Setting Levels of Ambition for the NHS Outcomes Framework

A technical annex to support Developing our NHS care objectives: a consultation on the draft mandate to the NHS Commissioning Board

Chapter 5: Helping people to recover from episodes of ill-health or following injury

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Introduction

5.1. This chapter sets out our proposals for calculating a level of ambition for domain 3: 'Helping people to recover from episodes of ill-health or following injury'. The proposed methodology is summarised in the executive summary and explained in detail in chapter 2.

5.2. In this chapter, we review available data for each indicator. A 'notes' section highlights some aspects which may merit further consideration. The chapter illustrates a range of factors that may affect outcomes (we use the term 'drivers' to describe these). In some cases, we refer to findings from academic literature. Such citations are not intended to be a guide to clinical practice and should not be taken as official endorsement by the Department of Health.

5.3. We produce 'current practice projections' where data are available. The purpose of these projections is explained in the executive summary and in Chapter 2. They are not forecasts of performance – rather they represent benchmarks for assessing the likely NHS contribution to improving outcomes. After producing a projection, we then consider what scope there is for the NHS to improve outcomes measured by individual indicators within available resources.

5.4. Finally, sections 3 a and b provide examples of how these areas of possible improvement could be aggregated and used to inform a level of ambition that is set for each domain. It is important to note that this section is a partial assessment at this stage. It illustrates how we might set levels of ambition. We intend to quantify what might be possible to achieve at a national level. It would then be for the NHS Commissioning Board to decide how to meet that level of ambition.

5.5. Our partial assessment is based on building up a picture of what might be possible based on considering individual indicators. Our aim is to have a level of ambition that represents the goal of the domain as a whole – therefore we are clear that we may need to make some additional broader assumptions.

5.6. As indicated earlier in the document, this material is an analytical work in progress. It is being published in the interests of transparency, to outline our proposals, and to invite comments. Levels of ambition will be included in the final mandate.

(1) Domain 3 overview and metric of improvement

5.7. This domain comprises indicators both of adverse outcomes and indicators of the effectiveness of care.

5.8. The three measures of adverse outcomes are the overarching indicators,

- 3a Emergency admissions for acute conditions that should not usually require hospital admission;
- 3b Emergency readmissions within 30 days of discharge from hospital,

  together with one of the improvement area indicators; and
- 3.2 Emergency admissions for children with lower respiratory tract infections

5.9. These outcome indicators are designed to reflect failures in the effectiveness of care in some cases. (They contrast with Domain 5 outcomes, which are designed to reflect adverse outcomes, harms, attributable to the care itself.) They will include some cases in which failure to deliver good care leads to an avoidable premature fatality, so there is some overlap with Domain 1. (This overlap with Domain 1 applies to a number of indicators in this Domain and in Domain 5; the point is not repeated.)

5.10. These indicators of adverse outcome are complemented by indicators (in five improvement areas) that attempt to capture the extent of improvement in health following ill-health or injury.

5.11. One of these relates to elective care:

- Patient Reported Outcome Measures (PROMs) for elective procedures

5.12. The other four relate to urgent or emergency care:

- An indicator on recovery from injuries and trauma
- 3.4 Proportion of stroke patients reporting an improvement in activity/lifestyle on the Modified Rankin Scale at 6 months
- 3.5 The proportion of patients with a fragility fracture recovering to their previous levels of mobility at i. 30 days and ii. 120 days
- 3.6 The proportion of older people (65 and over) who were still at home 91 days after discharge from hospital into reablement/rehabilitation services: i. the proportion at home at 91 days, ii. the proportion offered rehab following discharge.

5.13. These indicators are at various stages of development. Over time as these indicators are finalised, the overarching indicators and the complementary improvement indicators will combine progress in reducing the number of cases in which recovery has been interrupted by avoidable emergency admissions with those that measure positive progress in recovery. They provide a partial picture of the NHS's contribution to minimising the adverse impact of ill-health and injury upon the quality and length of life of those affected. This is discussed further below.

5.14. The Domain Outcome metric is the average QALY gain arising from NHS intervention for episodes of illness and incidents of injury relative to what would have happened without care or what could happen with improved care:

- Quality Adjusted Life Years saved.

5.15. The incremental contribution by the NHS in a given year relative to the previous year is the incremental increase to the QALYs saved summed over all such incidents. Thus the metric of incremental NHS contribution is:

- Additional QALYs from incremental NHS contributions following acute incidents.

5.16. The picture of contribution by the NHS to success in this Domain is clearly incomplete in a number of dimensions. The Domain should in principle reflect the balance of NHS work in three contexts – in each current indicators only pick up an aspect of the NHS contribution:

- Care of episodes of ill-health or injury to be managed in primary care. A certain volume of episodes occur each year requiring NHS intervention to prevent such deterioration as would require hospitalisation. The number of such episodes can be estimated (albeit roughly, given the difficulty in distinguishing from current data sources episodic interventions from those involving care for individuals for their long term conditions). However, we lack a direct assessment of the QALY gain from these interventions – how much more quickly individuals recover from episodes of ill health than they would in the absence of care. Instead we estimate only avoided hospitalisation, and this only indirectly. Suppose of total primary care episodes per annum there is a subset, say XX thousand, that would lead to hospitalisation in the absence of good primary care. In a proportion of such cases, say Y%, the NHS fails to prevent hospitalisation. This number of cases is picked up by indicators 3a and 3.2. If hospitalisation generates a QALY loss of a certain level, say Z QALYs, then that is a measure of the contribution of the NHS to the ((100-Y)%)*(XX thousand) people whose hospitalisation is prevented by the NHS.

- Care of episodes of ill-health or injury that require unplanned admission to hospital. These are generally incidents where outcomes would be severe including death in the absence of NHS intervention. For some such episodes, indicators are being developed that measure directly adequacy of recovery: 3.3 (trauma), 3.4 (stroke), 3.5 (fragility fracture). In each such case in which it can be assumed that failure to treat would yield death, a QALY gain can be attributed to each intervention, with the extent of the gain dependent upon the indicator score (e.g. the Rankin score can be used to estimate health related quality of life for those recovering from stroke; the total QALY gain per person can be derived based upon the product of this score and life expectancy given this score). But of course, these indicators only cover a subset of all appropriate unplanned admissions. For the rest, we have only indirect indicators of success, for those care episodes in which effective treatment is required to avoid readmission to hospital or admission to a care home. Indicators 3b and 3.6 capture the cases where this care has not been delivered. Again, if we can estimate the number of such incidents, and the gain arising from avoiding hospitalisation and or institutionalisation, then we can net off the cases where this result is not achieved to give an estimate of the total good achieved by the NHS.

- Care of episodes of ill-health or injury to be managed in hospital following elective admission. The four PROMs scores deliver estimates of health related quality of life for those receiving care. Estimates are needed of the counterfactual health state – what EQ5-D score would be expected in the absence of intervention for hips, knees, hernias and varicose veins respectively. However, at the moment, PROMs only cover a minority of elective interventions.

5.17. Over time, it is hoped to remedy these deficiencies and to develop a more complete picture of NHS contributions. In the meantime, the indicators once finalised, are expected to provide partial indications of overall success in the Domain.

(2) Domain 3 Indicator Trends, Explanations, Projections and Scope for Improvement

5.18. This section sets out for each indicator or set of indicators:

(a) Recent Trends and Explanations

(b) Current Practice Projections

(c) Scope for Improvement by Indicator

Indicator 3a: Emergency Admissions for Acute Conditions that should not usually require hospital admission

Outcome sought	**Preventing conditions from becoming more serious.**
Indicator definition	The indicator is defined as the proportion of persons in England aged 19 years and above with specified acute conditions (ear/nose/throat infections, kidney/urinary tract infections, heart failure and more) admitted to hospital as an emergency admission. It is expressed in emergency admissions for these conditions per 100,000 population. The indicator will be standardised by age and sex. However, these are not currently available and non-standardised data have been used instead for the purposes of this template.

(a) Indicator 3a: Recent Trends and Explanations

5.19. The proportion of emergency admissions for acute conditions that should not usually require hospital admission increased by 8.7% between 2009/10 and 2010/11, from 949 annual admissions per 100,000 population to 1032 admissions.

5.20. Between 2003/04 and 2010/11, there has been an increase of 57.9%, from 653 admissions per 100,000 population to 1032, an average annual increase of 6.7%. This increase has been greater for women (around 60.7%) than for men (around 54.9%).

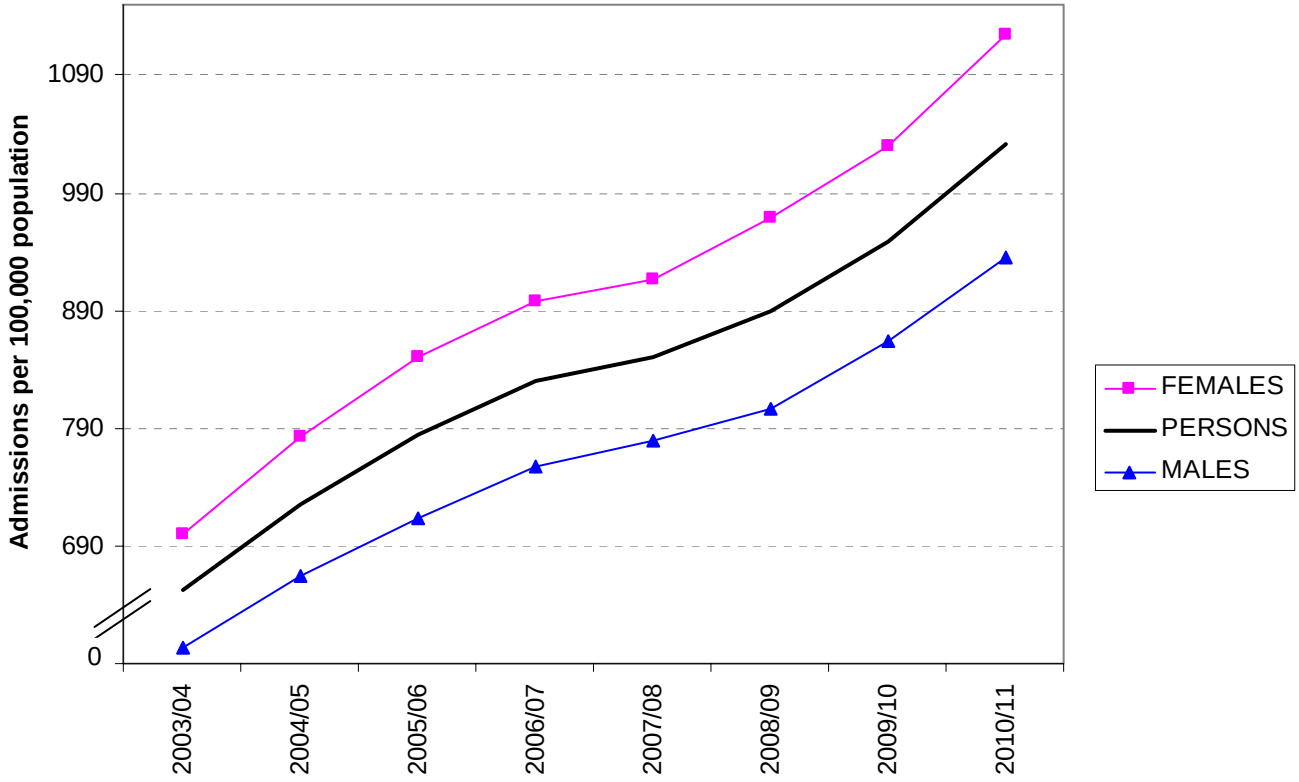
5.21. Admissions for women were consistently higher than for men, ending with a 2010/11 level of 1,124 admissions per 100,000 female population for women compared to 935 admissions per 100,000 male population for men.

Table 3a.a Emergency admissions for conditions that should not require hospitalisation (per 100,000 population)

Year	Males	Females	Persons
2003/04	604	700	653
2004/05	664	784	726
2005/06	713	851	784
2006/07	757	898	830
2007/08	779	917	850
2008/09	807	968	890
2009/10	865	1030	949
2010/11	935	1124	1032

Source: NHS Information Centre

Figure 3a.a Emergency admissions for conditions that should not require hospitalisation (for 100,000 population)



Source: NHS Information Centre

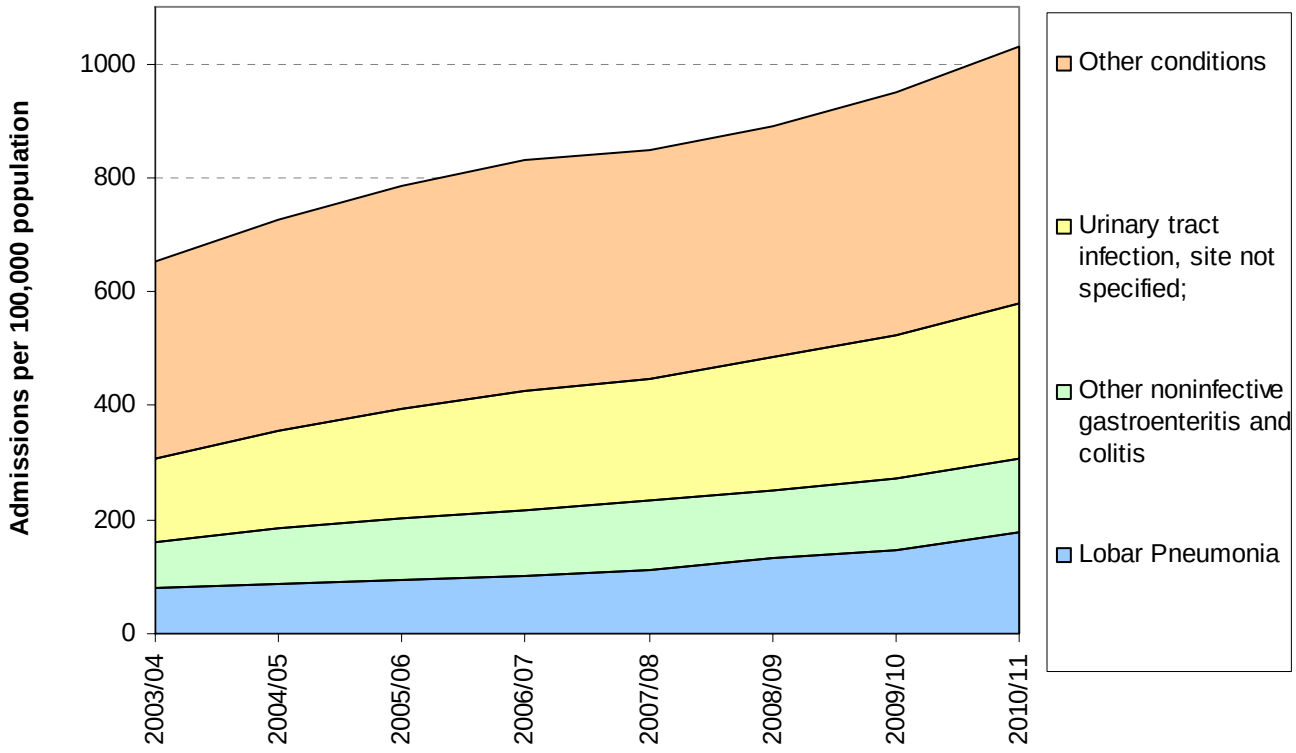
Breakdown by condition

Table 3a.b Emergency admissions for conditions that should not require hospitalisation by condition (per 100,000 population)

Year	Lobar Pneumonia	Other noninfective gastroenteritis and colitis	Urinary tract infection, site not specified;	Other conditions	Total
2003/04	78.6	81.2	147.2	346.2	653.2
2004/05	86.3	100.2	170.4	368.8	725.7
2005/06	93.2	108.9	191.6	390.4	784.1
2006/07	101.4	116.0	207.4	404.9	829.7
2007/08	112.6	120.1	214.8	402.5	850.0
2008/09	133.0	119.4	231.5	406.0	889.9
2009/10	146.0	126.7	252.7	424.0	949.4
2010/11	179.1	127.1	272.8	452.6	1031.6
% change 03/04 to 10/11	127.9%	56.5%	85.3%	30.7%	57.9%
% annual average change	12.5%	6.6%	9.2%	3.9%	6.7%

Source: NHS Information Centre

Figure 3a.b Emergency admissions for conditions that should not require hospitalisation by condition (for 100,000 population)



Source: NHS Information Centre

5.22. The breakdown by condition shows that three conditions are responsible for a large part (around 70%) of the increase in the indicator over the period 2003/04 to 2010/11:

- ICD10 Code: J18.1 Lobar Pneumonia unspecified
- ICD10 Code: N39.0 Urinary tract infection. Site not specified
- ICD10 Code: K52.9 Non-infective gastroenteritis and colitis, unspecified

5.23. HPA surveillance data for invasive pneumococcal disease (the most common cause of pneumonia) suggests that rates have been increasing since 2003.

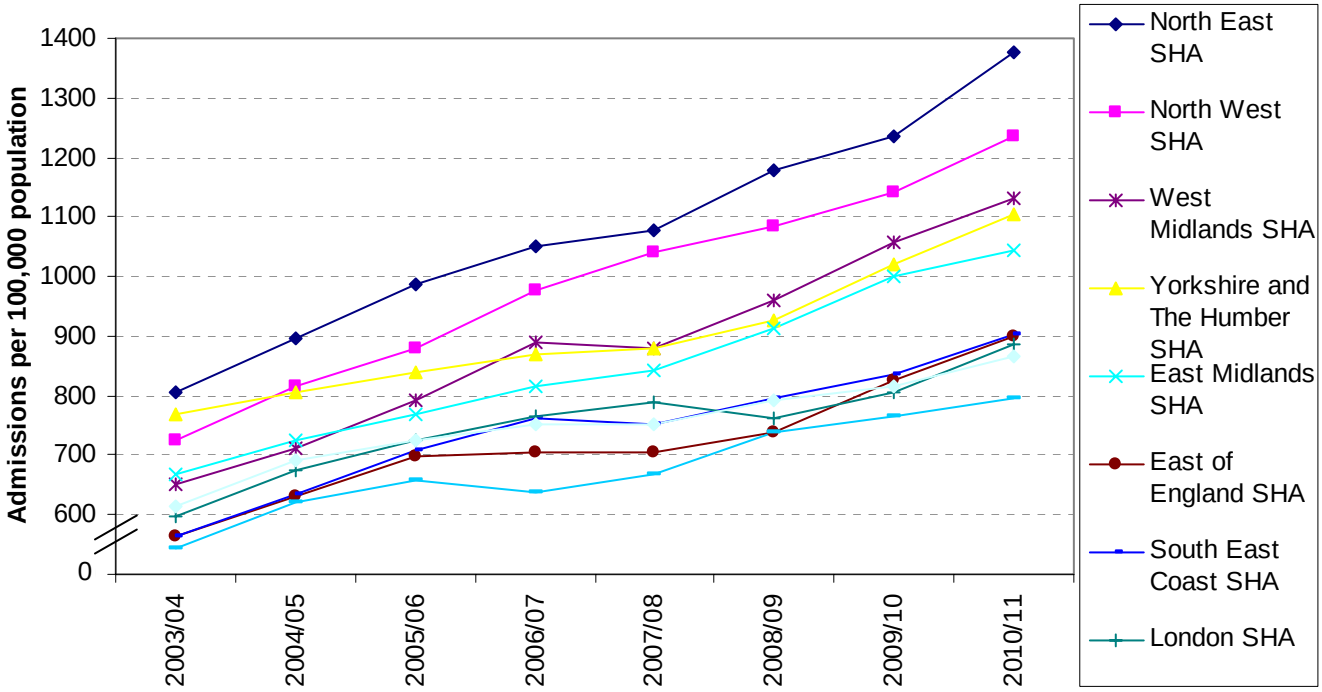
Emergency admission rates by Strategic Health Authority (SHA)

Table 3a.c Emergency admission rates by SHA for conditions which should not require hospitalisation (per 100,000 population)

Year	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East Coast	South Central	South West	England
2003/04	805	726	768	666	651	563	597	565	545	613	653
2004/05	896	816	806	724	711	631	675	633	622	691	726
2005/06	988	881	839	770	794	698	726	709	658	724	784
2006/07	1049	976	868	817	889	705	765	761	636	752	830
2007/08	1078	1041	880	844	880	705	787	751	666	754	850
2008/09	1178	1083	927	913	961	740	763	794	740	792	890
2009/10	1234	1140	1019	999	1057	824	806	835	764	816	949
2010/11	1375	1235	1104	1043	1130	898	887	903	796	865	1032
% change 03/04 to 10/11	70.9%	70.1%	43.7%	56.5%	73.6%	59.5%	48.6%	60.0%	46.0%	41.2%	57.9%
% annual average change	**8.0%**	**7.9%**	**5.3%**	**6.6%**	**8.2%**	**6.9%**	**5.8%**	**6.9%**	**5.6%**	**5.1%**	**6.7%**

Source: NHS Information Centre

Figure 3a.c Emergency admission rates by SHA for conditions which should not require hospitalisation (for 100,000 population)



Source: NHS Information Centre

5.24. Every SHA has seen an increase in their rate of admissions over this period. The variation seems to be relatively persistent, with few changes in the relative position of different SHAs. The dispersion of admissions has also increased over this period: the ratio of the highest number of admissions per 100,000 population to the lowest increasing from 1.48 to 1.73 over the last seven years.

5.25. The percentage increase in emergency admissions per 100,000 population over this period has been particularly great for the North West, North East and West Midlands SHAs.

