them.

The chart below illustrates the key concept behind the analysis – the ‘efficiency frontier’. In this example, efficient trust A and efficient trust B form the efficiency frontier, as they have the highest ratio of patient satisfaction to ethnic diversity of the local population and local deprivation levels, respectively. Note that, as deprivation and ethnic diversity are in effect negative inputs (high levels of either make it more difficult to achieve high patient ratings), the analysis uses the inverse of these two measures (similarly, the inverse of the aged 0-15 population percentage has also been used).

The efficiency frontier ‘envelops’ all other trusts and clearly shows the relative efficiency of each – the further away from the frontier a trust is, the less efficient it is.



This helps illustrate the main features of the analysis, but it is clearly only possible to plot this type of chart in two dimensions, where we restrict the analysis to two inputs. The models constructed for the analysis in fact include a number of key variables, identified in the previous chapter as important factors linked to patient satisfaction, as follows:

Acute hospital trust model

- Ratings of overall inpatient care (the 'output')
- Ethnic diversity of the area served by the PCT
- % of the local population that is aged 0-15
- % of the local population that is aged 65+
- Doctors per 100 beds¹⁴

PCT model

- Derived overall patient ratings (the 'output')
- Ethnic diversity of the area served by the PCT
- % of the local population that is aged 0-15¹⁵
- % of the local population that is aged 65+
- Deprivation levels in the area served by the PCT
- GPs per 100,000 head of population¹⁶

Performance Ratings – what is realistic?

This section presents the results for individual PCTs and acute hospital trusts separately. As noted above, the analysis makes most sense when we are comparing perceptions of relatively similar units. For hospital trusts, this means that the analysis has been run separately for different hospital 'clusters', as follows: multi-service, large acute, medium acute and small acute trusts.

A key point to note is that being rated as 100% efficient does not mean that there is no room for improvement in patient perceptions – it only indicates that there are no other PCTs or similar acute trusts that are performing better. DEA does not, therefore, provide information on how much improvement could and should be made on an individual trust basis.

PCT results

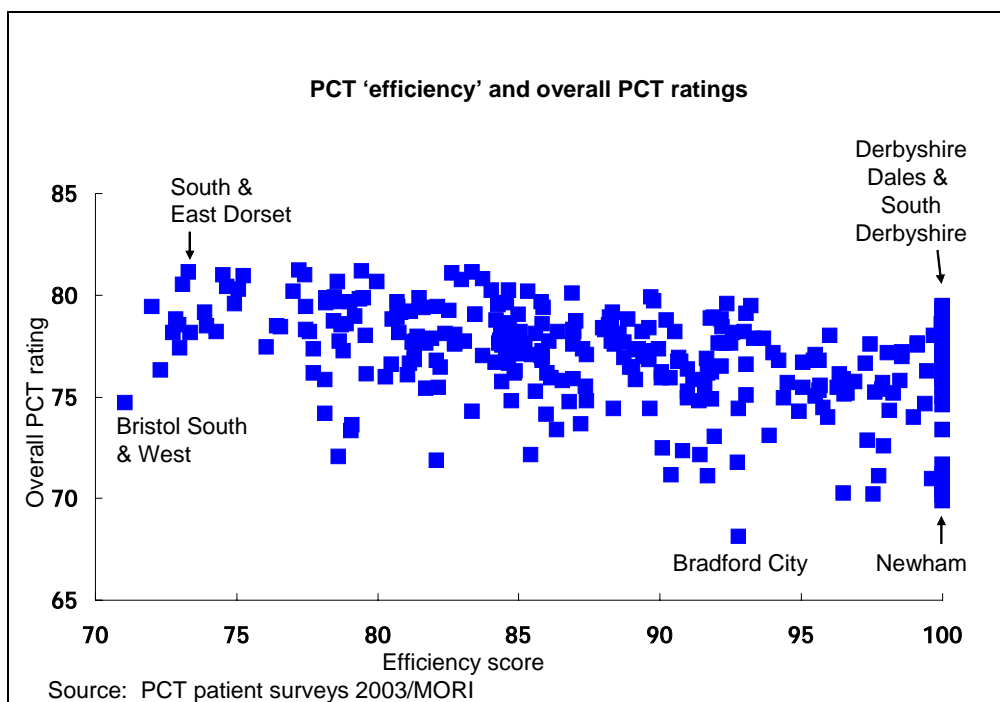
The following chart summarises the results of the DEA analysis for PCTs, plotting actual patient ratings against efficiency scores. The chart illustrates that

¹⁴ Whilst doctors per bed were not found to be a key 'driver' of patient perceptions in the analysis reported in the previous chapter, available resources will be a key determinant of the *minimum* levels of service that an acute trust can provide. Hence, we have included this as an 'input' here.

¹⁵ Whilst the size of the local aged 0-15 population was not identified as a significant driver of patient ratings in the previous chapter, other research we have conducted suggests that this is a factor that contributes negatively to service perceptions.

¹⁶ GP numbers include all practitioners – i.e. GMS Unrestricted Principals, PMS Contracted GPs, PMS Salaried GPs, Restricted Principals, Assistants, GP Registrars, Salaried Doctors (Para 52 SFA), PMS Other and GP Retainers. 'Population' relates to the number of people living within a PCT area, based on 2001 Census data.

all PCTs are operating at efficiency levels of over 70%, with 30 trusts at 100%. The tables that follow provide more detail of these results on an individual trust basis. It should be noted that only PCTs for which there was no missing data could be included in the analysis – 295 in total.