Breakdown by ethnicity and by age

5.26. Breakdowns of this indicator by ethnicity and by age should be available later in the year.

Notes:

5.27. The main features of the time series to be explained are:

- The sustained increase in admissions over this period.
- The particularly sharp increases in particular conditions (pneumonia)
- The sustained divergence of admissions rates between different UK regions

Drivers of this indicator

KEY DRIVERS	
Incidence of underlying conditions	Increased incidence of the conditions covered by indicator 3a will be expected to increase the number of emergency admissions for that condition. As explained below, the increase in the incidence of pneumonia explains part of the increase in 3a admissions.
Prevalence of co-morbidities and age	The prevalence of co-morbidities can make patients more fragile and likely to require hospitalisation for acute conditions that would not usually require hospitalisation. This applies particularly to Long Term Conditions such as diabetes and hypertension. An ageing population is likely to be associated with more fragile health and an increase in co-morbidities. Therefore, age is one of the likely drivers of this indicator.
Education and prevention	The level to which patients are educated in managing their own healthcare decisions will have an influence on their hospitalisation rate when they are affected by an acute condition. Education is a fundamentally important driver of healthcare protection and prevention.
Obesity	Obesity can affect the likelihood that acute conditions will require hospitalisation. There is evidence of the link between obesity and hospital admission for influenza, one of the conditions covered by indicator 3a. A WHO study found doubled rates of ICU admission and death for obese patients [1]

Smoking	Smoking can affect directly the incidence and seriousness of several of the conditions included as part of indicator 3a. It is also linked with many co-morbidities that can affect the conditions related to indicator 3a.
Excessive alcohol consumption	Excessive alcohol consumption can affect directly the incidence and seriousness of several of the conditions included as part of indicator 3a. It is also linked with many co-morbidities that can affect the conditions related to this indicator. Alcohol increases acute hospital admissions for amongst others, Gastro-intestinal disturbances and Cardio-vascular disease[2]
Salt consumption	Salt consumption can affect directly the incidence and seriousness of several of the conditions included as part of indicator 3a. It is also linked with many co-morbidities that can increase the likelihood of hospitalisation for acute conditions.
Illicit drug use	Illicit drug use can affect directly the incidence and seriousness of several of the conditions included as part of this indicator. It is also linked with many co-morbidities that can increase the likelihood of hospitalisation for acute conditions.
Physical activity	Physical activity can affect directly the incidence and seriousness of several of the conditions included as part of indicator 3a. It can also reduce many co-morbidities that can increase the likelihood of hospitalisation for acute conditions.
Cholesterol	Cholesterol can affect directly the incidence and seriousness of several of the conditions included as part of this indicator. It is also linked with many co-morbidities that can increase the likelihood of hospitalisation for acute conditions.

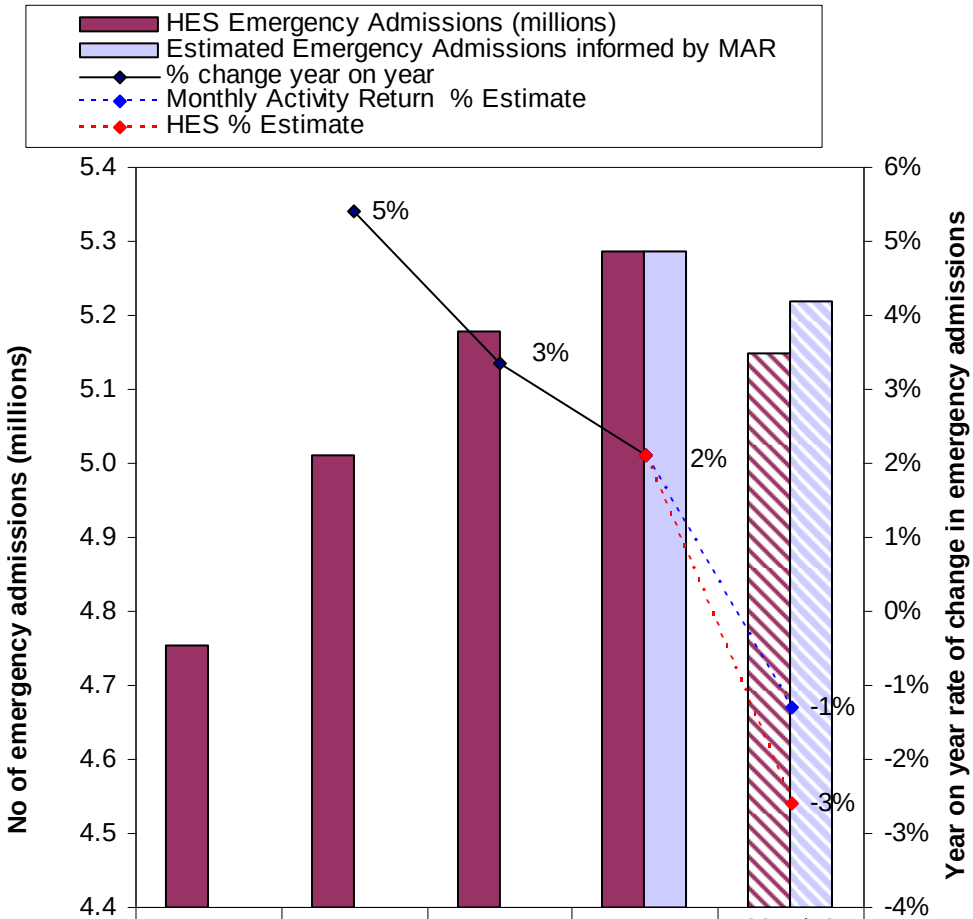
Emergency admissions policy	This indicator aims to capture the performance of primary care in treating patients to avoid emergency admissions. However, it will also be affected by the policy of hospitals on emergency admissions. Overall emergency admissions have increased over the same period, although at a slower rate than those admissions included in indicator 3a. It has been suggested that past emergency admissions policy may have been influenced by the A&E four-hour waiting time standard set up in 2000 and amended on clinical advice in 2010. Similarly, it is possible that the previous Payment by Results policy of paying Trusts per patient admitted may have led to an increase in emergency admissions over this period by giving Trusts financial incentives to admit patients. The current Payment by Results policy restricts the payment of emergency admissions to 30% of the tariff for admissions over a 2008/09 baseline, and additionally restricts payments for avoidable emergency readmissions. The latest data on overall emergency admissions suggest that the growth in emergency admissions has come to a halt (see below). This would suggest that the policy changes mentioned above may be beginning to have an effect on emergency admissions.
HES Coding	This indicator is based on Hospital Episode Statistics data and as such is the dependent on each different hospital episode is assigned to a different diagnostic. Coding error can affect the indicator independently of changes in the underlying outcome. Changes to coding practice over time can also affect the indicator without reflecting changes to the underlying outcome. Over time, coding patterns have changed, particularly since around 2003/2004 when Payment By Results (PBR) was introduced. Over this period, NHS trusts have become increasingly sophisticated at coding additional complications that before that may not have been recorded. This may be relevant to indicator 3a, since the three codes identified above as being responsible for the bulk of the increase are for conditions that may occur as complications of hospital admission. It is also worth noting that these three codes are the broad ‘not specified’ codes, which would be consistent with hospitals increasing their depth of coding.

5.28. Relevant context for understanding the evolution of this indicator is the trend in overall levels of emergency admissions.

5.29. More recent data on overall emergency admissions (in contrast to those for the specified conditions per 100,000 population), discussed in Chapter Eight and summarised in Table 3a.b below, shows a recent plateau and perhaps a decline in admissions. Although this refers to emergency admissions rather than the ratio of emergency admissions per 100,000 population, the evolution of the ratio would be expected to be similar.

Table 3a.d Overall emergency admissions (latest data)

Trend in Emergency Admissions, Provisional Monthly Hospital Episode Statistics (HES)



	2007/08	2008/09	2009/10	2010/11	2011/12 Estimates
HES Emergency Admissions (millions)	4.75	5.01	5.18	5.29	5.15
Estimated Emergency Admissions informed by MAR				5.29	5.22
% change year on year		5%	3%	2%	
Monthly Activity Return % Estimate				2%	-1%
HES % Estimate				2%	-3%

Source: Hospital Episode Statistics, DH

5.30. Over the previous 4 years, Hospital Episode Statistics (HES) emergency admissions have increased year on year. However, the rate of increase has slowed from around 5% between 2007/08 and 2008/09 to around 2% between 2009/10 and 2010/11.

5.31. Based on provisional outturn data for 2011/12, emergency admissions are expected to fall by around 3% with respect to 2010/11 admissions, although this should be confirmed once the whole year's data is available. The estimate is based upon grossing up provisional monthly data. Since provisional data has an error margin of around 2% with respect to final data, that could account for most of the 3% reduction.

5.32. Further context is provided by looking at the rate of emergency admissions for acute conditions that should not require hospitalisation for each age group.

5.33. The admission rates for each age group are calculated as the number of relevant emergency admissions per 100,000 people in that age group. They reflect the likelihood that a person in a specific age group will have an emergency admission due to the conditions included in indicator 3a.

5.34. Because the number of admissions for each group is divided by the population in that age group, the figures shown below do not add up to indicator 3a.

Table 3a.d Emergency admission rates for 3a conditions by age

Year	19-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	All ages
2003/04	437	401	381	366	359	363	384	429	532	699	992	1511	2375	4215	653.2
2004/05	483	437	424	400	400	404	428	467	583	757	1088	1693	2684	4771	725.7
2005/06	532	481	446	429	423	433	461	504	629	818	1177	1829	2882	5095	784.1
2006/07	529	496	456	449	443	455	497	518	671	889	1273	1957	3078	5333	829.7
2007/08	518	503	463	458	444	465	503	543	672	918	1308	2009	3185	5434	850.0
2008/09	526	499	458	451	453	467	512	584	700	952	1378	2125	3409	5878	889.9
2009/10	567	506	483	476	474	497	552	630	736	1021	1475	2282	3569	6308	949.4
2010/11	599	531	514	501	506	540	602	673	818	1091	1598	2427	3870	6759	1031.6
% change 03/04 to 10/11	37.0%	32.4%	35.1%	36.7%	40.8%	48.9%	56.9%	56.9%	53.7%	56.0%	61.0%	60.6%	62.9%	60.4%	57.9%
% annual average change	4.6%	4.1%	4.4%	4.6%	5.0%	5.9%	6.7%	6.6%	6.3%	6.6%	7.0%	7.0%	7.2%	7.0%	6.7%

Source: NHS Information Centre

5.35. The variation across groups reflects the fact that older people are more likely to have an emergency admission than younger people are. However, the variation over time shows that, although this likelihood has increased for every age group, it has done more for some groups than for others, with particularly strong increases for those older than 70.

5.36. This particularly strong increase could reflect an increasing fragility of the older population. This could be due to an increase in co-morbidities that make hospitalisation more likely, or perhaps a deterioration in the health status of elderly people as a consequence of improved medical treatment extending lives further than before.

5.37. Regarding the noted particular rise in certain conditions, research on admissions for Pneumonia[3,4] seems to indicate that the increase in recent years cannot be fully explained by age, co-morbidities, or social gradient and it has also occurred in other developed countries. One of the suggested reasons for this increase is pollution and the study reviews the clinical studies literature that link pollution to pneumonia.

5.38. This supports the view that there is some background increase in the incidence of pneumonia. If this is the case, the increase in admissions due to Lobar pneumonia should not be attributed to the NHS. It is not clear however that this increase should be expected to continue into the future.

5.39. Similarly, there is the possibility that the increase in Other non-infective gastroenteritis and colitis cases could be due to a mis-coding of norovirus patients. HPA data suggests that laboratory reports of norovirus infections have increased over the time period – especially since 2006, with 2010 seeing almost 6 times the number of reports as in 2000.

(b) Indicator 3a: Current Practice Projections Methodology

5.40. The projections arrived at in Table 3a.e and Figure 3a.e are arrived at via the following methodology:

- The default position that the indicator will remain “flat” is accepted.
- There are several factors that are independent of the NHS which, were they continue into the future, could lead us to expect an upward trend of this indicator, in particular increased pollution as a driver of incidence of pneumonia and increased fragility of health of the elderly population. However, there is no secure base for projecting such trends forward.
- Other factors can have a more ambiguous effect on the indicator, such as mis-coding and changes in coding patterns.

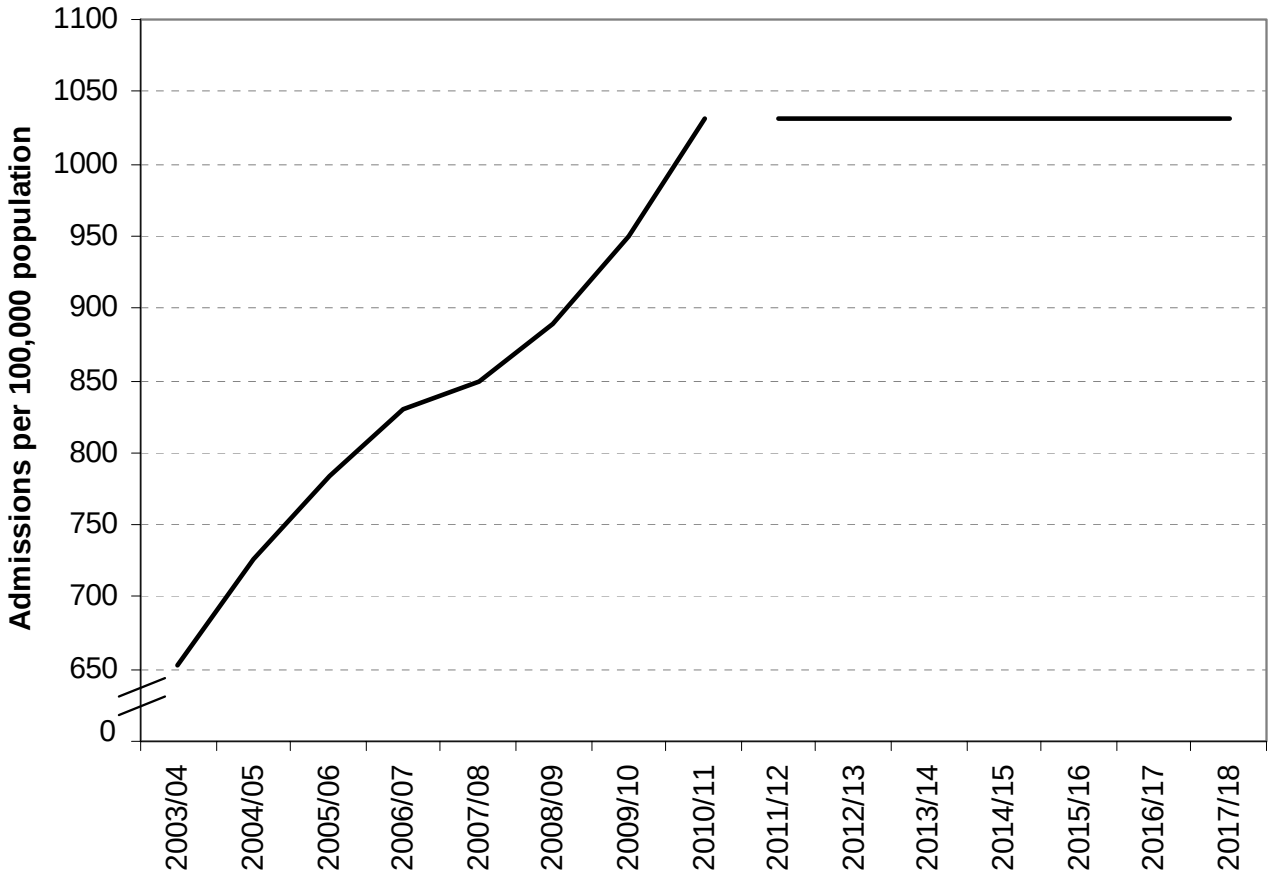
- Factors such as the recent and expected changes in admission policy would be expected to reduce incentives for emergency admissions.
- The halt in the growth shown by the latest data on overall emergency admissions (which includes 2011/12 data points and is ahead of the available data for indicator 3a) supports the conclusion that overall effects are likely to cancel out.
- Based on this we provisionally make a flat projection for indicator 3a.

3a.e Emergency admissions for conditions that should not require hospitalisation (per 100,000 population)

Year	Outturn	Forecast
2003/04	653.2	
2004/05	725.7	
2005/06	784.1	
2006/07	829.7	
2007/08	850.0	
2008/09	889.9	
2009/10	949.4	
2010/11	1031.6	
2011/12		1031.6
2012/13		1031.6
2013/14		1031.6
2014/15		1031.6
2015/16		1031.6
2016/17		1031.6
2017/18		1031.6

Source: NHS Information Centre, DH

Figure 3a.e Emergency admissions for conditions that should not require hospitalisation (per 100,000 population)



Source: NHS Information Centre, DH

(c) Indicator 3a: Scope for Improvement

5.41. The NHS Atlas of Variation shows a great degree of variation in this indicator. It is this variation that has motivated several current and planned policy initiatives that are likely to lead to improvements in this outcome within current resources.

5.42. The Department estimates that it should be possible to reduce emergency hospital admissions by 20% as previously described in paragraph 4.82. Local organisations may however be aiming for improvements that are higher or lower than this depending on their local circumstances. There are a number of local initiatives designed to reduce admissions, including the “Doctor First” scheme that has been adopted by several practices with encouraging results.

5.43. The Quality and Outcomes Framework now contains indicators that reward practices for working to reduce emergency admissions (from 2011/12) and since April 2012 contains new indicators on reducing avoidable A&E attendances through improving care provided and access to primary care. These indicators could be expected to reduce avoidable admissions, by providing incentives to reduce emergency admissions.

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3b – Emergency readmissions within 30 days of discharge from hospital

Outcome sought	**Effective recovery from illnesses and injuries requiring hospitalisation.**
Updated definition	Emergency admissions to any hospital in England occurring within 30 days of the last, previous discharge from hospital as a percentage of all admissions. The indicator will be standardised by age and sex. However, these are not currently available and non-standardised data have been used instead for the purposes of this template.

(a) Indicator 3b: Recent Trends and Explanations

5.44. This indicator is still in development. Data are not yet available for the precise definition of this indicator, so no recent trends can be established on this basis.

5.45. However, data are available for emergency readmissions within 28 days of discharge. These data also differ from the outcomes framework indicator by excluding cases coded under mental health specialities. As moving from a 30 day period to a 28 day period should only have a scale effect, the trends identified for this series should be comparable in this sense. The exclusion of mental health cases may however cause these trends to differ. OECD data for UK 30 day schizophrenia readmissions shows a fall from 11.03% in 2007 to 10.14% in 2009. Although the magnitude of these figures are comparable, they are clearly showing a decline, which differs from the overall trend. As such, our proxy variable may overestimate changes in emergency readmissions rates.

5.46. The 28 day emergency readmission rate rose by 2.7% between 2008/9 and 2009/10, from 10.92% to 11.22%.

5.47. There has been a continuous increase in emergency readmissions since 2000/01, with an average increase of 3.2% a year.

5.48. One of the factors behind this increase has been the changing case-mix of patients. As the quality of healthcare provision rises, increasingly frail patients who might have otherwise not survived make up a larger percentage of cases. With more comorbidities these people are at a higher risk of being readmitted, raising the overall rate. Whilst the age, sex and procedure standardisation process will partly take this into account, the data presented here have not been adjusted to reflect any change in the prevalence of comorbidities.

5.49. Changing clinical and recording practices have also likely contributed to the observed increase, as an increasing number of simple cases are being treated as day cases, thus excluding them from these figures.

5.50. Emergency readmissions provide us with information on the quality of clinical services provided by the NHS. To the extent that providing better care can reduce rates, we should attempt to minimise readmissions. However, studies have shown that the majority of emergency readmissions are not actually avoidable. For example, a meta-analysis of papers[2] found that for 16 studies looking at 28 or 30 day periods, between 5% and 59% of emergency readmissions were deemed avoidable. Although these studies were done in various countries, a UK specific figure was estimated at 15.6%. Many readmissions may also not actually be readmissions, merely additional admissions that are unrelated to initial hospitalisation spells. Some readmissions for children may be planned if the condition deteriorates – for example, a child admitted for observation and diagnosed with bronchiolitis (which usually peaks at day 5) but not in need of overnight hospital care may be discharged with safety net advice to return and be readmitted (e.g. if not completing a specified amount of feed.) However, this is very difficult to assess without detailed clinical analysis performed on a case by case basis.

Breakdown by Age

5.51. People over 75 are at the highest risk of being readmitted as an emergency case, and are also experiencing the fastest increase. The >75 readmission rate increased by 3.5% between 2008/09 and 2009/10, compared to 3.0% for 16-74 year olds and 1.0% for under 16s.

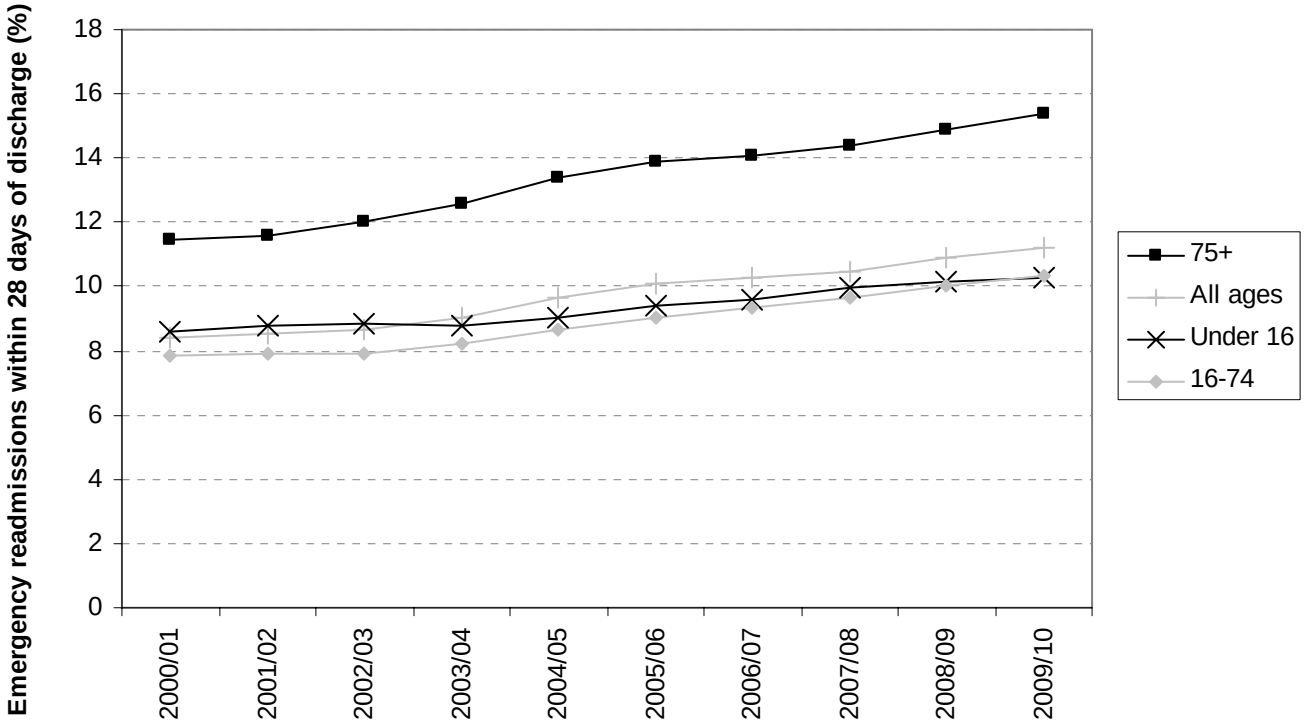
Table 3b.a Emergency readmissions within 28 days of discharge, crude volume and as a percentage of total admissions, by age group

	Readmissions				Readmissions as a percentage of total admissions			
	Under 16	16-74	75+	All ages	Under 16	16-74	75+	All ages*
2000/01	59319	211691	99930	370940	8.62	7.82	11.49	8.42
2001/02	62102	212318	101870	376290	8.79	7.89	11.59	8.56
2002/03	61420	216555	108607	386582	8.85	7.92	12.02	8.65
2003/04	62721	243284	123673	429678	8.76	8.25	12.57	9.06
2004/05	66019	268268	139012	473299	9.06	8.65	13.37	9.67
2005/06	72362	292787	152282	517431	9.38	9.01	13.90	10.12
2006/07	72869	302050	154063	528982	9.58	9.35	14.09	10.29
2007/08	77663	309675	159146	546484	9.99	9.65	14.39	10.49
2008/09	82890	331929	176790	591609	10.15	10.03	14.89	10.92
2009/10	84718	347198	188138	620054	10.25	10.33	15.41	11.22
Average annual increase	4.0%	5.7%	7.3%	5.9%	1.9%	3.1%	3.3%	3.2%

Source: NHS Information Centre, DH

5.52. *The age specific rates have been indirectly age, sex, method of admission and diagnosis / procedure standardised where appropriate. This means that each figure presented is the rate that would have been observed had the population demographics for each year remained constant. However, the figures for all ages have only been very basically age / sex standardised using a limited number of age groups. This is a temporary measure by DH, and the final indicator will be fully standardised.

Figure 3b.a Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by age group



Source: NHS Information Centre, DH

Breakdown by Gender

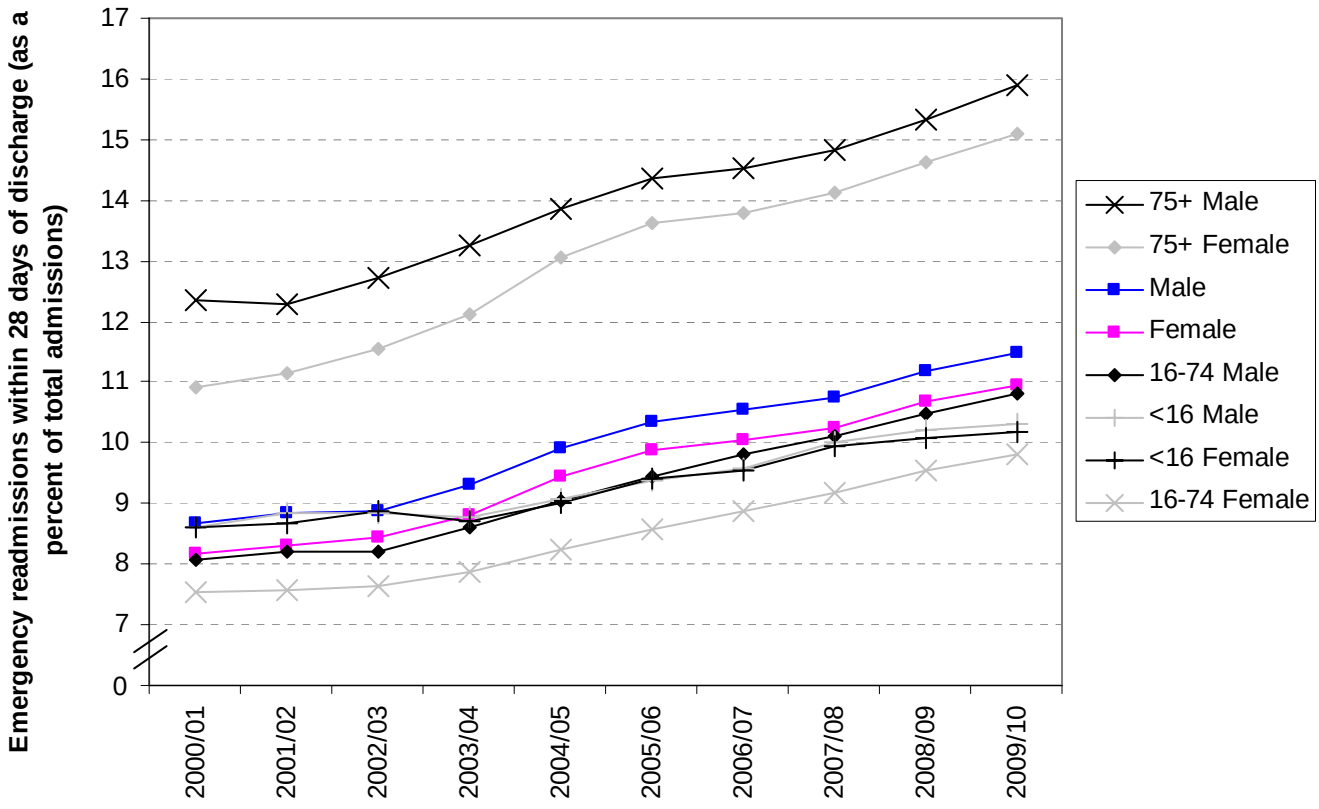
5.53. Males have experienced higher emergency readmission rates than females throughout the last decade, with a difference of 5.0% in 2009/2010. However, male and female rates are similar for the under 16 age group.

Table 3b.b Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by age group and gender

	<16 Female	<16 Male	16-74 Female	16-74 Male	75+ Female	75+ Male	All Females*	All Males*
2000/01	8.61	8.61	7.55	8.07	10.93	12.35	8.17	8.69
2001/02	8.68	8.85	7.56	8.19	11.15	12.27	8.30	8.84
2002/03	8.86	8.83	7.63	8.19	11.56	12.71	8.45	8.86
2003/04	8.71	8.79	7.87	8.60	12.11	13.27	8.82	9.32
2004/05	9.02	9.09	8.24	9.04	13.04	13.87	9.45	9.90
2005/06	9.41	9.37	8.56	9.46	13.61	14.36	9.89	10.36
2006/07	9.55	9.59	8.89	9.80	13.80	14.54	10.05	10.54
2007/08	9.95	10.02	9.17	10.11	14.12	14.82	10.24	10.75
2008/09	10.07	10.20	9.56	10.49	14.61	15.34	10.67	11.18
2009/10	10.17	10.30	9.82	10.83	15.10	15.91	10.96	11.50
Average annual increase	1.9%	2.0%	3.0%	3.3%	3.7%	2.9%	3.3%	3.2%

Source: NHS Information Centre, DH

Figure 3b.b Emergency readmissions within 28 days of discharge, as a percentage of total admissions, age group and gender



Source: NHS Information Centre, DH

Breakdown by IMD

5.54. The effect of socioeconomic status on readmission rates differs across age groups. Whereas the impact on adults has remained similar for the past decade, it has declined for people under 16.

Ages under 16

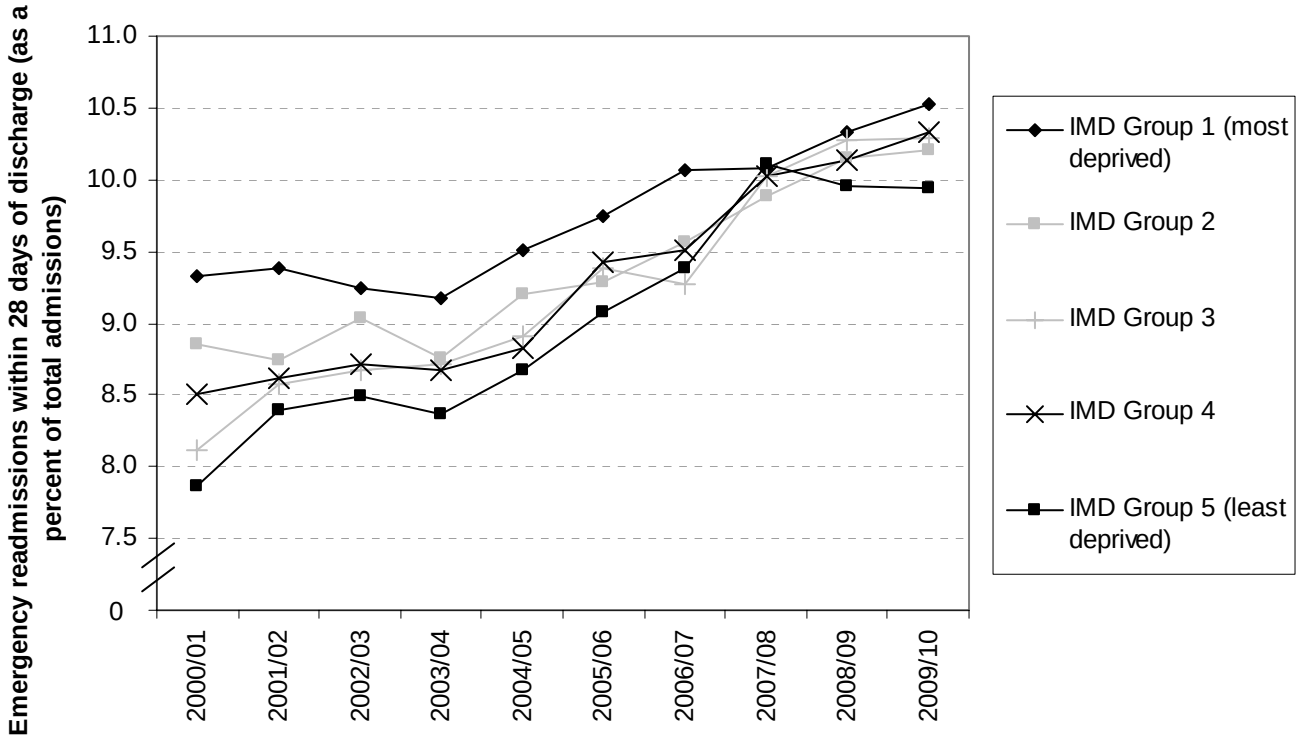
5.55. The disparity between emergency readmission rates for less deprived and more deprived under 16 year olds has fallen over the past decade, with the difference between the highest and lowest quintiles in 2009/10 of only 5.9% compared to 18.7% in 2000/01.

Table 3b.c Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by IMD quintile, under 16s

	IMD Group 1 (most deprived)	IMD Group 2	IMD Group 3	IMD Group 4	IMD Group 5 (least deprived)
2000/01	9.33	8.86	8.12	8.50	7.86
2001/02	9.38	8.74	8.57	8.62	8.39
2002/03	9.24	9.04	8.67	8.71	8.49
2003/04	9.17	8.76	8.71	8.67	8.37
2004/05	9.51	9.20	8.91	8.82	8.67
2005/06	9.74	9.28	9.38	9.43	9.07
2006/07	10.06	9.56	9.27	9.51	9.39
2007/08	10.08	9.89	10.02	10.02	10.11
2008/09	10.33	10.15	10.28	10.14	9.95
2009/10	10.53	10.21	10.29	10.33	9.94
Average annual increase	1.35%	1.59%	2.67%	2.19%	2.64%

Source: NHS Information Centre

Figure 3b.c Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by IMD quintile, under 16s



Source: NHS Information Centre

Ages 16-74

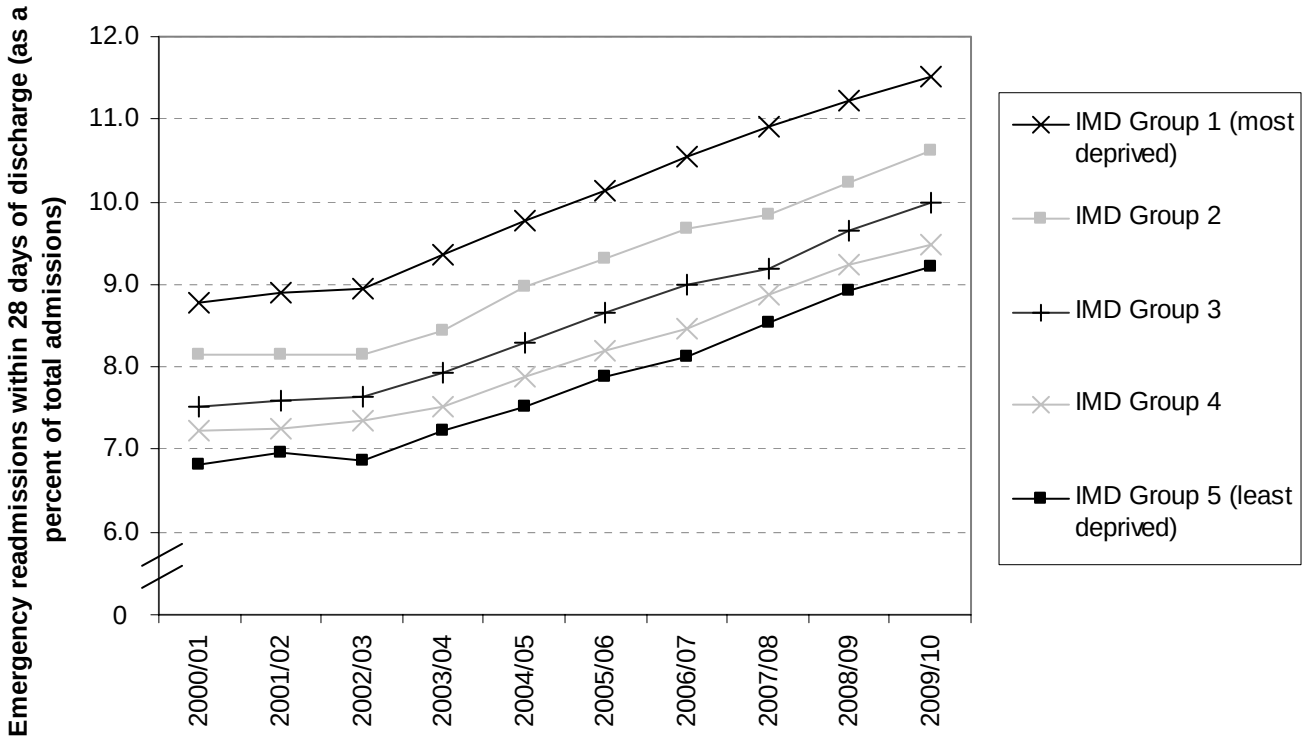
5.56. The impact of socioeconomic status on emergency readmission rates for the 16-74 age group has remained constant over the last 10 years. The most deprived quintile reported rates 25.0% higher than the least deprived quintile in 2009/10.

Table 3b.d Emergency readmissions within 28 days of discharge, as a percentage of total admissions, IMD quintile, ages 16-74

	IMD Group 1 (most deprived)	IMD Group 2	IMD Group 3	IMD Group 4	IMD Group 5 (least deprived)
2000/01	8.79	8.14	7.51	7.24	6.82
2001/02	8.89	8.14	7.59	7.25	6.97
2002/03	8.96	8.16	7.64	7.35	6.86
2003/04	9.37	8.43	7.92	7.51	7.22
2004/05	9.76	8.97	8.29	7.88	7.53
2005/06	10.14	9.30	8.66	8.20	7.89
2006/07	10.55	9.68	8.99	8.47	8.12
2007/08	10.90	9.84	9.19	8.87	8.53
2008/09	11.23	10.24	9.64	9.24	8.93
2009/10	11.51	10.62	10.00	9.47	9.21
Average annual increase	3.04%	3.00%	3.23%	3.03%	3.39%

Source: NHS Information Centre

Figure 3b.d Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by IMD quintile, ages 16-74



Source: NHS Information Centre

Ages 75+

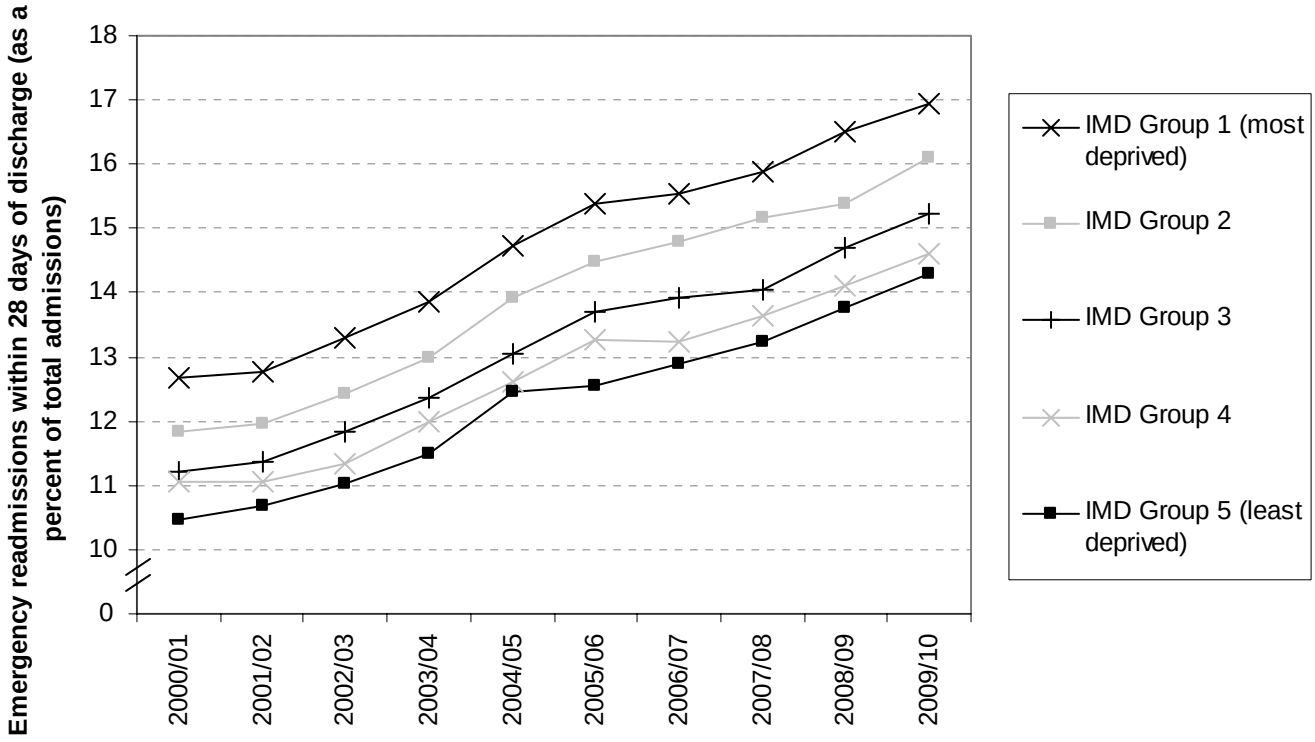
5.57. The figure for the most deprived quintile of over 75s was 21.3% higher than the least deprived in 2009/10, and there has been no sustained decline in this difference over the period.

Table 3b.e Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by IMD quintile, over 75s

	IMD Group 1 (most deprived)	IMD Group 2	IMD Group 3	IMD Group 4	IMD Group 5 (least deprived)
2000/01	12.69	11.83	11.22	11.06	10.47
2001/02	12.77	11.97	11.36	11.04	10.68
2002/03	13.31	12.43	11.83	11.35	11.01
2003/04	13.86	12.99	12.36	12.00	11.50
2004/05	14.72	13.91	13.06	12.62	12.46
2005/06	15.39	14.47	13.69	13.28	12.56
2006/07	15.55	14.78	13.92	13.23	12.89
2007/08	15.87	15.18	14.05	13.65	13.24
2008/09	16.52	15.39	14.69	14.12	13.77
2009/10	16.93	16.11	15.22	14.62	14.28
Average annual increase	3.25%	3.49%	3.45%	3.15%	3.51%

Source: NHS Information Centre

Figure 3b.e Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by IMD quintile, over 75s



Source: NHS Information Centre

Breakdown by region

5.58. Similar patterns of regional variation are seen across the three age groups, although more year-on-year fluctuations are visible for under 16s.

Ages under 16

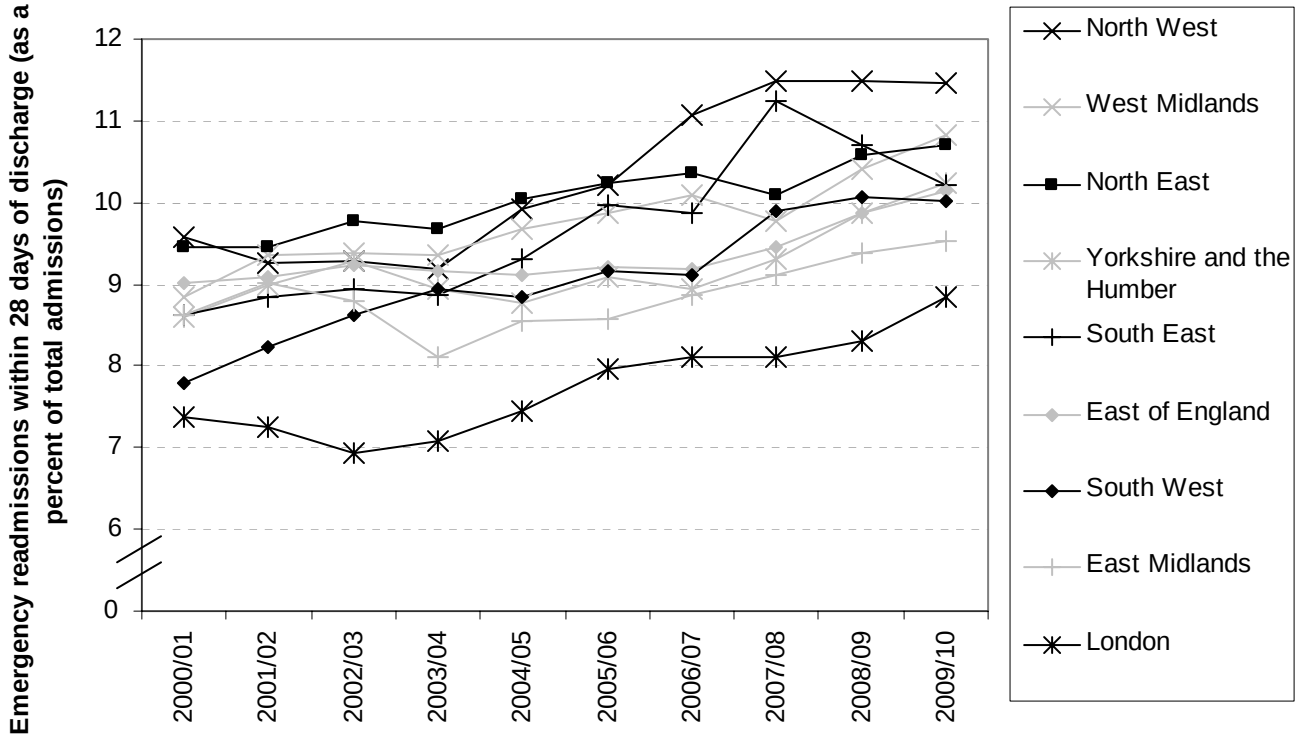
5.59. In 2009/10, the highest regional rate for under 16s was 29.6% higher than the lowest, a figure that has remained fairly constant over the decade.