The results that follow show the 'efficiency' scores of each PCT, derived by comparing actual and predicted ratings as dictated by the DEA model. Also shown are the 'inputs' available to PCTs listed previously - ethnic diversity scores, the percentage of the local population aged 65+ and aged 0-15, local deprivation levels, plus GPs per 100,000 population. (For comparative purposes, minimum, maximum and mean values for each of these input variables are listed in the appendices.)

To help the reader digest this long list of results, PCTs are colour-coded according to their efficiency score, starting from dark green for 100% efficient PCTs, through lighter shades of green for PCTs that are 95-99% efficient and 90-94% efficient, moving towards red (representing a warning light) for PCTs that are less than 80% efficient.

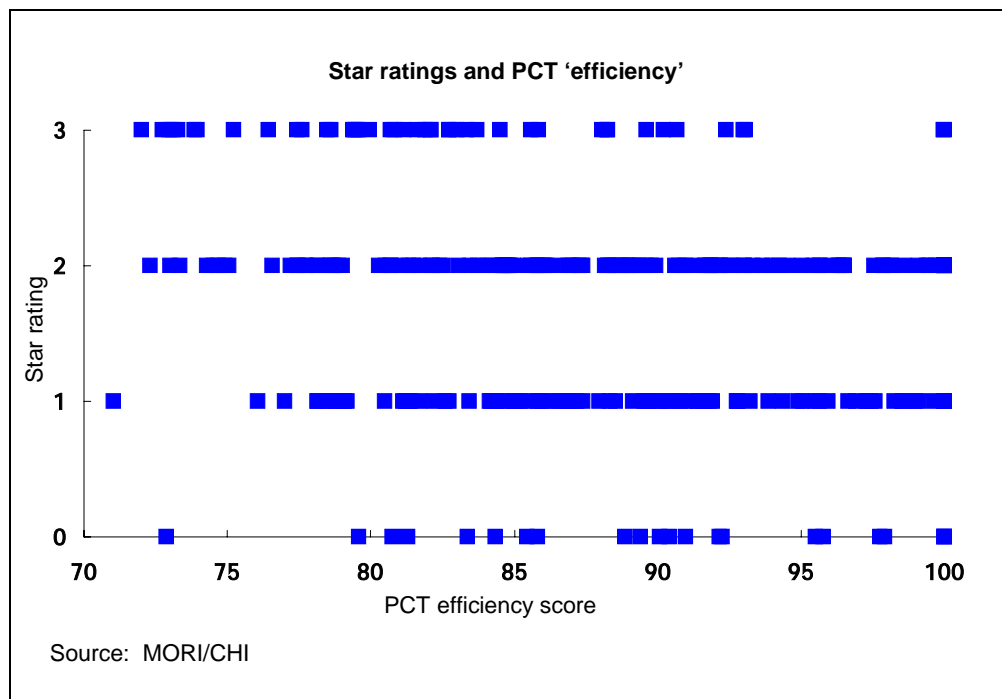
These results enable us to identify which PCTs are performing below what would be expected given prevailing local conditions and available resources. However, the target ratings generated by the DEA model are not presented here because, in themselves, they are not very meaningful, derived as they are by comparing the performance of individual PCTs according to a score computed from responses to a range of very specific questions in the patient surveys, as discussed previously. This points to one of the many benefits of asking more general satisfaction questions of patients, to enable trusts to monitor their performance on these summary measures more easily. That said, the results presented here *are* extremely useful in identifying potential 'under-achievers', in

terms of their efficiency scores, and illustrate the type of output that DEA can produce.

The tables highlight some interesting findings. For example:

- Whilst PCTs such as Newham, Waltham Forest and Redbridge are at the bottom of the scale in terms of patient perceptions, they should be viewed positively in this regard, given the relatively high needs of their local population and/or limited resources available to them – all are 100% ‘efficient’ according to our model. (However, as mentioned previously, this does not mean that these trusts should not or cannot strive for improvements.)
- On the other hand, a number of trusts in the South West (including South and East Dorset, North Devon and East Devon PCTs) plus Eden Valley PCT in Cumbria, whilst attracting relatively high patient ratings should be performing even better, because their local populations are comparatively easy to serve and/or they have more resources available to them – all of these trusts are operating at 75% efficiency or less.

At the start of this report, we highlighted the fact that patient ratings bear little relationship to CHI’s star ratings. The chart below, which plots efficiency scores against 2002/3 star ratings, shows that even when we take account of local ‘constraints’ on performance, CHI’s stars do not really reflect patient perceptions. For example, the ‘spread’ of efficiency scores is virtually the same for zero, one, two and three star PCTs; and three out of the 22 PCTs with zero stars are 100% efficient according to our model, compared with just two out of the 44 three star PCTs.



Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Derbyshire Dales & South Derbyshire PCT	100	5	15	20	16	47
Preston PCT	100	24	15	21	32	52
South Tyneside PCT	100	5	18	20	44	57
Newcastle PCT	100	13	16	19	40	73
South Birmingham PCT	100	33	15	21	42	75
Leicester City West PCT	100	26	14	23	40	81
Rochdale PCT	100	29	14	23	41	58
South Liverpool PCT	100	8	18	20	58	54
Lambeth PCT	100	58	9	19	38	76
Cannock Chase PCT	100	3	14	21	22	43
South Stoke PCT	100	11	16	20	39	49
Doncaster East PCT	100	3	16	20	39	45
North Kirklees PCT	100	31	14	23	30	53
Wolverhampton City PCT	100	37	17	21	40	60
Blackburn With Darwen PCT	100	35	14	25	46	62

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Oldbury and Smethwick PCT	100	49	16	22	43	69
Tameside and Glossop PCT	100	10	15	21	32	48
Milton Keynes PCT	100	17	10	23	20	59
Bracknell Forest PCT	100	10	11	22	10	55
Epping Forest PCT	100	10	17	20	15	46
Southwark PCT	100	57	10	20	45	62
Thurrock PCT	100	9	13	22	27	44
Heart Of Birmingham Teaching PCT	100	79	10	29	42	58
Eastern Leicester PCT	100	62	13	22	40	53
Redbridge PCT	100	65	13	22	22	49
Waltham Forest PCT	100	64	10	22	34	55
Newham PCT	100	78	9	26	56	59
Huddersfield Central PCT	100	31	16	21	30	54
Middlesbrough PCT	100	10	15	22	46	67
Tower Hamlets PCT	100	62	9	23	61	72

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Hartlepool PCT	99	2	16	22	48	55
Croydon PCT	99	48	13	22	21	54
North Birmingham PCT	99	17	18	21	42	67
Mansfield District PCT	99	3	16	20	39	48
Luton Teaching PCT	99	46	12	24	29	56
Heywood and Middleton PCT	99	6	15	22	41	61
Nottingham City PCT	99	27	14	20	45	68
Rowley Regis and Tipton PCT	99	20	16	22	43	57
Wednesbury and West Bromwich PCT	98	35	17	21	43	59
Bexley PCT	98	15	16	21	17	48
Doncaster West PCT	98	2	16	22	39	52
Central Manchester PCT	98	51	11	21	56	76
Halton PCT	98	2	13	22	43	60
Telford and Wrekin PCT	98	10	12	22	28	54

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Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Barking and Dagenham PCT	98	27	15	23	37	49
Central Liverpool PCT	98	15	14	20	58	57
Haringey Teaching PCT	98	55	10	21	42	74
Dudley: Beacon and Castle PCT	97	18	17	21	25	53
City and Hackney Teaching PCT	97	60	9	23	25	76
Salford PCT	97	7	16	20	42	60
North Liverpool PCT	97	4	15	22	58	100
Knowsley PCT	97	3	15	23	58	60
Oldham PCT	97	25	14	23	39	54
Slough PCT	97	56	12	22	25	55
Barnsley PCT	96	2	16	20	43	60
Easington PCT	96	1	17	21	55	59
Sunderland Teaching PCT	96	4	16	20	43	59
Rotherham PCT	96	6	16	21	38	54
Eastern Birmingham PCT	96	33	16	23	42	70

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
South Manchester PCT	96	21	14	20	56	83
Sutton and Merton PCT	96	31	14	20	17	55
Maldon and South Chelmsford PCT	96	3	14	21	14	51
Castle Point and Rochford PCT	96	3	17	20	15	45
Wokingham PCT	96	12	12	21	5	60
Ashton, Leigh and Wigan PCT	95	3	14	21	34	51
Greater Peterborough Primary Care Partnership – North PCT	95	25	14	22	27	55
Walsall Teaching PCT	95	24	16	21	39	53
Eastleigh and Test Valley South PCT	95	5	15	21	10	51
Medway PCT	95	10	13	22	21	55
Lewisham PCT	95	53	11	21	37	65
Swale PCT	94	4	15	22	25	51
Northamptonshire Heartlands PCT	94	8	15	21	20	54
Burntwood, Lichfield and Tamworth PCT	94	4	13	21	19	56

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
North Manchester PCT	94	26	15	23	56	80
South Sefton PCT	94	3	17	21	33	58
North Hampshire PCT	93	6	13	21	11	60
Horsham and Chancetonbury PCT	93	4	16	21	7	59
South Somerset PCT	93	2	20	19	15	51
North East Lincolnshire PCT	93	3	16	22	33	58
North Warwickshire PCT	93	7	15	21	23	51
Greater Derby PCT	93	8	17	20	30	55
Bumley, Pendle and Rossendale PCT	93	17	15	23	36	56
Bradford City PCT	93	62	11	28	39	61
Brent PCT	93	73	11	20	34	70
West Lancashire PCT	93	3	15	21	28	55
Ashford PCT	93	5	16	21	19	58
South Cambridgeshire PCT	92	5	15	20	7	57
Bedfordshire Heartlands PCT	92	5	13	22	12	60

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Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Hyndburn and Ribble Valley PCT	92	12	16	22	27	63
Darlington PCT	92	4	17	20	29	58
Hinckley and Bosworth PCT	92	4	15	19	13	50
Gedling PCT	92	8	17	19	18	52
Hammersmith and Fulham PCT	92	38	11	17	32	65
Bury PCT	92	12	15	22	25	63
Bolton PCT	92	20	15	22	34	59
Bedford PCT	92	24	15	21	21	54
Derwentside PCT	92	1	17	19	38	55
Central Derby PCT	92	49	14	25	28	98
Greenwich PCT	92	39	13	22	38	57
East Leeds PCT	92	17	15	23	26	63
Tendring PCT	92	3	26	18	29	51
Basildon PCT	91	7	14	22	25	54
Trafford North PCT	91	24	16	21	20	55

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Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Northampton PCT	91	15	14	21	20	58
Southend PCT	91	8	19	20	23	52
Dartford, Gravesham and Swanley PCT	91	13	15	21	18	57
Ashfield PCT	91	2	16	20	36	54
Enfield PCT	91	40	14	21	27	57
Warrington PCT	91	4	14	21	22	57
Bassetlaw PCT	91	3	16	20	31	56
Calderdale PCT	91	13	16	21	28	59
Central Cheshire PCT	91	3	15	21	18	59
Hounslow PCT	90	53	12	21	26	62
Hastings and St Leonards PCT	90	6	18	21	39	59
East Staffordshire PCT	90	11	16	21	20	62
Islington PCT	90	42	10	18	40	72
Reading PCT	90	19	13	20	16	63
Blackwater Valley and Hart PCT	90	7	12	21	7	64

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Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Witham, Braintree and Halstead Care Trust	90	3	15	21	16	60
Huntingdonshire PCT	90	6	13	22	11	69
South East Oxfordshire PCT	90	4	16	20	8	60
Wandsworth PCT	90	40	10	17	23	78
West Lincolnshire PCT	90	3	17	20	24	57
Erewash PCT	90	4	16	20	23	57
Great Yarmouth PCT	90	3	20	19	38	56
West Wiltshire PCT	89	4	17	21	14	58
Ipswich PCT	89	11	17	21	24	61
Chelmsford PCT	89	7	15	20	10	56
South Leeds PCT	89	10	15	22	26	61
East Surrey PCT	89	8	16	20	9	58
Leeds West PCT	89	9	15	21	26	59
North Eastern Derbyshire PCT	89	2	18	19	28	53
Kennet and North Wiltshire PCT	89	3	15	21	11	65

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Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
East Kent Coastal Teaching PCT	89	4	20	20	29	60
Bradford South and West PCT	89	27	14	23	39	86
Daventry and South Northamptonshire PCT	89	4	13	21	9	66
South West Oxfordshire PCT	89	4	14	21	8	63
Rugby PCT	88	12	16	20	17	61
Hillingdon PCT	88	37	14	21	18	62
Langbaugh PCT	88	2	17	20	40	64
Chorley and South Ribble PCT	88	4	15	20	19	59
St Helens PCT	88	2	16	21	8	63
Central Suffolk PCT	88	2	18	20	13	61
Bebington and West Wirral PCT	88	3	20	19	36	60
North Lincolnshire PCT	88	5	17	20	25	62
South Leicestershire PCT	88	20	16	20	12	61
North Hertfordshire and Stevenage PCT	87	12	15	21	15	61
Fareham and Gosport PCT	87	3	17	20	11	59

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Swindon PCT	87	9	14	21	18	63
Solihull PCT	87	10	17	21	18	64
Havering PCT	87	9	18	20	17	54
South Western Staffordshire PCT	87	5	17	19	14	58
Cherwell Vale PCT	87	6	15	21	10	66
Dacorum PCT	87	9	15	21	10	65
South Gloucestershire PCT	87	5	14	21	11	62
Trafford South PCT	87	9	17	20	20	61
Chiltern and South Bucks PCT	87	10	17	20	7	68
South East Hertfordshire PCT	87	7	15	20	10	58
Wycombe PCT	87	26	13	21	12	67
Greater Peterborough Primary Care Partnership – South PCT	86	7	14	22	24	70
Camden PCT	86	45	11	16	35	77
Woking Area PCT	86	12	14	20	7	64
North Tyneside PCT	86	4	18	19	33	62

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Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
North Stoke PCT	86	8	17	20	38	62
Coventry PCT	86	29	15	21	34	62
Southern Norfolk PCT	86	3	19	19	16	63
Blackpool PCT	86	3	20	19	39	60
Redditch and Bromsgrove PCT	86	7	15	21	16	66
East Lincolnshire PCT	86	2	21	18	27	57
North East Oxfordshire PCT	86	7	13	21	11	68
South West Kent PCT	86	4	17	20	12	70
Shepway PCT	86	5	20	19	27	59
Colchester PCT	86	7	15	19	18	59
Ellesmere Port and Neston PCT	86	2	16	21	26	69
Staffordshire Moorlands PCT	85	2	17	19	20	57
Ealing PCT	85	61	11	20	27	69
Melton, Rutland and Harborough PCT	85	5	17	20	9	68
Sussex Downs and Weald PCT	85	4	18	20	13	64

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Charnwood and North West Leicestershire PCT	85	11	15	19	16	64
Maidstone Weald PCT	85	4	15	20	13	66
North Surrey PCT	85	10	17	19	9	60
Waveney PCT	85	2	22	19	26	64
Bromley PCT	85	16	17	20	13	63
South Worcestershire PCT	85	4	17	19	16	62
Newcastle-Under-Lyme PCT	85	5	17	19	24	57
South East Sheffield PCT	85	13	17	20	34	67
Billericay, Brentwood and Wickford PCT	85	6	17	19	16	56
Broxtowe and Hucknall PCT	85	8	16	19	24	63
Leeds North West PCT	85	15	15	16	26	67
Airedale PCT	85	16	18	21	39	75
West Gloucestershire PCT	85	8	16	21	21	68
Durham Dales PCT	85	2	18	19	35	68