Table 3b.f Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by region, under 16s

	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West
2000/01	9.45	9.57	8.61	8.62	8.84	9.01	7.37	8.63	7.80
2001/02	9.46	9.26	8.99	9.01	9.36	9.08	7.26	8.84	8.23
2002/03	9.78	9.29	9.29	8.79	9.37	9.24	6.93	8.93	8.62
2003/04	9.67	9.18	8.93	8.12	9.35	9.17	7.07	8.86	8.95
2004/05	10.05	9.93	8.77	8.54	9.68	9.11	7.44	9.31	8.85
2005/06	10.23	10.22	9.09	8.57	9.88	9.21	7.95	9.97	9.15
2006/07	10.36	11.08	8.95	8.87	10.09	9.18	8.10	9.88	9.12
2007/08	10.09	11.48	9.30	9.12	9.78	9.45	8.11	11.25	9.90
2008/09	10.57	11.49	9.88	9.37	10.42	9.87	8.30	10.70	10.06
2009/10	10.71	11.47	10.23	9.54	10.83	10.13	8.85	10.21	10.02
Average annual increase	1.40%	2.03%	1.93%	1.13%	2.28%	1.31%	2.05%	1.89%	2.82%

Source: NHS Information Centre

Figure 3b.f Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by region, under 16s



Source: NHS Information Centre

Ages 16-74

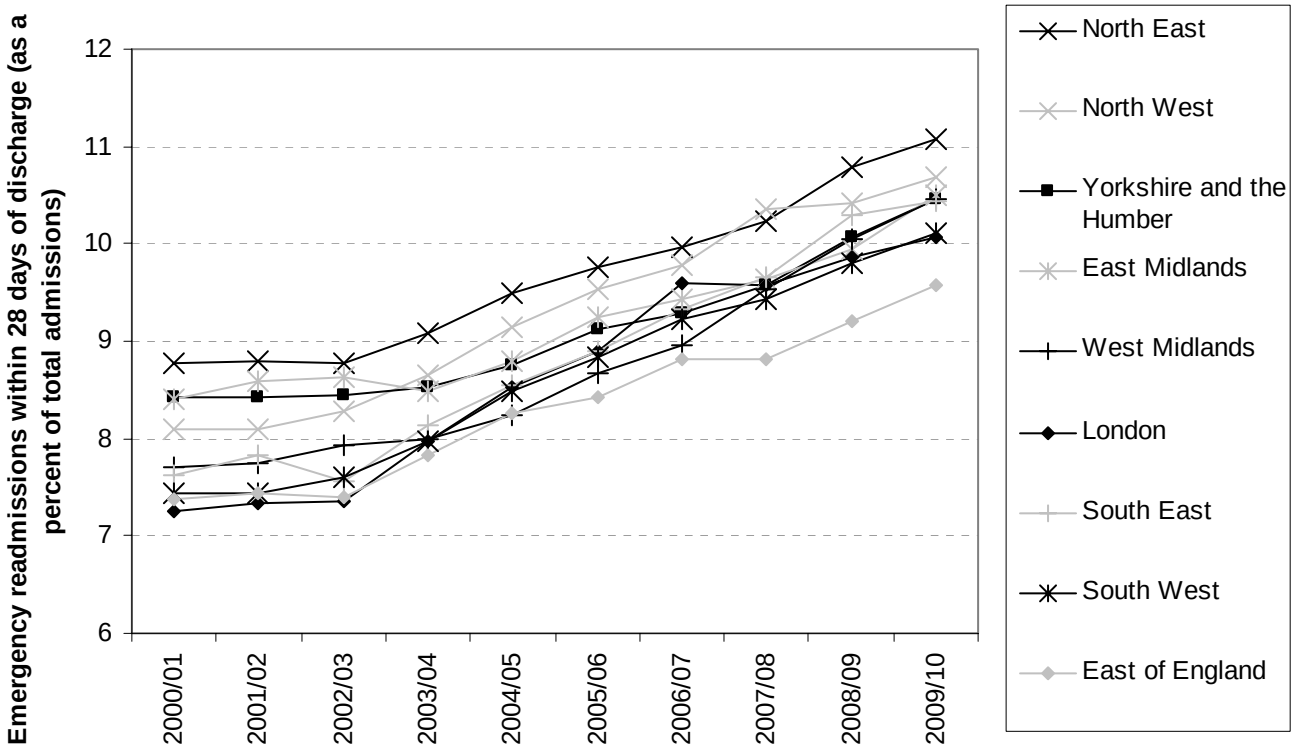
5.60. There is less variation for the 16-74 age group, with the highest regional rate being 15.7% above the lowest in 2009/10. However, there is no evidence to suggest that this difference has been declining over time.

Table 3b.g Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by region, ages 16-74

	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West
2000/01	8.77	8.10	8.42	8.40	7.70	7.37	7.26	7.63	7.44
2001/02	8.80	8.10	8.42	8.59	7.75	7.44	7.33	7.83	7.44
2002/03	8.77	8.28	8.45	8.63	7.94	7.40	7.36	7.56	7.61
2003/04	9.09	8.65	8.53	8.49	7.99	7.83	7.98	8.13	7.97
2004/05	9.50	9.15	8.75	8.79	8.23	8.27	8.52	8.54	8.48
2005/06	9.77	9.54	9.12	9.24	8.68	8.43	8.89	8.90	8.83
2006/07	9.97	9.78	9.29	9.43	8.95	8.82	9.59	9.33	9.22
2007/08	10.24	10.35	9.58	9.63	9.53	8.81	9.58	9.66	9.44
2008/09	10.78	10.42	10.07	9.95	10.05	9.21	9.86	10.29	9.81
2009/10	11.08	10.69	10.46	10.50	10.45	9.58	10.06	10.44	10.10
Average annual increase	2.63%	3.13%	2.44%	2.51%	3.45%	2.96%	3.69%	3.55%	3.45%

Source: NHS Information Centre

Figure 3b.g Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by region, ages 16-74



Source: NHS Information Centre

Ages 75+

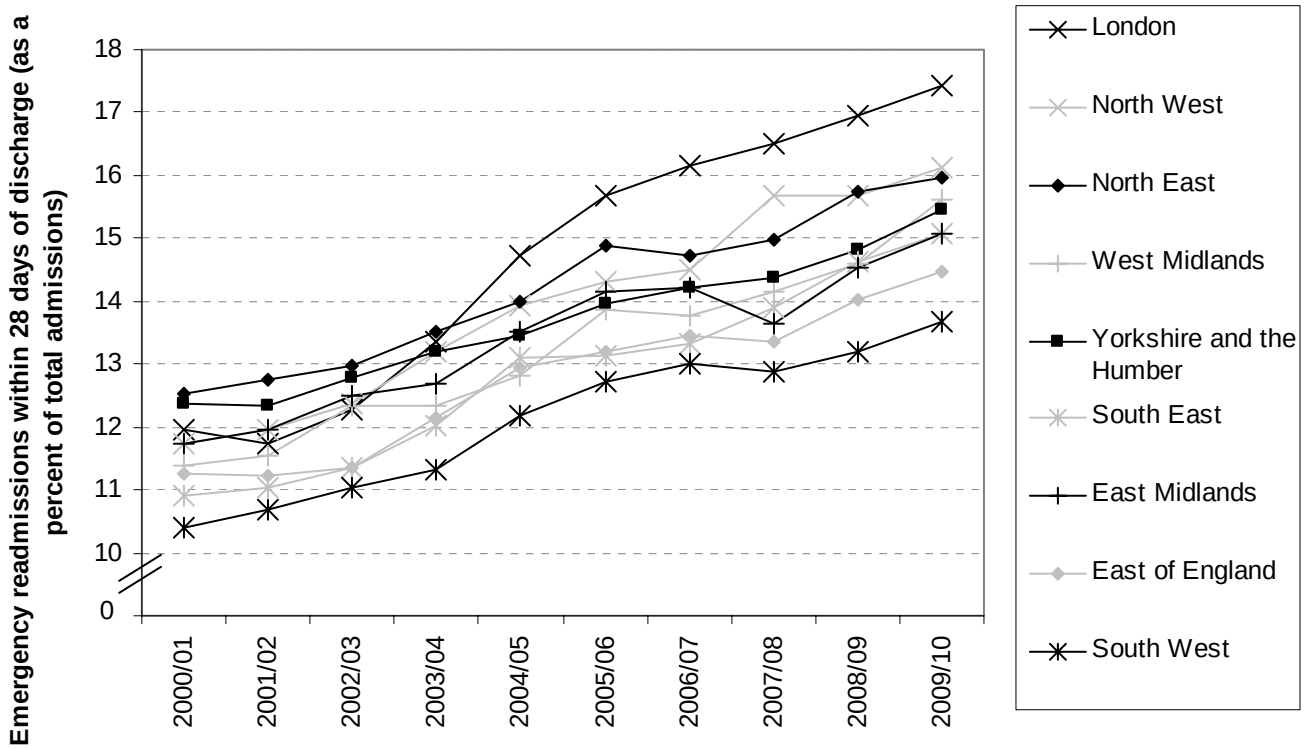
5.61. The highest regional rate for over 75 year olds was 20.5% higher than the lowest in 2009/10. Interestingly, despite being the region with the lowest rate for under 16s, it is London that has the highest rates for over 75s.

Table 3b.h Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by region, over 75s

	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West
2000/01	12.52	11.72	12.36	11.75	11.37	11.25	11.97	10.90	10.40
2001/02	12.75	11.97	12.35	11.96	11.53	11.22	11.74	11.02	10.67
2002/03	12.97	12.38	12.78	12.50	12.33	11.34	12.29	11.36	11.04
2003/04	13.53	13.19	13.21	12.68	12.34	12.15	13.37	12.02	11.31
2004/05	14.00	13.92	13.45	13.53	12.82	12.95	14.73	13.11	12.17
2005/06	14.87	14.32	13.95	14.15	13.87	13.20	15.68	13.14	12.71
2006/07	14.72	14.51	14.20	14.20	13.77	13.46	16.15	13.32	13.01
2007/08	14.99	15.67	14.36	13.64	14.16	13.36	16.51	13.90	12.87
2008/09	15.75	15.69	14.82	14.52	14.59	14.04	16.95	14.62	13.20
2009/10	15.96	16.13	15.47	15.07	15.61	14.47	17.43	15.08	13.66
Average annual increase	2.73%	3.61%	2.53%	2.80%	3.58%	2.84%	4.26%	3.67%	3.08%

Source: NHS Information Centre

Figure 3b.h Emergency readmissions within 28 days of discharge, as a percentage of total admissions, by region, over 75s



Source: NHS Information Centre

International position

5.62. The highly heterogeneous nature of readmission rates makes international comparison extremely difficult, with different countries reporting over different time horizons, for different conditions and with different standardizing procedures.

5.63. However, OECD data[3] on emergency readmissions for schizophrenia patients are available for a number of countries. Although this only represents a small subset of all readmissions, and will be influenced by factors such as mental health spending, it does give some indication of relative international performance. Compared to the few countries for which data is available for multiple years, the United Kingdom performs extremely well.

5.64. These figures should be viewed with caution due to potential differences in collection methodologies across countries. Tracking patients through admissions to multiple hospitals is challenging, and the extent to which countries are able to detect this may lead to level differences in the figures.

Table 3b.i Unplanned schizophrenia (any hospital) 30 day re-admission rate, age and sex standardised

	2007	2008	2009
United Kingdom	11.03		10.14
Denmark	24.29		25.02
Finland	20.92	23.1	
New Zealand	20.78	17.41	
Sweden	30.97	28.34	

Source: OECD

Notes:

5.65. Despite extensive research into emergency readmissions, it is still not fully understood what drives this indicator. Different factors may be at play for readmissions following elective surgery, where readmissions are likely to be an indicator of a failure of quality in the original admission, as compared to readmissions for people with longer term conditions, where readmissions may be related to the quality of community health and social services, or may be an inevitable result of the disease process. As such, there are a number of questions that remain to be answered:

- Are there factors beyond the changing casemix of patients that are responsible for the increase in readmissions?
- What was responsible for reducing the effect of deprivation on readmission rates for under 16 year olds?
- What percentage of readmissions are avoidable?

Drivers of this indicator

5.66. A literature review identified the following factors as significant drivers for hospital readmissions.

Socio-economic status	Socio-economic status has been identified as a key driver for coronary readmissions[4], but evidence for a more general impact is less well established[5].
Prevalence of co-morbidities	A number of studies[5 6] have found that the prevalence of multiple (>4) comorbidities plays a significant role. Individual co-morbidities, except for COPD and asthma[7], generally do not have a measurable effect on rates.
High frequency of previous admissions	Multiple studies[7 10] have found that the number of previous admissions are a strong predictor of readmissions. The 2008 NCHOD report into readmissions found that the proportion of individuals with >3 readmissions has a statistically significant effect on readmissions rates.

Other drivers:

Chronic kidney disease	Studies have found moderate/ severe kidney disease to increase chances of readmission[12].
Quality of care whilst living at home or in residential care	Patients over 65 who were discharged to nursing homes have been found to have a lower readmission rate than those discharged to private homes[13].
Mitigation of social isolation	Studies have found that patients who are single, and patients who have low-moderate social networks are at a higher risk of readmission[14].
Fuel poverty alleviation	Due to this drivers close relationship with socio-economic status it is expected to have a significant impact on readmission rates.
Age	Multiple studies have found that older individuals are more likely to be readmitted[5].
Heart failure	Studies have found that patients suffering from heart failure are more likely to be readmitted[5].
Polypharmacy	Studies have found polypharmacy to increase the likelihood of readmission[15].
Patient education and expectation	Clinicians have suggested that there is an increasing tendency to seek further specialist care if symptoms persist after an initial spell in hospital/ if surgical complications are more severe than expected.

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Healthcare contribution

5.67. The NHS' contribution to reducing emergency readmission rates primarily involves providing high quality care. In the hospital sector, this would include ensuring that patients are only discharged when it is when it is clinically appropriate to do so[5 6]. Early follow-ups have also been shown to reduce readmissions[8]. In community care, this involves the effective management of patients with longer term conditions to avoid repeated admissions to hospital for acute episodes of ill-health that could have been managed in the community. Strong links between hospital and community care are required to ensure that patients receive appropriate post-discharge care and that specialist advice is available on a 24-hour basis to help manage people in the community without the need for hospital admission.

Sources of bias

5.68. The measured readmission rate may not accurately reflect clinical outcomes due to changes in the way that cases are handled. With an increasing proportion of simple cases being handled as day cases (which are excluded from the denominator), the average difficulty of cases that are included increases. As more complex cases are more likely to require readmission, this would result in an upward bias on recorded rates. The increasing focus on prevention and enhanced primary care also helps prevent more simple cases from requiring hospitalisation, having a similar effect.

(b) Indicator 3b: Current Practice Projections

5.69. The projections displayed in Table 3b.j and Figure 3b.j were arrived at by the following methodology:

- The trend observed over the previous 10 years was extended to 2010/11 using linear regression. The estimated value for 2010/11 was then projected flat until the end of the period in 2017/18.

- This structure was chosen because:
    - The increase seen over the past decade is thought to be due to a series of changes in clinical practice and patient behaviour resulting in part from the introduction of 4 hour waiting targets. These effects have been spread over a number of years but are not expected to continue indefinitely.
    - Recent data on emergency admissions (see Indicator 3a) shows a significant fall in 2011/12 after increasing for a decade. This is expected to be mirrored in emergency readmission figures, supporting a flat projection.

    - Although an ageing and increasingly frail population provides upward pressure on readmission rates, the final NHS Outcomes Framework indicator will be standardised to take this into account. The simple standardisation procedure currently used means that the trends observed here may differ from those seen in the final indicator. As such, this work should serve as a demonstration of the methodology behind the final projection rather than as a source of absolute values.
    - There is still considerable uncertainty over what is driving this outcome. Without conclusive evidence that these trends will continue, it is sensible to hold the NHS to the highest standard possible.

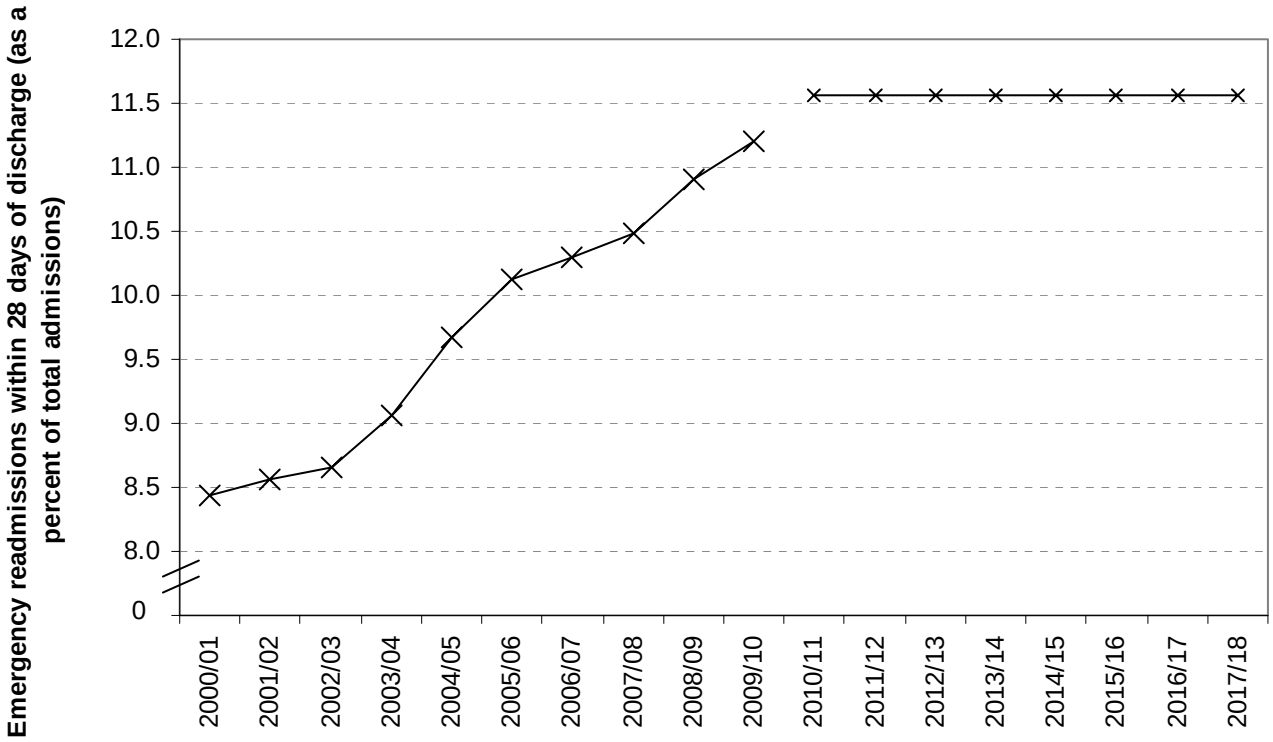
- Further work will be done during the consultation period to establish the impact of different drivers and the projection will be reviewed in that light. This projection will be updated once the data on the actual indicator is published, which may lead to substantial revisions.

Table 3b.j – Current Practice Projection for emergency readmissions within 28 days of discharge, as a percentage of total admissions

	Actual	Predicted
2000/01	8.43	
2001/02	8.57	
2002/03	8.66	
2003/04	9.06	
2004/05	9.67	
2005/06	10.12	
2006/07	10.29	
2007/08	10.48	
2008/09	10.91	
2009/10	11.21	
2010/11		11.57
2011/12		11.57
2012/13		11.57
2013/14		11.57
2014/15		11.57
2015/16		11.57
2016/17		11.57
2017/18		11.57

Source: NHS Information Centre, DH

Figure 3b.j – Current Practice Projection for emergency readmissions within 28 days of discharge, as a percentage of total admissions



Source: NHS Information Centre

(c) Indicator 3b: Scope for Improvement

5.70. The Department of Health introduced a policy of non-payment for some emergency readmissions from 1st April 2011. This has since evolved based on feedback from national implementation as well as specific pilot schemes. The savings made by commissioners from this policy will be reinvested into post-discharge care, thereby reducing emergency readmissions. This policy will also act to incentivise providers to lower readmission rates directly.

5.71. Due to the complex driving forces behind emergency readmissions, it is not clear how great an effect this policy will have. Although similar non-payment schemes have been used in other countries, notably the USA, these have only recently been introduced and so their effects are unclear. In section 3 below initial quantitative estimates of the potential scope for improvement in the indicator are provided.

3.1 – Patient Reported Outcome Measures (PROMs) for elective procedures

Outcome sought	**Effective recovery following elective procedures.**
Updated definition	This indicator reports the casemix adjusted average health gain for hip replacement, knee replacement, groin hernia and varicose vein surgery. The health gain is the difference between the scores before and 3 to 6 months after the operation as measured by the EQ-5D, where 1 = full health, 0 = status equivalent to dead.

(a) Indicator 3.1: Recent Trends and Explanations

5.72. The average reported health gains for knee replacement and groin hernia surgery increased from 2009/10 to 2010/11, whilst gains from hip replacement and varicose vein treatment decreased slightly.

Overview

5.73. There is considerable variation in reported health gains across the four different procedures. Hip replacement offers the greatest improvement, with average gains being 5 times larger than for groin hernia treatment. However, direct comparisons across these procedures do not provide information on their relative importance. These data are reported together for presentational reasons, but each procedure is a separate indicator and should be considered as such.

5.74. It is important to note that although these scores show the change in health status after an operation, they do not consider what an individual's health status would have been without the operation. As conditions generally get worse when left untreated, the recorded gain will actually underestimate the true benefit of the operation.