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Lincolnshire South West Teaching PCT	85	3	17	20	14	69
North Sheffield PCT	85	23	15	22	34	82
Sedgefield PCT	84	1	16	20	37	68
Royston, Buntingford and Bishop's Stortford PCT	84	6	13	22	9	71
Newbury and Community PCT	84	4	14	21	9	71
Vale Of Aylesbury PCT	84	11	13	21	12	73
Dudley South PCT	84	9	17	19	25	62
Birkenhead and Wallasey PCT	84	4	17	22	36	78
Mid-Sussex PCT	84	5	17	20	7	70
Canterbury and Coastal PCT	84	6	19	19	21	59
Suffolk Coastal PCT	84	3	21	19	12	68
Hertsmere PCT	84	14	16	21	12	69
Carlisle and District PCT	84	2	18	19	26	69
Southport and Formby PCT	83	4	22	18	33	66

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
East Hampshire PCT	83	3	18	20	17	71
Harrow PCT	83	60	14	20	16	70
Bexhill and Rother PCT	83	4	28	17	18	61
Fylde PCT	83	3	23	18	15	56
Wyre Forest PCT	83	3	17	19	21	70
St Albans and Harpenden PCT	83	13	15	21	39	72
Chesterfield PCT	83	4	18	19	31	68
Uttlesford PCT	83	3	15	21	9	72
Hambleton and Richmondshire PCT	83	2	16	19	13	74
East Elmbridge and Mid Surrey PCT	83	11	17	20	7	72
West Norfolk PCT	82	3	22	18	24	61
Welwyn Hatfield PCT	82	12	17	20	13	66
Newark and Sherwood PCT	82	3	17	20	25	66
Amber Valley PCT	82	2	17	19	22	71
Stockport PCT	82	8	17	20	20	70

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Harlow PCT	82	10	15	21	30	65
Shropshire County PCT	82	2	18	19	19	67
Wyre PCT	82	2	22	19	21	65
Portsmouth City PCT	82	10	15	19	25	65
Durham and Chester-Le-Street PCT	82	4	15	18	25	72
Morecambe Bay PCT	81	3	19	19	22	70
Mendip PCT	81	2	17	21	17	77
Plymouth PCT	81	3	16	20	30	71
Windsor, Ascot and Maidenhead PCT	81	15	15	19	7	69
Watford and Three Rivers PCT	81	20	15	21	13	73
Isle Of Wight PCT	81	3	22	18	29	67
Rushcliffe PCT	81	8	16	19	9	73
East Cambridgeshire and Fenland PCT	81	3	18	20	19	69
Kingston PCT	81	27	13	19	10	75
Sheffield South West PCT	81	17	17	17	34	70

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Guildford and Waverley PCT	81	7	19	20	8	73
Suffolk West PCT	81	5	16	20	14	76
North Bradford PCT	81	15	16	21	39	83
West Cumbria PCT	81	1	17	19	31	74
Eastbourne Downs PCT	81	5	26	18	18	63
Adur, Arun and Worthing PCT	81	5	24	18	18	62
Gateshead PCT	80	3	17	19	39	69
Northumberland Care Trust	80	2	18	19	25	76
Chingford, Wanstead and Woodford PCT (former)	80	26	16	20	26	71
Broadland PCT	80	2	18	19	12	69
Torbay PCT	79	2	23	18	33	73
South Huddersfield PCT	79	4	15	20	30	83
High Peak and Dales PCT	79	2	18	19	16	77
North Somerset PCT	79	3	19	19	16	74
Westminster PCT	79	45	12	13	25	77

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Barnet PCT	79	44	15	20	17	71
Somerset Coast PCT	79	2	21	19	24	76
South Warwickshire PCT	79	8	17	18	11	72
Bristol North PCT	79	19	16	20	28	75
North and East Cornwall PCT	79	2	20	19	24	74
Southampton City PCT	79	14	15	18	29	78
Poole PCT	79	4	21	18	18	69
Crawley PCT	79	20	15	21	18	70
Scarborough, Whitby and Ryedale PCT	79	2	21	18	22	76
Craven, Harrogate and Rural District PCT	78	3	18	19	12	79
West Of Cornwall PCT	78	2	20	18	32	75
South Wiltshire PCT	78	3	18	20	14	82
Cotswold and Vale PCT	78	3	19	19	11	80
Kensington and Chelsea PCT	78	38	12	16	21	80
Richmond and Twickenham PCT	78	16	14	19	8	77

continued overleaf...

Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
Brighton and Hove City PCT	78	11	16	17	28	68
Doncaster Central PCT	78	10	18	21	39	84
Herefordshire PCT	78	2	19	19	20	79
Eastern Cheshire PCT	77	4	18	19	12	76
Teignbridge PCT	77	2	22	19	22	77
North Dorset PCT	77	3	21	19	14	85
Mid Devon PCT	77	2	19	19	20	86
Central Cornwall PCT	77	2	20	18	27	78
Western Sussex PCT	77	3	24	17	14	69
Cheltenham and Tewkesbury PCT	76	5	18	19	15	77
Leeds North East PCT	76	26	18	20	26	101
South Hams and West Devon PCT	75	2	20	19	19	86
South West Dorset PCT	75	3	22	18	19	81
Taunton Deane PCT	75	3	19	19	20	109
North Devon PCT	75	2	20	19	25	88

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Primary Care Trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Deprivation (IMD)	GPs per 100,000 pop.
East Devon PCT	75	1	27	16	16	75
New Forest PCT	74	2	23	18	13	79
Norwich PCT	74	6	17	17	34	81
Exeter PCT	74	4	17	17	23	80
Bournemouth Teaching PCT	73	6	20	18	26	80
South and East Dorset PCT	73	2	27	17	14	79
Eden Valley PCT	73	1	19	18	18	87
Oxford City PCT	73	22	14	16	19	88
Cheshire West PCT	73	3	17	19	21	86
Bath and North East Somerset PCT	73	5	18	18	14	84
Sheffield West PCT	73	13	15	15	34	89
Cambridge City PCT	73	19	13	15	14	96
North Norfolk PCT	72	2	26	16	22	74
Bristol South and West PCT	71	10	14	18	28	86

Acute hospital trust results

This section reports results for all acute trusts with complete data. Results are presented for multi-service, large acute, medium acute and small acute trusts separately - DEA is most meaningful where the units being compared are as similar as possible in terms of the inputs they use and the outputs they produce. The analysis has not been replicated for orthopaedic/specialist or acute teaching trusts, as these trusts do not serve very well-defined geographical populations.¹⁷ Moreover, trusts that have combined since the time of the inpatient survey are also excluded, as it was not possible to allocate them to a 2001/2 hospital 'cluster'.

The tables below list the efficiency scores for all acute trusts within each cluster, plus the four 'inputs' listed previously - ethnic diversity of the served population, percentage of served population aged 65+ and aged 0-15, plus doctors per 100 beds. (For comparison, minimum, maximum and mean values for each of the local area variables, plus doctors per bed, for each of the four trust 'clusters' are listed in the appendices.)

Once again, target patient ratings have not been reported, because the way in which these are recorded in the publicly available survey data is not particularly meaningful - ratings are derived by allocating scores to each response to the overall ratings of care question, rather than reporting the percentage of inpatients classifying the quality of their care as excellent/very good/etc. (see appendix).

However, as before the results are still very useful in identifying both under-achieving trusts and trusts that are performing very well considering the constraints placed upon them. For example:

- Trafford Healthcare NHS Trust is performing at 100% efficiency, despite scoring amongst the lowest patient ratings of all multi-service trusts - this is primarily because local ethnic diversity is much higher here than for the average trust within this cluster. Other trusts performing well in spite of difficult local conditions and/or resource constraints include:
 - North West London Hospitals Trust (amongst the large acute cluster)
 - Mayday Healthcare NHS Trust (amongst the medium acute cluster)
and
 - Newham Healthcare NHS Trust (amongst the small acute cluster).
- Conversely, examples of trusts with relatively easy populations to serve (i.e. comparatively homogenous and/or older populations) or with greater resources on which to draw that are shown to be under-performing, despite relatively high patient ratings, include:

¹⁷ As a matter of interest, specialist and orthopaedic trusts consistently outperform other acute trusts in terms of patient satisfaction.

- Isle of Wight Healthcare NHS Trust (multi-service);
- Royal Cornwall Hospitals NHS Trust (large acute);
- Worthing and Southlands Hospitals NHS Trust (medium acute); *and*
- Royal West Sussex NHS Trust (small acute).

As was reported for PCTs, the efficiency scores calculated for individual acute trusts show virtually no correlation with the ratings they have been given under CHI's star system.

Multi-service trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Doctors per 100 beds
Calderdale & Huddersfield NHS Trust	100	18	16	21	44
Trafford Healthcare NHS Trust	100	19	16	21	39
Winchester & Eastleigh Healthcare NHS Trust	100	1	4	6	38
York Health Services NHS Trust	100	0*	1	1	34
Hinchingbrooke Health Care NHS Trust	100	5	14	21	42
North Tees & Hartlepool NHS Trust	100	1	8	11	35
Wrightington, Wigan & Leigh NHS Trust	100	3	14	21	35
St Helens & Knowsley Hospitals NHS Trust	100	3	15	21	32
Northumbria Healthcare NHS Trust	100	3	18	19	29
Airedale NHS Trust	100	13	17	21	37
Scarborough & North East Yorkshire Health Care NHS Trust	100	1	15	13	30
Gateshead Health NHS Trust	98	3	17	19	32
East & North Hertfordshire NHS Trust	94	11	15	21	36
South Tyneside Healthcare NHS Trust	94	5	18	20	51
Stockport NHS Trust	94	7	17	20	34
Harrogate Health Care NHS Trust	89	6	18	19	38
East Cheshire NHS Trust	87	3	18	19	40
Isle of Wight Healthcare NHS Trust	86	3	22	18	39
Salisbury Health Care NHS Trust	85	3	19	20	39
South Devon Healthcare NHS Trust	84	2	22	18	40

* Computer rounding – the actual value is 0.11.