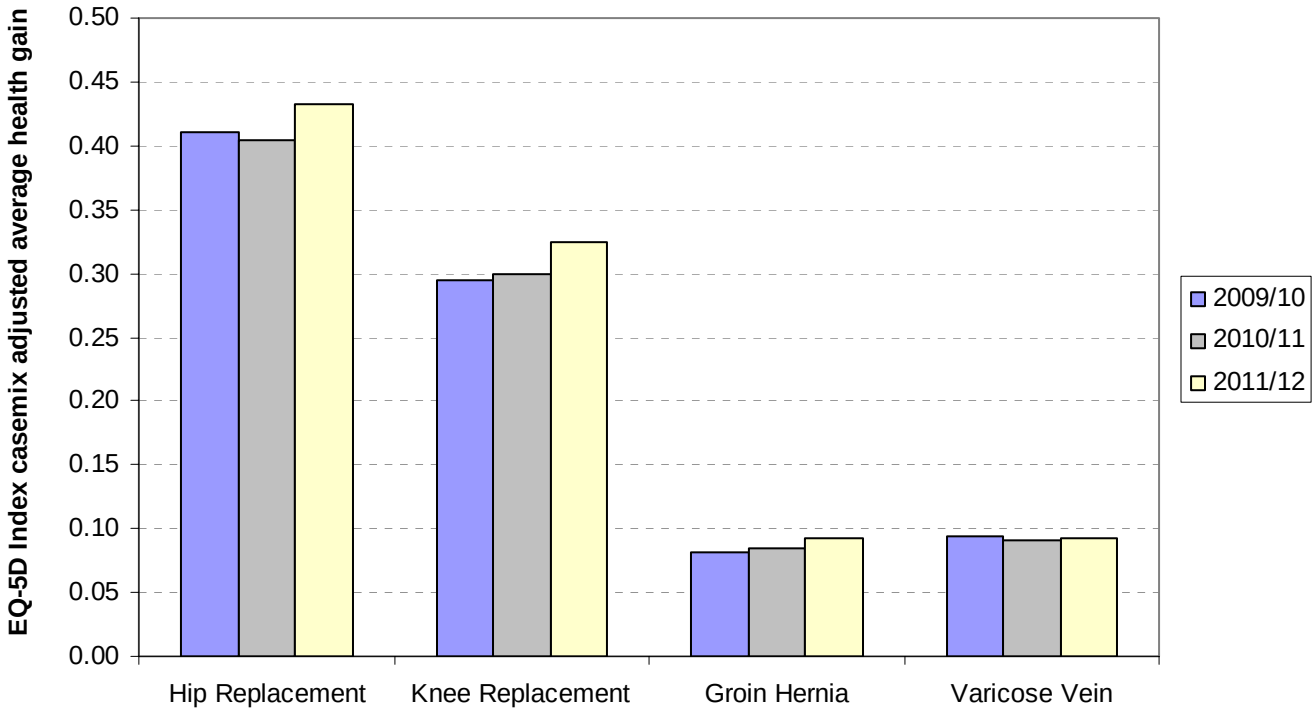
Table 3.1.a EQ-5D Index case-mix adjusted average pre and post operative health scores

		2009/10	2010/11*	2011/12*
3.1.i Hip Replacement	Average Pre-op Score	0.348	0.358	0.345
	Average Adjusted Post-op Score	0.759	0.763	0.768
	Average Health Gain	0.411	0.405	0.423
3.1.ii Knee Replacement	Average Pre-op Score	0.403	0.407	0.394
	Average Adjusted Post-op Score	0.698	0.706	0.707
	Average Health Gain	0.294	0.299	0.313
3.1.iii Groin Hernia	Average Pre-op Score	0.793	0.789	0.785
	Average Adjusted Post-op Score	0.875	0.874	0.874
	Average Health Gain	0.082	0.085	0.089
3.1.iv Varicose Vein	Average Pre-op Score	0.772	0.765	0.755
	Average Adjusted Post-op Score	0.866	0.856	0.849
	Average Health Gain	0.094	0.091	0.094

Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre.

*Data for 2010/11 and 2011/12 are currently provisional, and so will not be analysed in the following breakdowns. 2011/12 figures cover the 9 months from 1st April to 31st December 2011.

Figure 3.1.a EQ-5D Index case-mix adjusted average health gain, by procedure



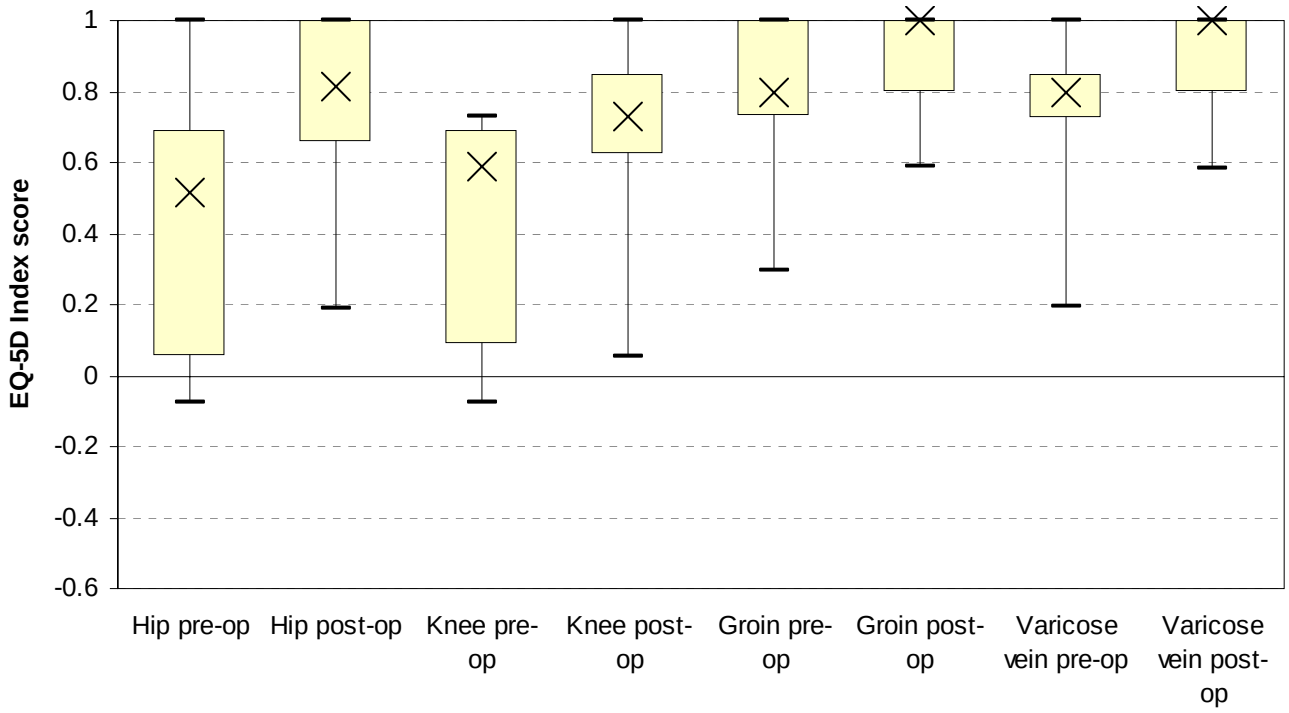
Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

5.75. In 2009/10, 87.3% of hip replacement patients reported a gain in EQ-5D status, compared to 77.7% of knee replacement, 52.7% of varicose vein and 50.2% of groin hernia patients.

5.76. There are noticeable differences in the distributions of pre and post-operative scores across the four procedures. Preoperative scores for varicose vein and groin hernia patients are significantly higher than for knee and hip replacement patients, although there is more variation amongst the latter group.

Figure 3.1.b EQ-5D Index pre and post operative (raw) scores[1]

Upper and lower bars mark the 95th and 5th percentiles, boxes mark interquartile range and crosses identify the median.



Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Hip Replacement

5.77. The EQ-5D index casemix adjusted average health gain for 2009/10 was 0.411. Provisional data for 2010/11 indicates an average adjusted health gain of 0.405, a fall of 1.5% on the previous year.

Breakdown by SHA

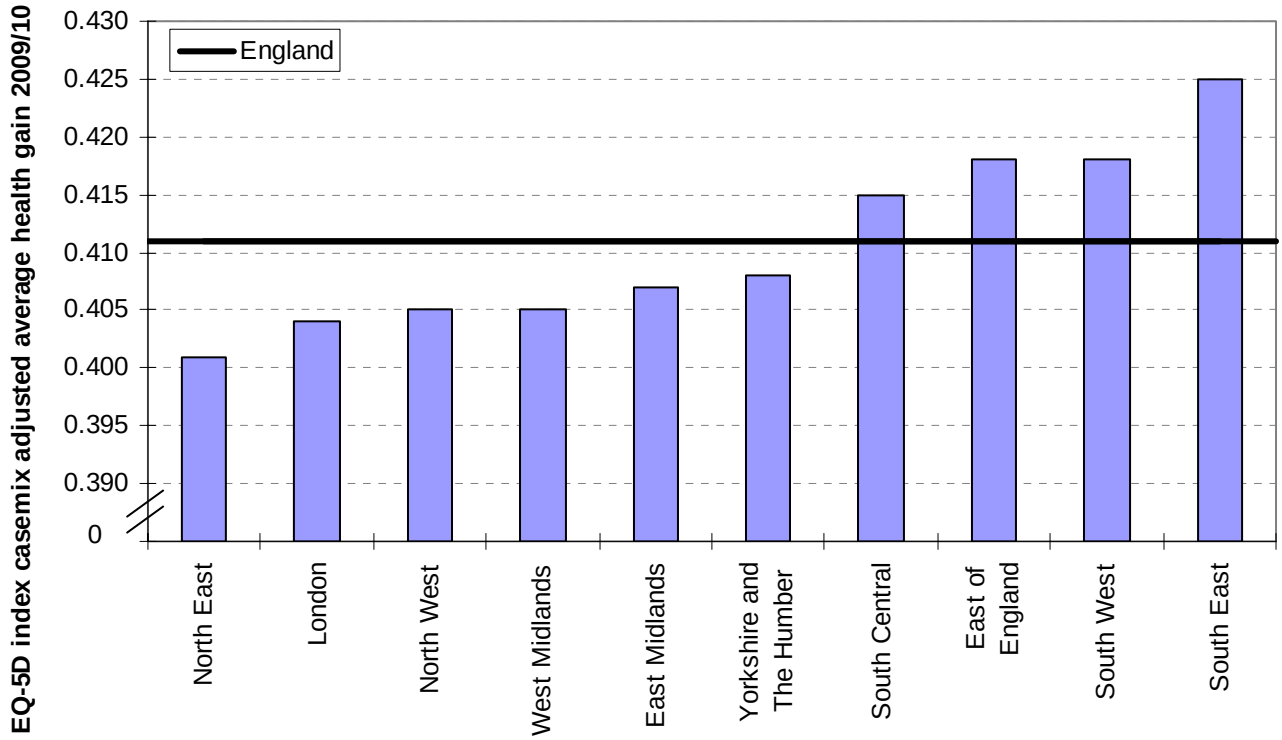
5.78. Regional breakdowns often highlight differences caused by deprivation, but as these data are fully case-mix adjusted, socio-economic status has already been taken into account. These figures therefore allow us to make a more direct comparison across strategic health authorities. The area with the highest gains, the South East, reported average gains 6.0% higher than the region with the lowest, the North East.

Table 3.1.b EQ-5D index casemix adjusted average health gain from hip replacement by SHA 2009/10

Strategic Healthcare Authority	EQ-5D Index casemix adjusted average health gain 2009/10
North East	0.401
London	0.404
North West	0.405
West Midlands	0.405
East Midlands	0.407
Yorkshire and The Humber	0.408
South Central	0.415
East of England	0.418
South West	0.418
South East	0.425

Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Fig. 3.1.c EQ-5D index casemix adjusted average health gain from hip replacement by SHA 2009/10



Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Knee Replacement

5.79. The EQ-5D index casemix adjusted average health gain for 2009/10 was 0.294. Provisional data for 2010/11 indicates an average adjusted health gain of 0.299, an increase of 1.7% on the previous year.

Breakdown by SHA

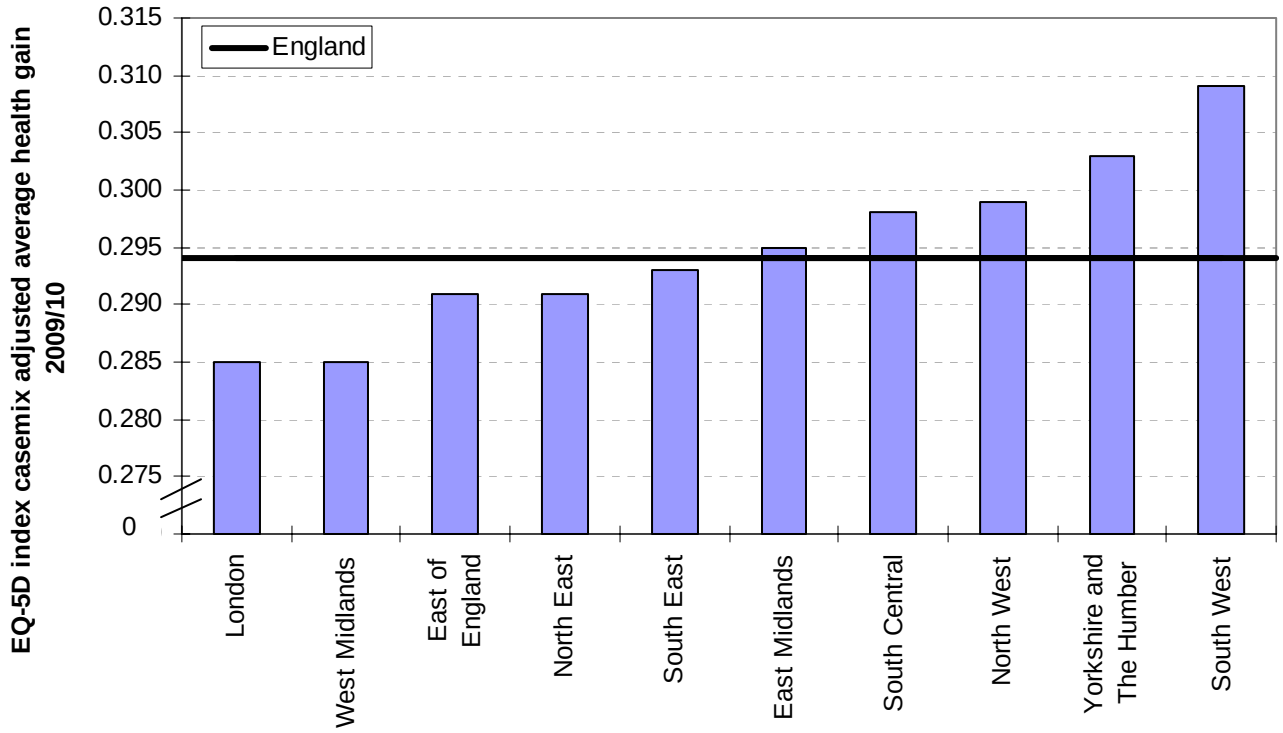
5.80. The area with the highest gains, the South West, reported average gains 8.4% higher than the region with the lowest, London.

Table 3.1.c EQ-5D index casemix adjusted average health gain from knee replacement by SHA 2009/10

Strategic Healthcare Authority	EQ-5D Index casemix adjusted average health gain 2009/10
North East	0.401
London	0.404
North West	0.405
West Midlands	0.405
East Midlands	0.407
Yorkshire and The Humber	0.408
South Central	0.415
East of England	0.418
South West	0.418
South East	0.425

Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Fig. 3.1.d EQ-5D index casemix adjusted average health gain from knee replacement by SHA 2009/10



Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Groin hernia

5.81. The EQ-5D index casemix adjusted average health gain for 2009/10 was 0.082. Provisional data for 2010/11 indicates an average adjusted health gain of 0.085, an increase of 3.7% on the previous year.

Breakdown by SHA

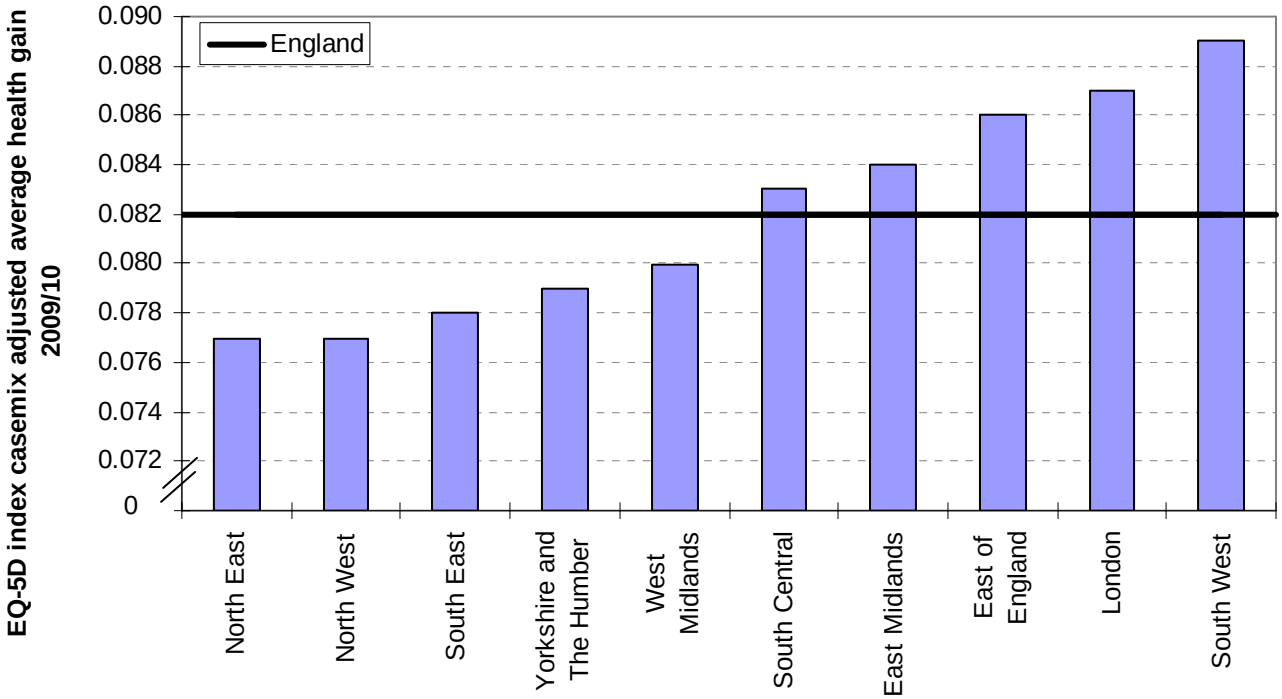
5.82. The area with the highest gains, the South West, reporting average gains 15.6% higher than the region with the lowest, the North East.

Table 3.1.d EQ-5D index casemix adjusted average health gain from groin hernia surgery by SHA 2009/10

Strategic Healthcare Authority	EQ-5D Index casemix adjusted average health gain 2009/10
North East	0.077
North West	0.077
South East	0.078
Yorkshire and The Humber	0.079
West Midlands	0.080
South Central	0.083
East Midlands	0.084
East of England	0.086
London	0.087
South West	0.089

Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Fig. 3.1.e EQ-5D index casemix adjusted average health gain from groin hernia surgery by region 2009/10



Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Varicose vein

5.83. The EQ-5D index casemix adjusted average health gain for 2009/10 was 0.094. Provisional data for 2010/11 indicates an average adjusted health gain of 0.091, a fall of 3.2% on the previous year.

Breakdown by SHA

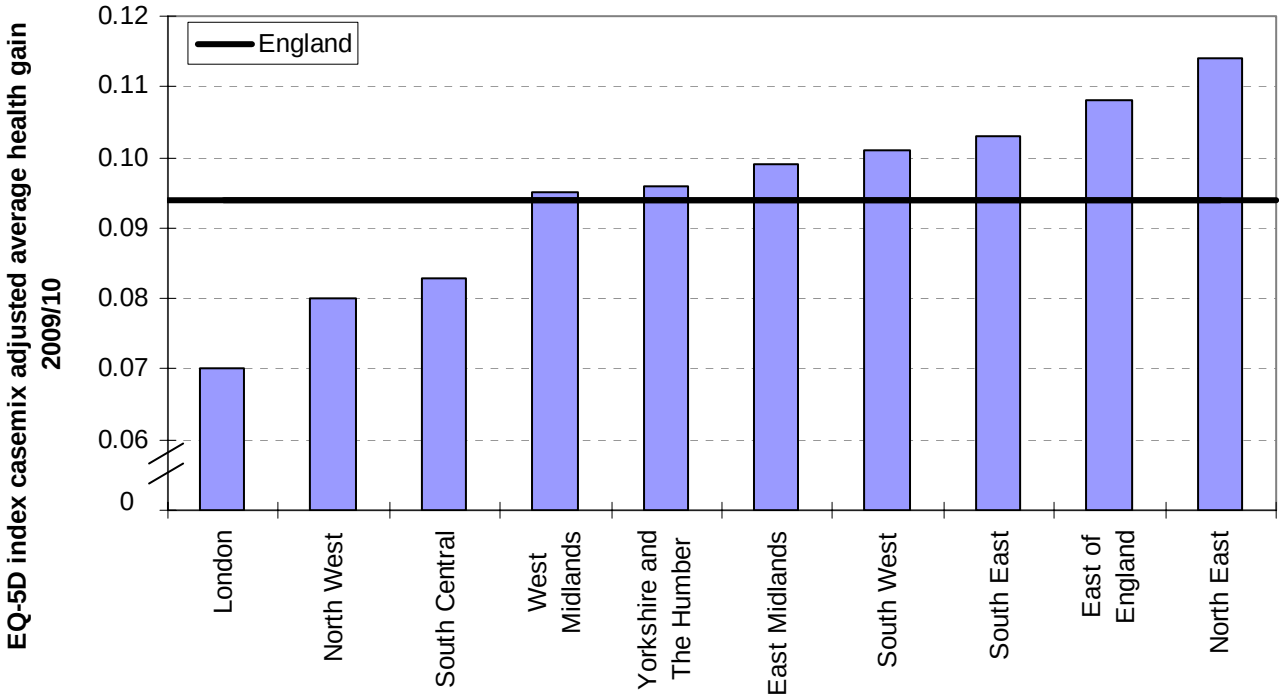
5.84. The area with the highest gains, the North East, reported average gains 62.9% higher than the region with the lowest, London.

Table 3.1.e EQ-5D index casemix adjusted average health gain from varicose vein surgery by SHA 2009/10

Strategic Healthcare Authority	EQ-5D Index casemix adjusted average health gain 2009/10
London	0.070
North West	0.080
South Central	0.083
West Midlands	0.095
Yorkshire and The Humber	0.096
East Midlands	0.099
South West	0.101
South East	0.103
East of England	0.108
North East	0.114

Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

Fig. 3.1.f EQ-5D index casemix adjusted average health gain from varicose vein surgery by region 2009/10



Source: Hospital Episode Statistics (HES) / PROMs, NHS Information Centre

International comparison

5.85. England is leading the field in the collection and publication of pre- and post-operative procedure data in the NHS. There have been PROMs trials in Canada, Germany, Slovenia, Sweden and Scotland (this was subsequently dropped). Limited data are available for comparison, but a 2010 Swedish study[13] found a mean improvement of 0.37 in EQ-5D score one year after hip replacement surgery. This compares to a mean improvement of 0.411 six months after treatment in England. No comparisons are available for knee replacement, groin hernia or varicose vein treatment.

Notes:

- What is driving the regional variation in outcomes?

Drivers of this indicator

5.86. The postoperative score are casemix adjusted[11] to take account of numerous factors, including co-morbidities, deprivation and the pre-operative health of patients. Although the variables included for casemix adjustment differ slightly across the four procedures, many are common to all.

5.87. A literature review identified the following as factors that affect measures of post-operative wellbeing. Of these, tobacco use, lack of physical activity, obesity, alcohol consumption, illicit drug use and nutrition are not included in the case-mix adjustment.

Driver	Impact
Tobacco use	There is strong evidence linking smoking, especially current smoking, with increased elective surgery post-operative complications, such as surgical site infections and pneumonia[2].
Prevalence of co-morbidities	There is strong evidence linking co-morbidities with increased elective surgery post-operative complications[3].
Diabetes	There is strong evidence linking type 1 & 2 DM, especially if poorly controlled, with increased elective surgery post-operative complications[4].
Lack of physical activity	There is reasonable evidence that physical activity, both before and after surgery, has an effect on post-operative outcomes[5].
Obesity	There is conflicting evidence linking obesity with increased post-operative complications. Most studies point towards there being an increased risk, but some find no difference[6].
Alcohol consumption	There is reasonable evidence supporting the detrimental effect of alcohol on outcomes, although some studies have failed to find a statistically significant effect[7].
Illicit drug use	There is reasonable evidence supporting an adverse link with illicit drug usage[8].
Quality of care whilst living at home or in residential care	There is reasonable evidence for the link[9].
Socio-economic status	There is reasonable evidence that socio-economic status is correlated with pre-operative scores, and limited evidence that it affects case-mix adjustment[10].
Nutrition	There is reasonable evidence that good nutrition (pre and post-operative) has a positive effect on outcomes[11].

References

1. Based on the 29,646 hip replacement, 32,303 knee replacement, 19,463 groin hernia and 7,943 varicose vein patients with HES linked fully completed questionnaires, as found at: http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=1650

2. Smoking as a risk factor for short-term outcomes following primary total hip and total knee replacement in veterans - Arthritis Care & Research Volume 63, Issue 10, pages 1365–1374, October 2011

3. Risk factors associated with acute hip prosthetic joint infections and outcome of treatment with a rifampin based regime 2007, Vol. 78, No. 6, Pages 755-765

4. Patient quality of life during the 12 months following joint replacement surgery - Arthritis Care & Research Volume 51, Issue 1, pages 100–109, 15 February 2004.

5. Physical Activity After Total Joint Replacement: A Cross-Sectional Survey - Clinical Journal of Sport Medicine: March 2007 - Volume 17 - Issue 2 - pp 104-108

6. The Lancet, Obesity in general elective surgery - Volume 361, Issue 9374, Pages 2032 - 2035, 14 June 2003

7. Patient-related risk factors for early revision of total hip replacements: A population register-based case-control study of 674 revised hips

8. Predictors of Intensive Care Unit Admission After Total Joint Arthroplasty - The Journal of Arthroplasty Available online 15 November 2011

9. Risk Factors for Prolonged Length of Stay After Major Elective Surgery Ann Surg. 1999 August; 230(2): 251.

10. Is there an association between deprivation and pre-operative disease severity? A cross-sectional study of patient-reported health status - Int J Qual Health Care (2009) 21(5): 311-315.

11. Preoperative Nutritional Status and Outcome of Elective Total Hip Replacement Clinical Orthopaedics & Related Research: May 1996 - Volume 326 - Issue - pp 153-161

12. Patient Reported Outcome Measures (PROMs) in England: The case-mix adjustment methodology, Department of Health, April 2012

13. Evaluation of health-related quality of life using EQ-5D in Takamatsu, Japan, Environ Health Prev Med. 2011 January; 16(1): 25–35.

14. Patient Reported Outcomes Measures and Health-economic Aspects of Total Hip Arthroplasty, O. Rolfson, 2010

Healthcare contribution

5.88. After adjusting for the casemix the remaining change in health status should be attributable to the effects from the interventions and appropriate care following discharge for these conditions.

Sources of bias

5.89. It is possible that reported gains could be affected by macroeconomic trends. For example, unemployment has been shown to have a significant effect on reported EQ-5D scores in other countries[12]. As these data are new, it is not yet possible to know to what extent the reported scores are affected by more general trends.

5.90. As returning PROMs forms is voluntary, not all patients who undergo these procedures will be accounted for in the data. If a subgroup of patients with a certain characteristic is more likely to respond than other groups, the results will be subject to response bias. However, if these groups are defined by features such as socioeconomic status, this bias will be negated by the casemix adjustment.

(b) Indicator 3.1: Current Practice Projections

5.91. A flat projection at 2009/10 levels will be used for this indicator. This means that the predicted average adjusted health gain is 0.411 for hip replacement, 0.294 for knee replacement, 0.082 for groin hernia surgery and 0.094 for varicose vein treatment. With fully case-mix adjusted data, any significant fluctuation in outcomes should be due to the NHS' contribution, so a flat projection is an accurate reflection of quality maintaining practice.

5.92. For varicose vein and groin hernia treatment, median post operative scores are already at their maximum possible value (1). In a considerable minority of cases (26.1% for groin hernia and 20.3% for varicose veins), patients actually recorded a full health score pre-operatively, obviously preventing the NHS from providing any gains measurable under this indicator. This limits scope for measurable improvement, and also supports a flat projection.

(c) Indicator 3.1: Scope for Improvement

5.93. The publication of PROMs data is expected to stimulate analysis and research, leading to more effective treatment in the future. Together with the recently created Best Practice Tariffs for hip and knee replacement, they are expected to drive reductions in regional variation, as are Incentivised Day Case tariffs for inguinal hernia repair. Results published at organisational level should help practices to identify scope for improvement, and take appropriate action to achieve this. As an example of one improvement exercise, DH is working with the British Orthopaedic Association (BOA) to develop appropriate ways of using the information to deliver quality improvements for the Orthopaedics data.

5.94. As outcomes are case-mix adjusted, regional variation should only be capturing the effect of healthcare interventions. By rolling out best practice nationally, we can reasonably expect this variation to diminish. The proposed scope for improvement in this indicator is equivalent to increasing the health gain for commissioners in the lowest quartile to the level currently achieved by the PCT at the 25th percentile. The calculations are explained further in the aggregated scope for improvement section below.

3.2 – Emergency Admissions for Children with Lower Respiratory Tract Infections

Outcome sought	**Preventing lower respiratory tract infections in children from becoming more serious.**
Indicator definition	Proportion of children aged up to 19 years of age admitted to hospital as an emergency admission for selected types of lower respiratory tract infections (bronchiolitis, bronchopneumonia and pneumonia). The indicator will be standardised by age and sex. However, these data are not currently available and non-standardised data have been used instead for the purposes of this template.

(a) Indicator 3.2: Recent Trends and Explanations

5.95. The rate of emergency admissions for children with lower respiratory tract infections (LRTIs) in 2010/11 was 374.9 admissions per 100,000 population, an 8.3% increase from 346.0 admissions per 100,000 population in 2009/10 – see Table 3.2.a and Figure 3.2.a. From 2003/04 to 2010/11 the annual rate of emergency admissions for children with lower respiratory tract infections has increased on average 4.6% in each year.

5.96. The increase in admissions cannot be explained by birth rates in England over the same period, as the number of live births increased 1.9% on average each year from 2003 to 2010 (and the number of live births per 100,000 population increased 1.4% on average)[1]. It also cannot be explained by an increase in incidence as there is some evidence that, on the contrary, the incidence for LRTIs has decreased since 1999 for children aged under 15 years, with a steeper decreasing trend for children aged under 1 year[2].

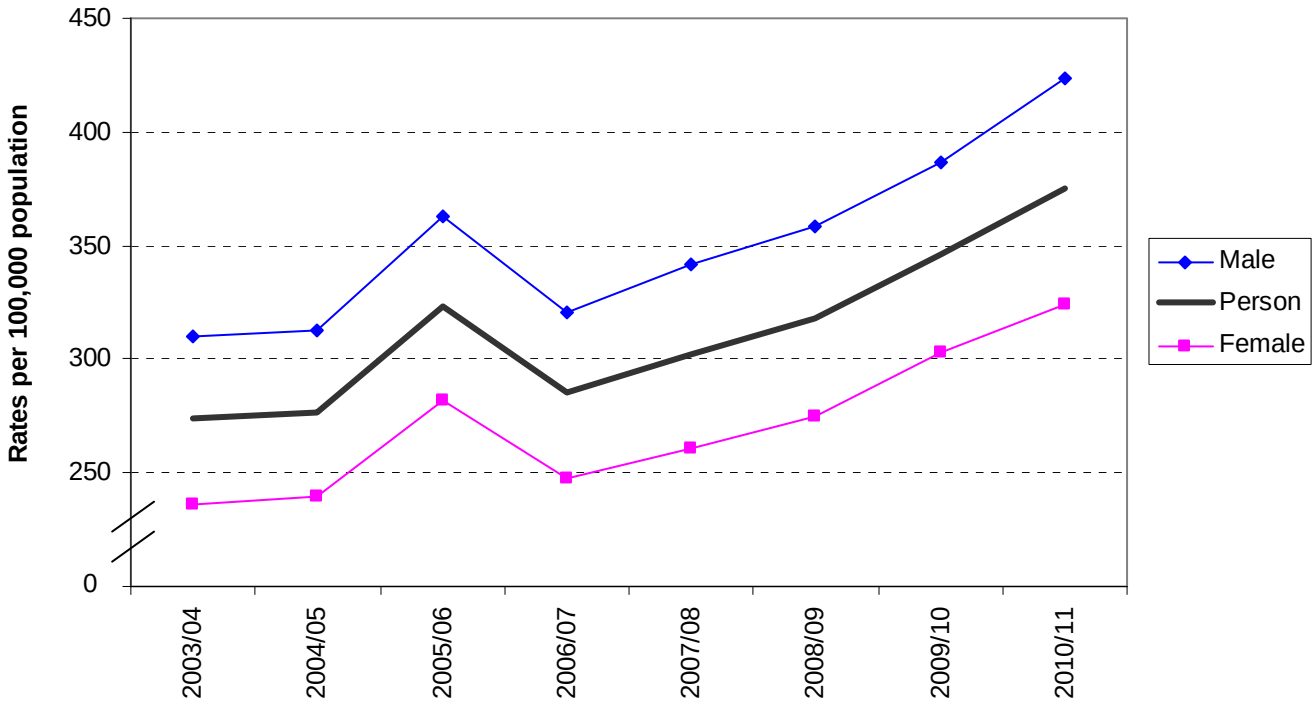
5.97. The gender-specific rate of emergency admissions for male patients was consistently higher than for female patients over the period – consistently around 30% higher than for female patients. Admissions for both male and female patients increased from 2009/10 to 2010/11: an increase of 9.4% for male patients from 387.1 to 423.5 emergency admissions per 100,000 population, and an increase of 6.9% for female patients from 303.0 to 323.8 admissions per 100,000 population – see Table 3.2.a and Figure 3.2.a.

Table 3.2.a Emergency admissions for children with LRTIs per 100,000 population (annual figures)

Year	Males	Females	Persons
2003/04	309.9	235.8	273.8
2004/05	312.7	239.2	276.9
2005/06	362.9	281.9	323.4
2006/07	320.3	247.9	285
2007/08	342.1	260.4	302.3
2008/09	358.5	275.2	317.9
2009/10	387.1	303	346
2010/11	423.5	323.8	374.9
Average annual change 2009/10 to 2010/11	9.40%	6.90%	8.30%
Average annual change 2003/04 to 2010/11	4.60%	4.60%	4.60%

Source: NHS Information Centre for Health and Social Care Indicator Portal

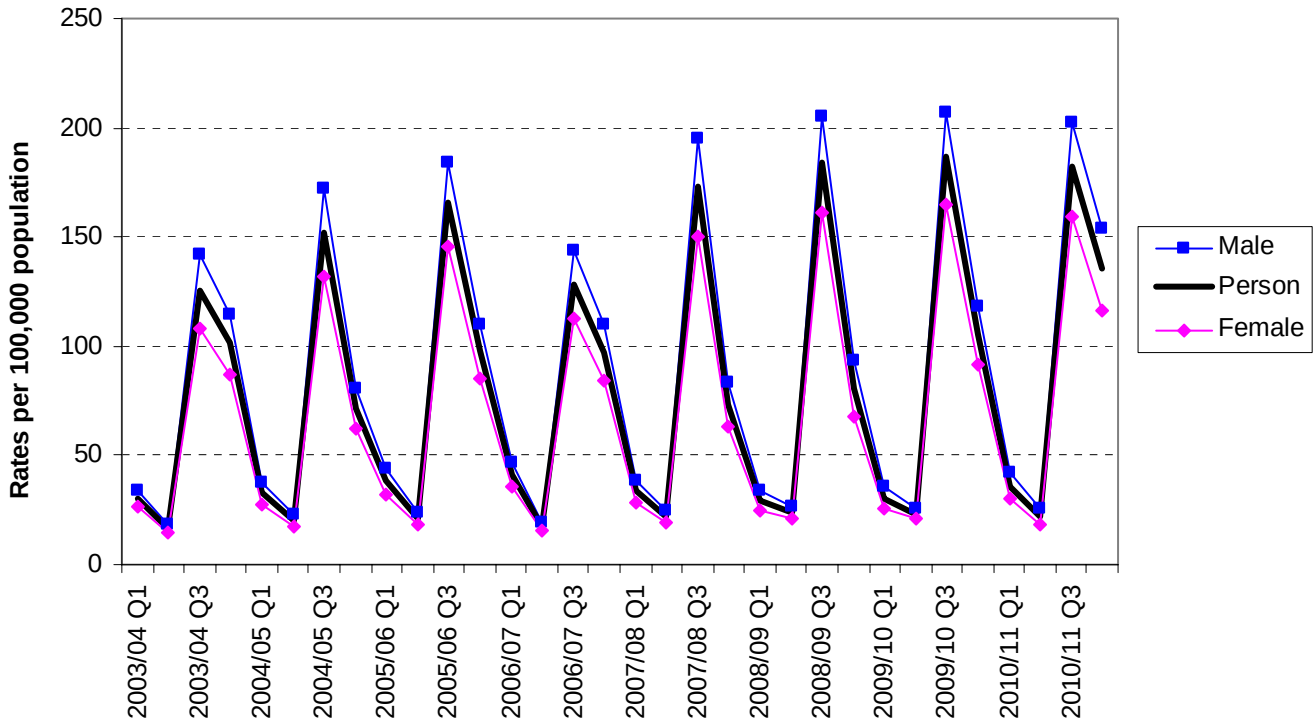
Figure 3.2.a Emergency admissions for children with LRTIs per 100,000 population (annual figures)



Source: NHS Information Centre for Health and Social Care Indicator Portal

5.98. This is a highly seasonal time series and the quarterly data shows a peak in admissions every autumn (Quarter 3) and, in a lesser degree, every winter (Quarter 4) for both male and female patients. Emergency admissions for children with LRTIs are, on average, eight times higher in the autumn than in the summer. The lowest number of admissions occurs in the summer (Quarter 2), followed by a low number of admissions in the spring (Quarter 1) – see Figure 3.2.b. Across the period, the summer quarter of 2003/04 showed the lowest number of admissions (14.5 per 100,000 population for females, 18.5 per 100,000 population for males and 16.6 per 100,000 population for all persons), whilst the autumn quarter of 2009/10 showed the highest number of admissions (165.2 per 100,000 population for females, 207.4 per 100,000 population for males and 186.8 per 100,000 population for all persons).

Figure 3.2.b Emergency admissions for children with LRTIs per 100,000 population



Source: NHS Information Centre Indicator Portal

Breakdown by diagnosis

5.99. Variation in the indicator seems to be mainly driven by the rate of emergency admissions for children with acute bronchiolitis, which accounted for around 67.1% of these admissions in 2010/11 – 251.2 admissions per 100,000 population in 2010/11, and an average increase of 5.8% each year from 2003/04 to 2010/11 (see Table 3.2.b and Figure 3.2.c).

5.100. Bronchiolitis occurs in association with viral infections (respiratory syncytial virus (RSV) in around 75% of cases). It is seasonal, with peak prevalence in the winter months (November to March) when such viruses are widespread in the community, which explains the peak in admissions in the autumn and winter quarters[3].

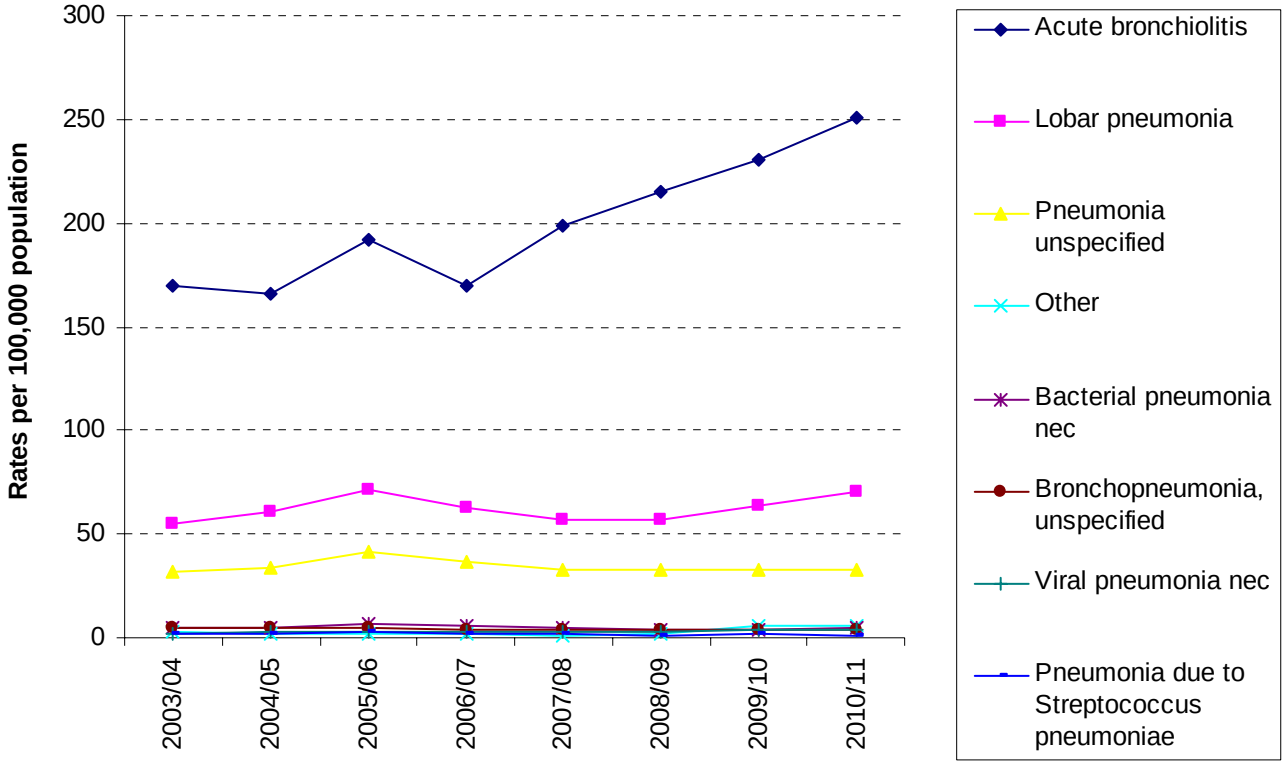
5.101. The rate of admissions for acute bronchiolitis has increased over the period. It might be attributable to an increase in incidence, for which we have not found readily accessible data, and changes in hospital admission criteria. A SIGN guideline for bronchiolitis was published in November 2006 and recommended that children showing low oxygen saturation as measured by pulse oxymetry should be admitted to in-patient care. This might partially explain the rise in admission rates from 2007/08 onwards. Some studies have suggested that the increased use of pulse oximetry contributes to the increase in bronchiolitis hospitalisation rates[4].

Table 3.2.b Emergency admissions for children with LRTIs per 100,000 population by primary diagnosis (annual figures)

	Acute bronc.	Bact. Pneum	Bronch. unspec	Lobar pneum.	Viral pneum.	Pneum due to Strept. Pneum	Pneum Unspec	Other
2003/04	169.7	4.7	4.9	55.1	2.4	1.7	32	3
2004/05	165.8	5.2	4.7	60.7	2.8	2.3	33.6	1.8
2005/06	192	6.8	5	71.3	2.8	2.6	41.5	1.7
2006/07	169.3	5.6	4.2	63	2.7	2.2	36.3	1.6
2007/08	199	4.5	3.5	56.6	3	1.7	32.7	1.2
2008/09	215	4	3.4	56.6	3.2	1.3	32.7	1.5
2009/10	230.3	4.3	3.5	63.7	4	1.6	32.5	5.9
2010/11	251.2	5.2	4.2	70.4	4.3	1.1	32.8	5.4
Average annual change 2003/04 to 2010/11	5.80%	1.50%	-2.20%	3.60%	8.70%	-6.00%	0.40%	8.80%

Legend:
Acute bronc. - Acute bronchiolitis
Bact. Pneum - Bacterial pneumonia nec
Bronch.. unspec. - Bronchopneumonia, unspecified
Lobar pneum. - Lobar pneumonia
Viral pneum. - Viral pneumonia nec
Pneum. due to Strept. Pneum - Pneumonia due to Streptococcus pneumoniae
PneumUnspec - Pneumonia unspecified
Average % change – Average annual percentage change each year from 2003/04 to 2010/11
Source: NHS Information Centre Indicator Portal

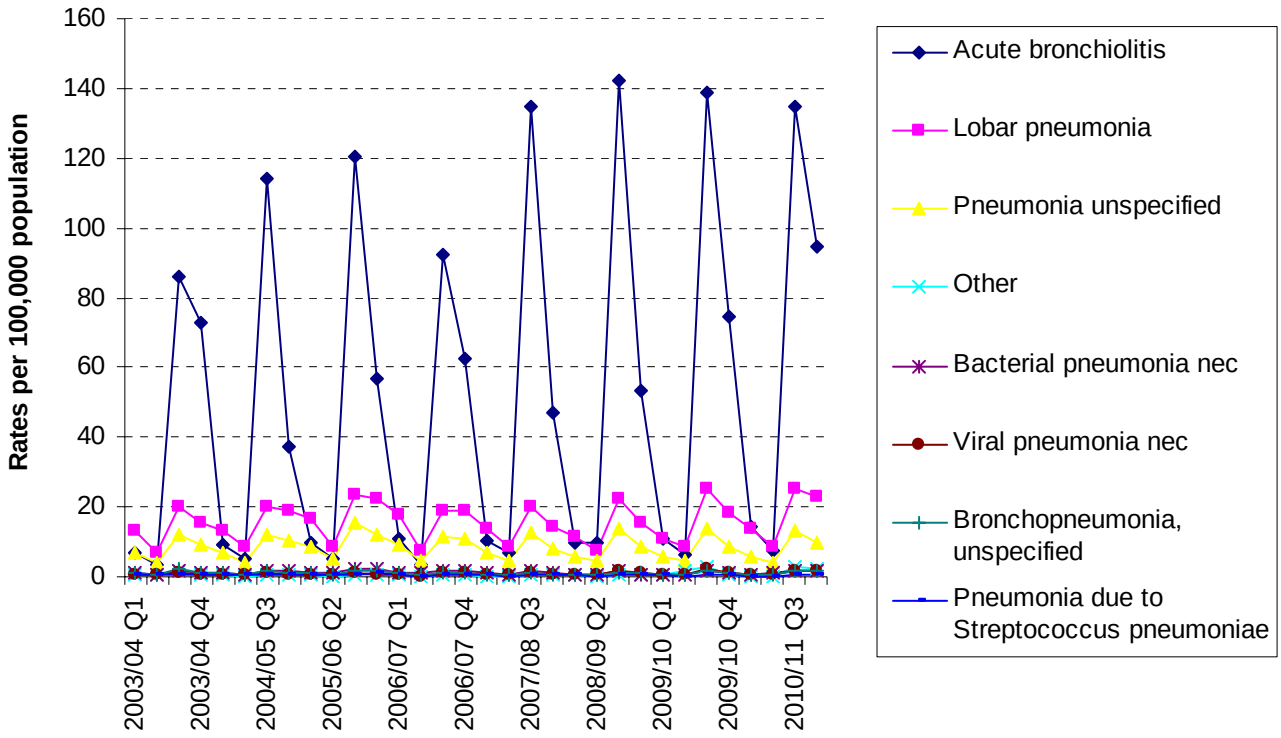
Figure 3.2.c Emergency admissions for children with LRTIs per 100,000 population by primary diagnosis (annual figures)



Source: NHS Information Centre Indicator Portal

5.102. The quarterly data by medical condition shows a peak in admissions every autumn and, to a lesser degree, winter, for acute bronchiolitis, lobal pneumonia and pneumonia unspecified – see graph Figure 3.2.d. Across the period, acute bronchiolitis showed the lowest number of admissions in the summer quarter of 2003/04 (i.e., Quarter 2) (3.3 per 100,000 population) and the highest number of admissions (142.2 per 100,000 population) in the autumn quarter of 2008/9 (i.e., Quarter 3).