Large acute trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Doctors per 100 beds
North West London Hospitals NHS Trust	100	63	13	20	65
Royal Wolverhampton Hospitals NHS Trust	100	32	17	21	40
Bolton Hospitals NHS Trust	100	18	15	22	38
Royal Berkshire & Battle Hospitals NHS Trust	100	14	13	20	28
North Cheshire Hospitals NHS Trust	100	4	14	21	34
Bradford Teaching Hospitals NHS	100	37	13	24	44
North Staffordshire Combined Healthcare NHS Trust	100	7	17	19	13
Birmingham Heartlands & Solihull NHS Trust	100	31	15	23	39
Wirral Hospital NHS Trust	100	3	18	21	29
Doncaster & Bassetlaw Hospitals NHS Trust	98	4	16	21	44
Taunton & Somerset NHS Trust	97	2	20	19	33
North Bristol NHS Trust	96	10	15	20	38
Mid-Essex Hospital Services NHS Trust	95	5	15	20	33
Morecambe Bay Hospitals NHS Trust	94	3	19	19	28
Northern Lincolnshire & Goole Hospitals NHS Trust	94	4	15	19	27
City Hospitals Sunderland NHS Trust	93	4	16	20	37

continued overleaf...

Large acute trust (cont.)	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Doctors per 100 beds
United Lincolnshire Hospitals NHS Trust	93	3	19	19	34
Barnet & Chase Farm Hospitals NHS Trust	93	35	14	21	43
Barking, Havering & Redbridge Hospitals NHS Trust	92	29	16	22	38
Southern Derbyshire Acute Hospitals NHS Trust	91	11	16	20	43
West Hertfordshire Hospitals NHS Trust	91	16	15	21	58
Portsmouth Hospitals NHS Trust	91	6	17	20	53
Dudley Group Of Hospitals NHS Trust	90	13	17	20	37
Royal Cornwall Hospitals Trust	90	2	20	18	43
East Kent Hospitals NHS Trust	90	5	19	20	39
Epsom & St Helier NHS Trust	89	23	15	20	48
North Cumbria Acute Hospitals NHS Trust	88	1	18	19	38
Worcestershire Acute Hospitals NHS Trust	87	5	16	20	45
Maidstone & Tunbridge Wells NHS Trust	85	4	16	20	47
Royal Devon & Exeter Healthcare NHS Trust	84	3	21	17	43
Plymouth Hospitals NHS Trust	83	3	18	19	52
Norfolk & Norwich University Hospitals NHS Trust	79	3	20	18	53

continued overleaf...

Medium acute trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Doctors per 100 beds
Mayday Healthcare NHS Trust	100	48	13	22	27
Whipps Cross University Hospital NHS Trust	100	51	14	22	30
Lewisham Hospital NHS Trust	100	49	12	21	49
Frimley Park Hospitals NHS Trust	100	9	13	21	37
Sherwood Forest Hospitals NHS Trust	100	3	17	20	29
Blackpool, Fylde & Wyre Hospitals NHS Trust	100	3	21	19	15
Peterborough Hospitals NHS Trust	100	13	15	21	43
Northampton General Hospital NHS Trust	100	12	14	21	40
Walsall Hospitals NHS Trust	100	23	16	21	29
Aintree Hospitals NHS Trust	100	4	16	22	35
Rotherham General Hospitals NHS	98	6	16	21	31
Heatherwood & Wexham Park Hospitals NHS Trust	97	28	13	21	41
Hillingdon Hospital NHS Trust	96	37	14	21	44
Swindon & Marlborough NHS Trust	95	8	14	21	53
Ipswich Hospital NHS Trust	94	7	18	20	38
Southend Hospital NHS Trust	93	6	18	20	39

continued overleaf...

Medium acute trust (cont.)	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Doctors per 100 beds
Basilston & Thurrock University Hospitals NHS Trust	93	7	14	22	39
James Paget Healthcare NHS Trust	91	3	21	19	34
Bromley Hospitals NHS Trust	91	16	17	20	40
Royal United Hospital Bath NHS Trust	90	4	17	20	48
Kingston Hospital NHS Trust	89	24	14	19	56
Essex Rivers Healthcare NHS Trust	88	5	21	19	31
Worthing & Southlands Hospitals NHS Trust	87	5	23	18	34
Southport & Ormskirk Hospital NHS Trust	87	3	19	19	38
Royal Bournemouth & Christchurch Hospitals NHS Trust	85	4	23	17	29
Ashford & St Peter's Hospital NHS Trust	83	17	15	20	47

continued overleaf...

Small acute trust	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Doctors per 100 beds
Newham Healthcare NHS Trust	100	78	9	26	46
Ealing Hospital NHS Trust	100	61	11	20	41
Good Hope Hospital NHS Trust	100	17	16	21	37
Homerton University Hospital NHS Trust	100	60	9	23	45
Luton & Dunstable Hospital NHS Trust	100	34	12	23	48
Tameside & Glossop Acute Services NHS Trust	100	11	15	22	29
North Hampshire Hospital NHS Trust	100	6	13	21	22
Milton Keynes General NHS Trust	100	17	10	23	52
Burton Hospitals NHS Trust	100	8	15	21	45
Kettering General Hospital NHS Trust	97	8	15	21	38
George Eliot Hospital NHS Trust	96	7	15	21	40
East Somerset NHS Trust	95	2	20	20	32
Dartford & Gravesend NHS Trust	95	13	15	21	37
Northern Devon Healthcare NHS Trust	95	2	20	19	50
Mid Cheshire Hospitals NHS Trust	95	3	15	21	37
Medway NHS Trust	94	9	13	22	36
Countess Of Chester Hospital NHS Trust	93	3	17	19	43

continued overleaf...