Figure 3.2.d Emergency admissions for children with LRTIs per 100,000 population by primary diagnosis (quarterly admissions)



Source: NHS Information Centre Indicator Portal

Breakdown by age

5.103. Emergency admissions for LRTIs have increased for all ages, except for children aged 1 and 2 years. Children aged under 1 year show the highest rate of emergency admissions for LRTIs – see the age-specific admission rates for each year of age in Table 3.2.c and Figure 3.2.e. In 2010/11 there were 4,334 admissions per 100,000 population aged under 1 year, an average annual increase of 2.8.% since 2003/04.

5.104. The high number of admissions for children aged under 1 year is due to admissions for acute bronchiolitis, which is the main condition driving the number of admissions, and usually occurs in children aged below 2 years, but it is more prevalent in infants aged between two and three months old.

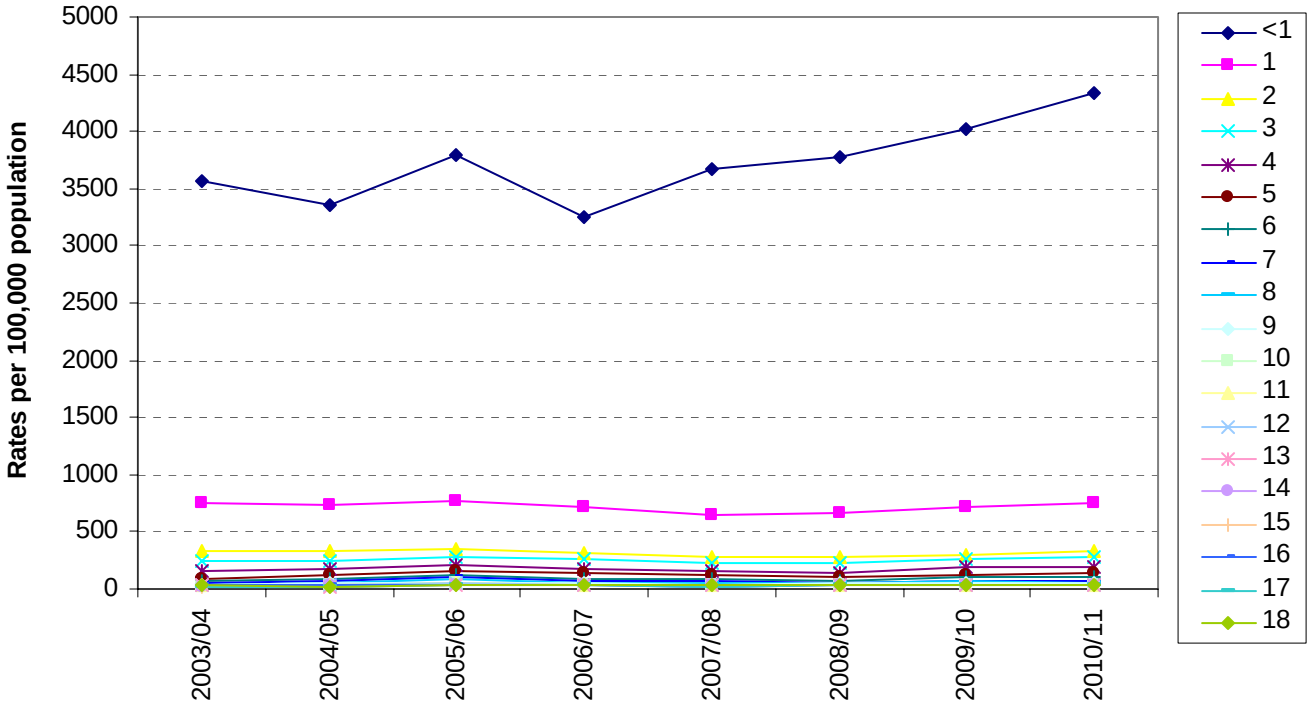
Table 3.2.c Age-specific rates of emergency admissions for children with LRTIs per 100,000 population (annual figures)

Age	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
0	3,573	3,356	3,787	3,259	3,669	3,778	4,028	4,334
1	760	739	768	720	638	658	709	746
2	341	326	358	320	279	285	305	340
3	238	253	282	257	228	229	254	271
4	150	167	202	183	159	148	187	192
5	92	123	159	136	121	109	129	141
6	64	94	119	90	94	78	104	100
7	48	63	108	74	70	57	69	71
8	38	56	80	59	51	50	64	61
9	33	46	60	48	41	44	52	58
10	23	36	57	40	32	37	43	43
11	27	31	48	41	33	32	41	42
12	28	31	44	38	32	28	37	36
13	27	25	42	31	31	28	34	32
14	23	30	41	28	28	32	31	30
15	24	28	35	35	30	29	33	28
16	28	27	37	28	23	31	28	29
17	25	24	33	30	26	29	29	39
18	29	26	34	31	27	33	36	43

Source: NHS Information Centre Indicator Portal

Note: Age-specific emergency admission rates are the proportion of emergency admissions in a specific age group.

Figure 3.2.e Age-specific rates of emergency admissions for children with LRTIs per 100,000 population (annual figures)



Source: NHS Information Centre Indicator Portal

Breakdown by deprivation

5.105. Less deprived areas (using the Index of Multiple Deprivation - IMD) show lower rates of emergency admissions for children with LRTIs than more deprived areas over the period 2003/04 to 2010/11 – see the area-specific admission rates in Table 3.2.e and Figure 3.2.g. This pattern is more visible looking at only one year of data – see 2010/11 rates by IMD areas in Figure 3.2.h. The gap between the most deprived and the least deprived areas has decreased slightly over the period, with the most deprived areas showing a slightly lower average increase in these admissions over the period than the other areas.

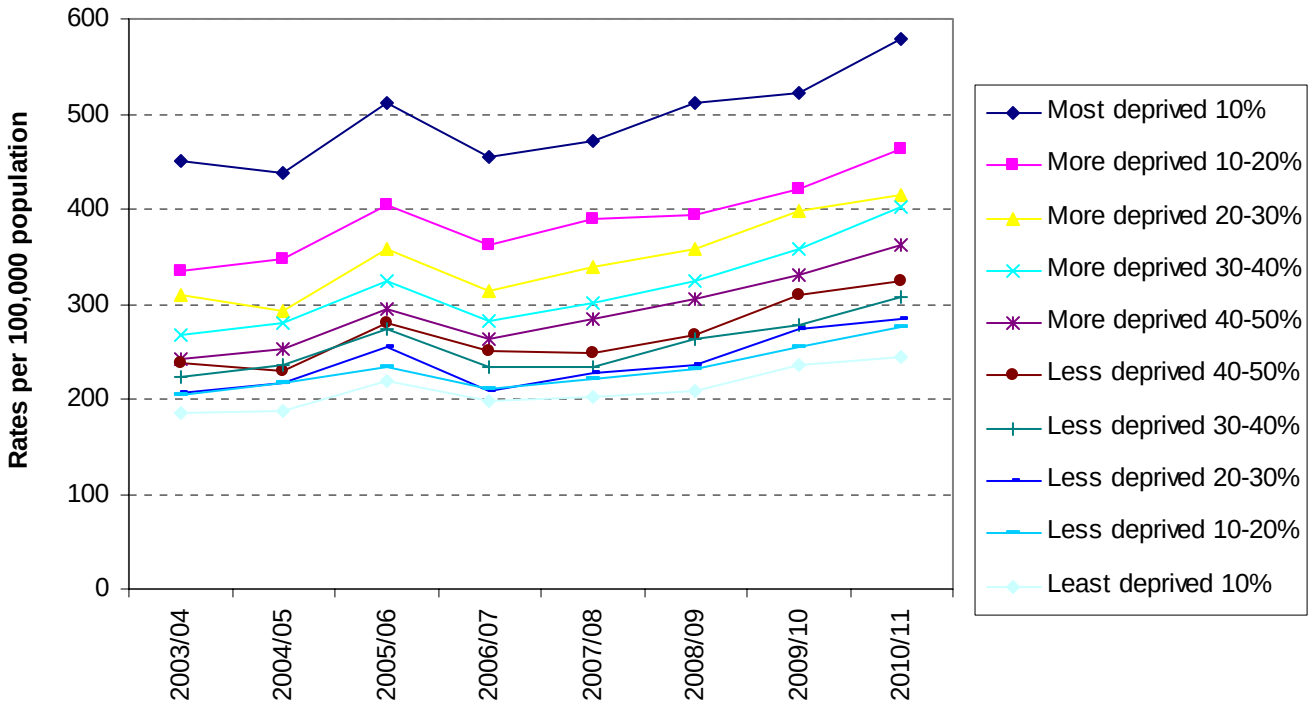
Table 3.2.e IMD-specific rates of emergency admissions for children with LRTIs per 100,000 population (annual figures)

Year	Most deprived 10%	More deprived 10-20%	More deprived 20-30%	More deprived 30-40%	More deprived 40-50%	Less deprived 40-50%	Less deprived 30-40%	Less deprived 20-30%	Less deprived 10-20%	Least deprived 10%	Percentage difference most and least deprived areas
2003/04	450.9	335	310.5	268.1	242.9	238.5	222.6	206.8	203.4	184.5	144%
2004/05	438.6	346.9	293.4	279.2	253.5	228.8	236.2	216.6	216.2	188.2	133%
2005/06	511.2	404.3	358.1	323.5	294.6	279.8	272.8	255.2	234	219.6	133%
2006/07	454.2	362.4	314.2	281.4	263.7	250.1	233.4	207.8	210.7	197.6	130%
2007/08	471.7	389.6	338.7	301.2	284.4	248.5	234.2	227.5	220.6	201.8	134%
2008/09	511.5	394.6	357.3	324.6	306.1	267.4	263.8	236.5	231	208.7	145%
2009/10	521.8	421.3	398.8	358.6	331.5	310.5	277.9	273.5	255.1	234.9	122%
2010/11	580	464.2	415.2	402.9	362.4	325.2	307	285	276	243.3	138%
Average annual change 2009/10 to 2010/11	11.20%	10.20%	4.10%	12.40%	9.30%	4.70%	10.50%	4.20%	8.20%	3.60%	
Average annual change 2003/04 to 2010/11	3.70%	4.80%	4.20%	6.00%	5.90%	4.50%	4.70%	4.70%	4.50%	4.00%	

Source: NHS Information Centre Indicator Portal

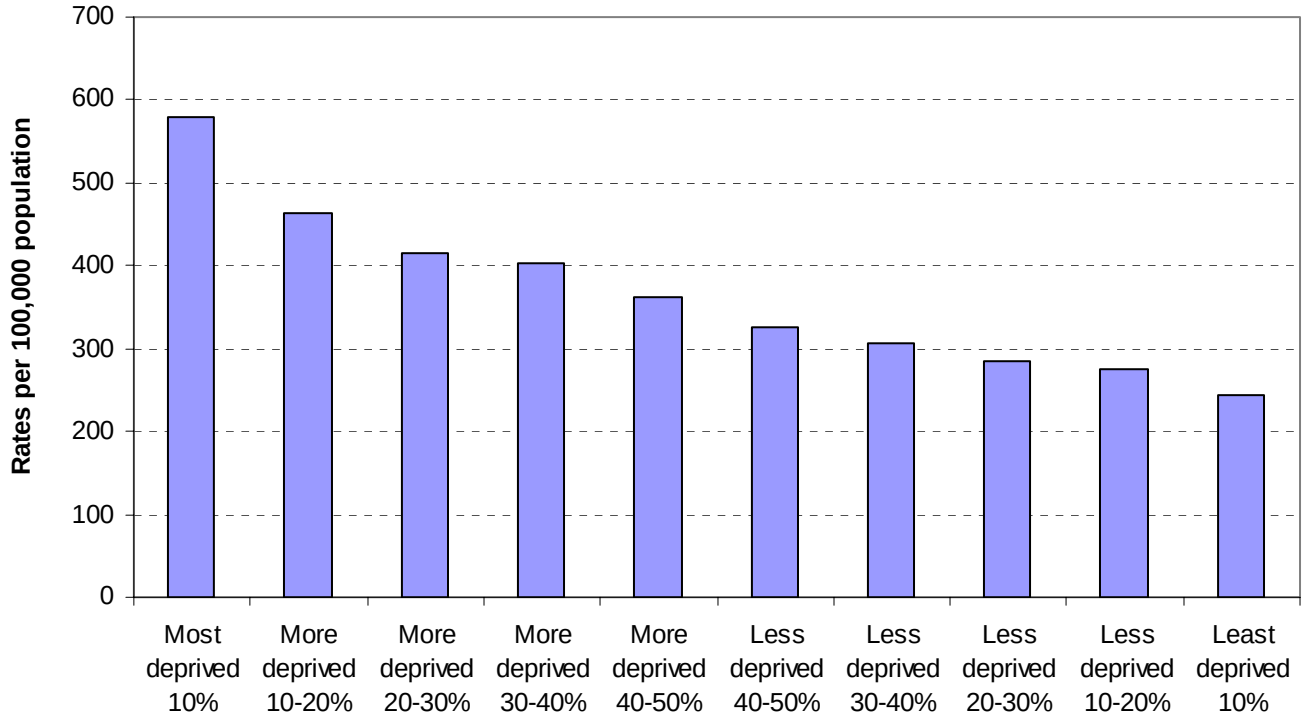
Note: IMD-specific rates of emergency admissions are the proportion of admissions in a specific IMD grouping.

Figure 3.2.g IMD-specific rates of emergency admissions for children with LRTIs per 100,000 population (annual figures)



Source: NHS Information Centre Indicator Portal

Figure 3.2.h 2010/11 IMD-specific rates of emergency admissions for children with LRTIs per 100,000 population



Source: NHS Information Centre Indicator Portal

Breakdown by strategic health authority (SHA)

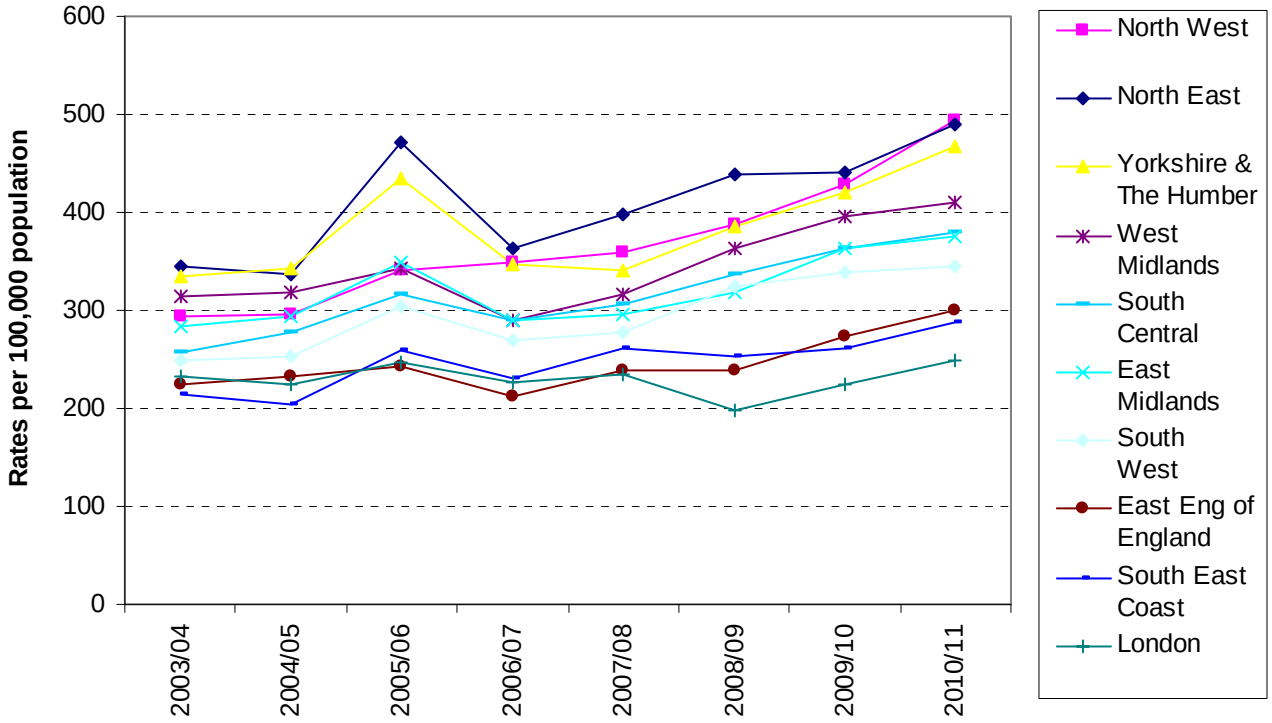
5.106. Emergency admissions for children with LRTIs are the highest within SHAs in the north of England – North East, Yorkshire and the Humber, North West – and the lowest for London, followed by East of England and the South East Coast – see Table 3.2.f and Figure 3.2.i. This pattern is more visible looking at only one year of data – see 2010/11 rates by SHA areas in Figure 3.2.j

Table 3.2.f SHA-specific rates of emergency admissions for children with LRTIs per 100,000 population (annual figures)

Year	North East	North West	Yorkshire & the Humber	East Midlands	West Midlands	East England	London	South East Coast	South Central	South West
2003/04	344.6	293.9	334.1	284.3	313.6	225.2	233.5	214.8	257.9	249.1
2004/05	336.9	296.7	343.7	293.5	318.9	232	225.5	204.1	277.9	252.1
2005/06	471.2	341.2	434.3	348.4	342.7	243.6	246.7	259.1	316.2	303.7
2006/07	363.5	348.9	346.3	290.6	290.7	212.3	226.3	230.9	289.1	269.3
2007/08	398.1	358.8	341.6	295	316.6	239.4	235	260.8	305.6	276.8
2008/09	439.7	388.2	386.3	318.2	363.2	239	198.9	252.6	336.8	325.5
2009/10	441.1	429	419.5	363	396.1	273.9	225.3	261.4	362.7	339.3
2010/11	489	493.3	467.7	374.9	410.3	300.6	249.7	287	380.4	345

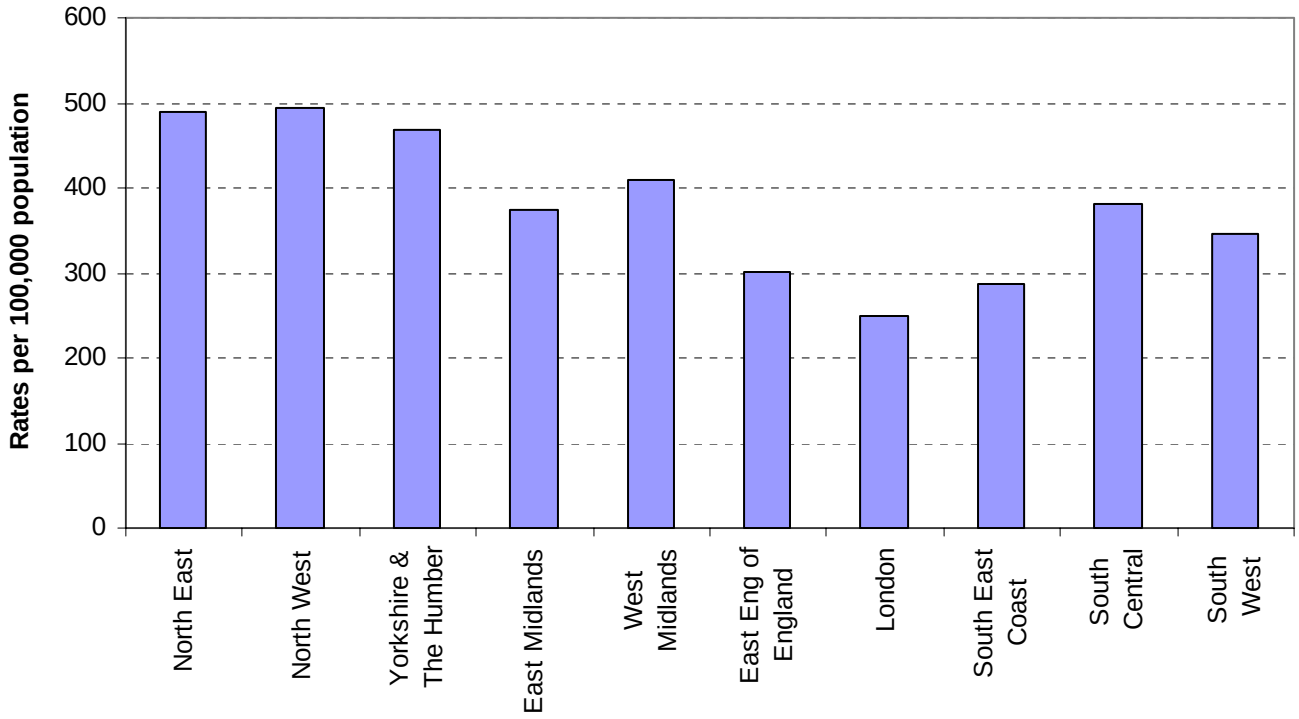
Source: NHS Information Centre Indicator Portal

Figure 3.2.i SHA-specific rates of emergency admissions for children with LRTIs per 100,000 population (annual figures)



Source: NHS Information Centre Indicator Portal

Figure 3.2.j 2010/11 SHA-specific rates of emergency admissions for children with LRTIs per 100,000 population



Source: NHS Information Centre Indicator Portal

International position

5.107. Not available.

Notes:

- Why have emergency admissions for children with acute bronchiolitis increased in recent years?
- Why have emergency admissions rates for LRTIs increased more for some ethnic groups than others?
- Why are emergency admissions for children with LRTIs correlated with deprivation?