Small acute trust (cont.)	'Efficiency' score	Ethnic diversity	% pop. aged 65+	% pop. aged 0-15	Doctors per 100 beds
West Suffolk Hospitals NHS Trust	93	5	17	20	30
Barnsley District General Hospital NHS Trust	93	2	16	20	37
Whittington Hospital NHS Trust	92	47	10	19	59
North Middlesex University Hospital NHS Trust	92	47	12	21	42
Chesterfield & North Derbyshire Royal Hospital NHS Trust	92	3	18	19	44
Royal Surrey County Hospital NHS	92	7	18	20	55
West Dorset General Hospitals NHS Trust	91	3	22	18	46
Kings Lynn & Wisbech Hospitals NHS Trust	90	3	21	18	40
Bedford Hospital NHS Trust	90	18	14	21	48
Mid Staffordshire General Hospitals NHS Trust	89	4	16	20	28
Hereford Hospitals NHS Trust	89	2	19	19	44
Weston Area Health Trust	89	3	20	19	30
Queen Mary's Sidcup NHS Trust	87	18	16	21	50
South Warwickshire General Hospitals NHS Trust	86	8	17	18	39
Royal West Sussex NHS Trust	85	3	24	17	47
West Middlesex University Hospital NHS Trust	81	42	12	20	51

Appendices

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APPENDIX A - Limitations of the Data

Both the PCT and the acute inpatient survey data analyses have been limited by the level and quality of information on patient satisfaction collected in the two surveys. The PCT patient surveys do not ask about overall satisfaction/ratings of care, hence the need to derive such a measure from individual questions (see appendix B). And, whilst the acute inpatient survey does ask respondents to provide an overall assessment of the care they have received, this question has a biased scale, with three positive and only one wholly negative response possible, as follows:

Q Overall, how would you rate the care you received?

Excellent

Very good

Good

Fair

Poor

Moreover, the inpatient survey data that is in the public domain does not supply information on the percentage of patients responding according to this pre-coded list. Instead, it uses a scoring system to arrive at a summary measure of overall ratings – where ‘excellent’ is allocated 100 points, ‘very good’ is allocated 75 points, ‘good’ is allocated 50 points, ‘fair’ 25 points and ‘poor’ zero points.

These measurement issues should be borne in mind when interpreting the findings presented in this report. In particular, one important drawback of these various data limitations is that it has not been possible to identify realistic patient satisfaction scores for individual trusts in the target-setting analysis reported in the final chapter of this report (see main body of report for details).

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APPENDIX B - Notes on Definitions

PCT overall patient ratings

The overall PCT rating used throughout this report has been derived from the five 'domain' scores – themselves derived from individual survey questions – used in CHI's star rating system, namely:

- Access and waiting
- Safe, high quality, co-ordinated care
- Better information, more choice
- Building relationships
- Clean, comfortable, friendly place to be

Overall patient satisfaction questions are not currently asked in the PCT surveys, so it is not possible to assess the relative importance of each 'domain' in contributing to positive patient experiences. Consequently, equal weight has been given to each of the five 'domains' in calculating this overall measure.

Merging of acute trusts

The latest inpatient survey data available relates to 2001/2. The intervening period has witnessed many developments in the sector, with a number of trusts having merged into larger units. To ensure that our analysis is as relevant as possible, we have combined data from the 2001/2 inpatient survey, where appropriate, to reflect these changes. Where data has been combined, the 'old' (i.e. 2001/2 equivalent) data has been weighted by the size of the inpatient population, to arrive at a weighted average for the new combined trusts.

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APPENDIX C – Minimum, Maximum and Mean Values of DEA ‘Input’ Variables

Primary Care Trusts

	Minimum	Maximum	Mean
Ethnic diversity	1	79	14
Aged 65+	9	28	16
Aged 0-15	13	29	20
Deprivation (IMD)	5	61	25
GPs per 100,000 pop.	43	109	65

Multi-service trusts

	Minimum	Maximum	Mean
Ethnic diversity	0 ¹⁸	19	5
Aged 65+	1	22	15
Aged 0-15	1	21	18
Doctors per 100 beds	29	51	37

Large acute trusts

	Minimum	Maximum	Mean
Ethnic diversity	1	63	13
Aged 65+	13	21	17
Aged 0-15	17	24	20
Doctors per 100 beds	13	65	40

Medium acute trusts

	Minimum	Maximum	Mean
Ethnic diversity	3	51	15
Aged 65+	12	23	16
Aged 0-15	17	22	20
Doctors per 100 beds	3	51	15

Small acute trusts

	Minimum	Maximum	Mean
Ethnic diversity	2	78	17
Aged 65+	9	24	16
Aged 0-15	17	26	20
Doctors per 100 beds	22	59	41

¹⁸ Computer rounding – the actual minimum value is 0.11.

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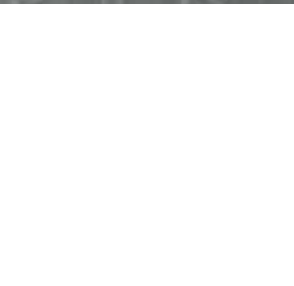
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