Drivers of this indicator

5.108. Key drivers for the indicator, and external to the NHS, are: exposure to tobacco smoke, vaccinations, breastfeeding, the quality of social care in hospital and socioeconomic deprivation.

5.109. **Exposure to tobacco smoke** Parental smoking is associated with increased Respiratory Syncytial Virus related hospital admissions[6] (this virus is a major cause of lower respiratory tract infections in children). Maternal smoking during pregnancy has also been shown to be associated with increased hospitalisation of infants with any lower respiratory tract infection[7].

5.110. **Vaccinations.** The role vaccinations have in decreasing hospital admission depends on the underlying vaccine and which microbe is being targeted. Vaccination of high risk groups for Respiratory Syncytial Virus (children under the age of 2 with chronic lung disease or with severe immunodeficiency, children under the age of 6 months with left to right shunt haemodynamically significant congenital heart disease and/or pulmonary hypertension) are recommended to be vaccinated with palivizumab[8]. Furthermore, the introduction of the measles vaccination has decreased death from pneumonia significantly amongst children[9]. Hib conjugate vaccine has decreased the incidence of Haemophilus influenzae pneumonia[10].

5.111. **Breastfeeding.** There is some evidence that breastfeeding decreases the incidence of hospitalisation related to the Respiratory Syncytial Virus. This is especially true when breastfeeding is started early on in life and continues for more than 2 months[11].

5.112. **Quality of social care and early discharge from hospital.** In relation to the quality of social care and early discharge from hospital for children with lower respiratory tract infections, the specific evidence is limited. However, it is generally understood that optimal social care (in paediatrics and other areas of medicine) is associated with the ability to discharge earlier than previously. Furthermore, certain features must be put in place such as a ‘safety net’ with clear instructions to the parents on features to seek further medical advice about[12].

5.113. **Socioeconomic deprivation** .There is a small but clear link between deprivation and hospital admissions for children with bronchiolitis[13].

(b) Indicator 3.2: Current Practice Projections

5.114. From 2003/04 to 2010/11 the annual rate of emergency admissions for children with lower respiratory tract infections has increased by over a third, from 273.8 to 374.9 per 100,000 population (see section A.). Assuming that the use of pulse oximetry and the SIGN guideline is by now a routine procedure in hospital settings, emergency admissions would be likely to remain stable in the near future.

5.115. However, anecdotal evidence suggests that the use of pulse oximetry is becoming more popular in community care settings, namely in GP practices and by community nurses, and these changes in clinical practice might increase the number of referrals to hospital and the number of emergency admissions for children with LRTIs. Furthermore, the increase in survival in children with co-morbidities and complex medical needs, who are more susceptible to LRTIs, could also contribute to an increase in emergency admissions for LRTIs. These hypotheses should be investigated further, but, for the time being, we will assume that these changes are taking place and would take around two years to become routine clinical practice, thereby leading to a potential increase for emergency admissions for LRTIs in 2011/12 and 2012/13. After this time, emergency admissions for LRTIs are assumed to level off, reflected in a flat projection based on the value for 2012/13.

5.116. The projection figures were produced using the following method:

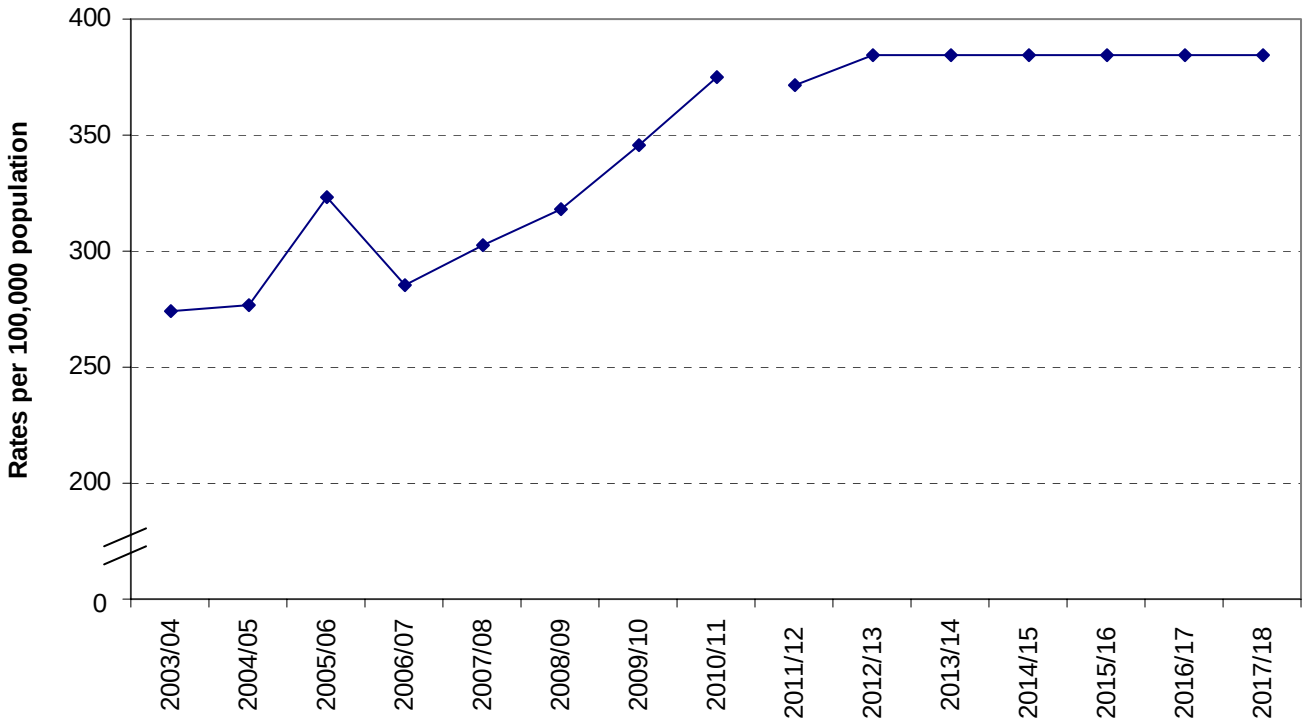
- The annual totals were calculated by summing up the quarterly figures for emergency admissions for all persons (see section A).
- The effect of time on annual emergency admissions for all persons was estimated by a linear regression analysis and produced a regression equation with an intercept = 251.62 and a regression coefficient = 13.29. Projected figures for 2011/12 and 2012/13 was produced by this regression equation – see Table 3.2.g and Figure 3.2.k.
- A flat projection based on the projected value for 2012/13 is used for the period 2013/14 to 2017/18.

Table 3.2.g Current practice projections for emergency admissions for children with LRTIs (per 100,000 population)

	Persons	Projections
2003/04	273.8	
2004/05	276.9	
2005/06	323.4	
2006/07	285.0	
2007/08	302.3	
2008/09	317.9	
2009/10	346.0	
2010/11	374.9	
2011/12		371.2
2012/13		384.5
2013/14		384.5
2014/15		384.5
2015/16		384.5
2016/17		384.5
2017/18		384.5

Source: NHS Information Centre Indicator Portal, DH

Figure 3.2.k Current practice projections for emergency admissions for children LRTIs (per 100,000 population)



Source: NHS Information Centre Indicator Portal, DH

(c) Indicator 3.2: Scope for Improvement

5.117. Good outcomes in this area will require all parts of the NHS working effectively and efficiently. In particular, successful treatment and management of these conditions in primary or community care may lead to fewer emergency admissions for children. Therefore, should there be any loss in efficiency in the way the NHS delivers healthcare in this area, we would expect to see an effect on this indicator.

5.118. The Child Health Atlas of Variation[14], published on March 2012, contains an indicator on the rate of admissions for bronchiolitis in children per 100,000 population aged under 2 years by PCT for 2007/07-2009/10 (note that these data is not confined to emergency admissions as in the indicator definition). This shows a sixfold variation in rates of admission from 689 to 3,826 per 100,000 population under 2 years. As noted previously, rates are higher in areas of greater socio-economic deprivation, but variation in admissions between health authorities remains even when social deprivation is taken into account. This may reflect variation in access to, and expectation of, health services and also clinical practice, which suggests scope for improvement.

5.119. The Children and Young People's Health Outcomes Strategy is under development and will be seeking to identify those outcomes that are the most meaningful to children and young people in improving their health and well-being. In particular, the forum is expected to do some work in reviewing the indicator, assessing its fitness for purpose, identifying any additional outcomes needed in this area and outlining the contribution that the different parts of the health system need to make in supporting their delivery

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3.3 – An Indicator on Recovery from Injuries and Trauma (to be developed)

Outcome sought	Effective recovery following injury or trauma.
Updated definition	Further work is required on the definition for this indicator.

(a) Indicator 3.3: Recent Trends and Explanations

5.120. The indicator definition under development.

(b) Indicator 3.3: Current Practice Projections

5.121. To be decided.

(c) Indicator 3.3: Scope for Improvement

5.122. Several current and planned policy initiatives are likely to lead to improvements in this outcome within current resources. Major trauma has been part of the minimum take for specialised services and commissioned through specialised commissioning teams since April 2012. As part of the transition to the NHS Commissioning Board, a Clinical Reference Group has been established, which is chaired by Keith Willett, the National Clinical Director for trauma care.

5.123. Regional trauma networks went live across England in April 2012. They are funded through a best practice tariff. This is paid according to the degree of injury of the patient, as measured by the injury severity score (ISS). The impact of this should be to increase survival and access to rehabilitation.

5.124. Experience from Australia and the USA has demonstrated that it takes 5 – 10 years for networks to mature and be able to demonstrate improvements in survival and morbidity. We will be monitoring the impact of the networks on the survival of this patient group.

5.125. Aside from these initiatives, there is evidence there could be further scope for improving this outcome at zero net cost by reducing regional variation and/or rolling out best practice. As part of the commissioning process, a major trauma dashboard has been developed, which will describe a number of process measures and demonstrate performance in this area. Comparison between different networks will allow the dissemination of best practice from areas with the best performance.

5.126. There is also potential scope for improvement by redeployment of resources between conditions, service lines and health economies. The Recovery Rehabilitation Reablement (RRR) programme is trying to achieve this end point. There will be a focus on more generic non-specialist rehabilitation especially for people with musculo-skeletal rehabilitation needs, alongside a focus on the end of the acute pathway and the stepdown from hospital.

3.4 – Proportion of Stroke Patients Reporting an Improvement in Activity/Lifestyle on the Modified Rankin Scale at 6 months

Outcome sought	Effective recovery following a stroke.
Updated definition	This indicator was selected as part of the Innovation in Outcomes Competition and the following definition continues to be developed. The Modified Rankin Scale (mRS) is a commonly used scale for measuring the degree of disability or dependence in the daily activities of people who have suffered a stroke. The mRS score will be taken at diagnosis and at 6-months post stroke at a regular review. This could take place in primary care, elsewhere in the community, or in a hospital clinic. The method of this follow-up will vary but could be done in person at a 6-month review visit, via a postal questionnaire or by phone. It will cover adults with stroke aged 18 and over.

(a) Indicator 3.4: Recent Trends and Explanations

5.127. The indicator definition is under development.

(b) Indicator 3.4: Current Practice Projections

5.128. To be decided.

(c) Indicator 3.4: Scope for Improvement

5.129. Several current and planned policy initiatives are likely to lead to improvements in this outcome within current resources. We are presently in the fourth year of implementation of the 10 year National Stroke Strategy, aiming for improvement along the stroke pathway. Since 2007, stroke has been a priority across health communities and changes in outcomes are becoming apparent. 30 day mortality from stroke has fallen from 24% to 16% in 4 years and more people return home after stroke. It seems likely that sequential measurement of the Modified Rankin Score at 6 months will demonstrate an increasing proportion of people alive and independent after stroke.

5.130. Establishing 7 day services is another policy initiative which will support the improvement of this measure. The new community information data set[1] will measure referral to treatment time for allied health professionals, which could also support more rapid management of patients with stroke post hospital.

5.131. The new Cardiovascular Disease Outcomes Strategy to be published in Spring 2013 will benefit people with stroke, through an integrated person-centred approach to care.

5.132. Aside from these initiatives, there is evidence there could be further scope for improving this outcome at zero net cost by reducing regional variation and/or rolling out best practice. The 28 stroke networks across England play a major role in spreading good practice and reducing variation. The networks are set to play a role in the reformed system as Strategic Clinical Networks, and are likely to continue to deliver elements of the National Stroke Strategy

5.133. As the Modified Rankin Scale has not to date been systematically measured after stroke at a national level in England, it is not possible to make an international or regional comparison. The first year of the data collection at least will be focussed on good compliance with submission of accurate data.

5.134. There is also potential scope for improvement by redeployment of resources between conditions, service lines and health economies. Joint commissioning between health and social care offers a major opportunity for further development of post-acute care for strokes. Early Supported Discharge (ESD) brings improvement in function, releases bed-days and reduces the cost of care packages. After a stroke, 40% of patients can achieve better outcomes and leave hospital early with ESD.

References

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3.5 – The Proportion of Patients with a Fragility Fracture Recovering to their Previous Levels of Mobility at i. 30 days and ii. 120 days

Outcome sought	Effective recovery of mobility following a fragility fracture.
Updated definition	The definition for this indicator continues to be developed. However, it will be based on the following. Five reporting categories will form the basis for this indicator, measured at 30 and 120 days following a fragility fracture (hip only initially, vertebral and wrist also subsequently), as follows – 1. Freely mobile outdoors without aids 2. Mobile outdoors with one aid 3. Mobile outdoors with two aids or frame 4. Some indoor mobility, but never goes outdoors without help (i.e. effectively housebound) 5. No functional mobility (bed/chair; wheelchair, etc.)

(a) Indicator 3.5: Recent Trends and Explanations

5.135. The indicator definition is being finalised and data will be published during 2012.

(b) Indicator 3.5: Current Practice Projections

5.136. To be decided.

(c) Indicator 3.5: Scope for Improvement

5.137. Several current and planned policy initiatives are likely to lead to improvements in this outcome within current resources:

- The Best Practice Tariff assists providers in implementing improvements to fragility fracture care and, as of April 2010, all English Trust providers are paid not just for activity, but are entitled to a higher-level payment if a hip fracture patient receives Best Practice care. Evidence shows that early managed care administered by a multidisciplinary team improves the mobility outcome.

- The Recovery, Rehabilitation and Reablement (RRR) programme aims at changing the current tariff structure so that some of the tariff allocation is allocated to the recovery/reablement/rehabilitation phase rather than being all allocated to the acute cure phase, that usually lasts just a few days. This should encourage a multidisciplinary team approach to the care and rehabilitation of the patient.

5.138. The extent to which these DH policies will influence this indicator is unknown and more work is needed to ascertain what the scope for improvement is.

3.6 – The Proportion of Older People (65 and over) who were Still at Home 91 days after Discharge from Hospital into Reablement / Rehabilitation Services

Outcome sought	**Helping older people to recover their independence after illness or injury.**

(a) Indicator 3.6: Recent Trends and Explanations

5.139. Not available at this time.

(b) Indicator 3.6: Current Practice Projections

5.140. To be decided.

(c) Indicator 3.6: Scope for Improvement

5.141. Several current and planned policy initiatives are likely to lead to improvements in this outcome within current resources. For example, what is done in hospital, how patients are managed, how many admissions are prevented, how discharge is planned, how well patients are when they leave can all effect the indicator at some point along the patient's pathway sand as a result have an effect on the post discharge process. So, reablement services cannot be seen in isolation. The following policies may have an impact on outcomes:

- NHS Operating framework has prioritised care of older people including discharge from hospital;
- Focus on dementia care across all settings including dementia CQUIN;
- Additional Spending Review monies to reduce delayed transfers[2,3];
- Relevant quality standards and NICE (National Institute for Clinical Excellence) guidelines for older peoples services (e.g. on dementia, delirium, incontinence, falls, nutrition, hip fracture, falls, non hip fracture) [4];
- Hip fracture best practice tariff (see NHS Operating Framework 2011-12);
- Delayed transfers of care monitoring/ reporting[5].

5.142. The extent to which these DH policies will influence this indicator is unknown and more work is needed to ascertain what the scope for improvement is.

5.143. Aside from these initiatives there is evidence there could be further scope for improving this outcome at zero net cost by reducing regional variation and/or rolling out best practice. The first year of funding and investing in reablement services was 2011/12, with monies of £150m. Information on how much and where this was invested is not collected centrally. We know from our intelligence of the national rollout of homecare reablement in social care/local authorities that the models are locally designed and delivered and therefore local-national variation exists.

5.144. In 2012/13 reablement monies of £300m were allocated to PCTs. Flexibility in how these funds are invested has been encouraged in order to enable local commissioners to ensure reablement capacity exists within the local health economy. Reablement can be provided by the NHS, local authorities and voluntary community social enterprise.

5.145. The monies are designed to optimise reablement capacity within local health and social care communities. It is unlikely that full capacity and capability currently exists. Reablement services are also strongly linked to improving value for money and efficiencies, as evidence suggests it is a more cost effective service than the traditional homecare packages offered. Therefore there is an incentive for local authorities to invest in reablement to achieve efficiency savings.

5.146. We know from research evidence and from quality improvement studies that if we manage older people with complex needs well at the front door-admission to the hospital, continue to manage them expertly during admission, plan discharge proactively etc., it increases their chance of remaining independent and living in their own homes. We also know from integrated care models such as Wandsworth community wards that better continuity care services can improve post discharge outcomes. These models can be cost neutral.

5.147. There is also potential scope for improvement by redeployment of resources between conditions, service lines and health economies. This indicator looks at older people (65 years and over), who are probably the predominant group using hospital services and in need of reablement health care and support services. However, reablement services can also be applicable for stroke sufferers, as well as those with Chronic Obstructive Pulmonary Disease (COPD) or other long-term conditions and multiple co-morbidities, who are not necessarily 65 years and over. A greater ability to transfer funding into community services including rehabilitation and reablement, a greater ability to provide better continuity in care and a greater focus on those patients with frailty, long term conditions and complex needs within hospital and post discharge can deliver gains and overcome unwarranted local variations in practice.

5.148. This indicator and reablement services are strongly aligned to policies usch as Delayed Transfers of Care, reducing emergency admissions and readmissions, as well as forthcoming developments in the tariff (Year of Care and 3R model). Therefore, we do not anticipate performance to deteriorate.

5.149. This indicator and reablement services are strongly aligned to the Adult Social Care Outcomes Framework.

References

1. For further information, consult: Department of Health (19 April 2012). QIPP Long Term Conditions Year of Care Funding Model: Early Implementers. Accessed: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_133650

2. Department of Health (13 January 2011). NHS support for social care: 2010/11 – 2012/13. Accessed: http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_123460

3. Department of Health (3 January 2012). Extra money to help people leaving hospital. Accessed: http://www.dh.gov.uk/health/2012/01/care-services-to-receive-170m-in-additional-funding/

4. National Institute for Health and Clinical Excellence. NICE quality standards. Accessed: http://www.nice.org.uk/aboutnice/qualitystandards/qualitystandards.jsp

5. Department of Health. Acute and Non-Acute Delayed Transfers of Care. Accessed: http://www.dh.gov.uk/en/Publicationsandstatistics/Statistics/Performancedataandstatistics/AcuteandNon-AcuteDelayedTransfersofCare/index.htm

(3) Domain 3 Levels of Ambition

5.150. This section considers for Domain 1 as a whole:

(a) Aggregated Scope for Improvement

(b) Levels of Ambition

(c) Implications for Inequality

(3)(a) Domain 3 Aggregated Scope for Improvement

5.151. In this section Domain 3 initial estimates of aggregated scope for improvement are presented in terms of additional QALYs achieved through unwanted activity in this domain e.g. reducing emergency admissions or through improving outcomes through planned hospital care e.g. PROMs. A number of judgements have been made in converting the indicators in the domain metrics, and the potential for improvement may be under-or-over ambitious. These will need to be reviewed as the analysis is refined and further evidence emerges and so are subject to change. The aggregation is derived from assessed scope for improvement for individual indicators in the Domain.

Domain 3 - QALYs gained		
		Scope for Improvement
2012/13		0
2013/14		2,000
2014/15		4,000
2015/16		6,000
2016/17		7,000
2017/18		9,000
2018/19		9,000
2019/20		9,000
2020/21		9,000
2021/22		9,000
2022/23		9,000
2 year		6,000
5 year		28,000
10 year		73,000

Estimates are currently based on reductions in emergency admissions that could be achieved through improving urgent and emergency care, reductions in avoidable emergency re-admissions and improvements in patient reported outcomes for 4 elective procedures where indicators are in the NHS Outcomes Framework
Additional scope not yet included, as indicators are not yet ready: o Improving recovery from injuries and trauma o Improving recovery from stroke o Improving recovery from fragility fractures o Helping older people to recover their independence after illness or injury o Improvements through doing additional cost-effective interventions

Scope for improvement – Emergency admissions

5.152. Reductions in emergency admissions are assessed in the same way as for indicators 2.3(i) and 2.3(ii) in domain 2. Which is as follows:

- Estimates of scope for reductions in emergency admissions are measured against current practice projections. The potential reductions through the NHS improving urgent and emergency care services are presented in the table below. This is an ambition for reductions, actual reductions that local NHS organisations target will be different and will be dependent on local planning and circumstances.

- These reductions are measured against current practice projections which are outlined above, to give the reductions in emergency readmissions that could be achieved.

Efficiency savings reduction in Emergency Admissions (% vs. current practice projections)	
2012/13	-10%
2013/14	-15%
2014/15	-20%
2015/16	-20%
2016/17	-20%
2017/18	-20%
2018/19	-20%
2018/20	-20%
2019/20	-20%
2020/21	-20%
2021/22	-20%
Source: DH estimates of potential for reducing emergency admissions for long-term conditions through improved urgent and emergency care services	

Scope for improvement – emergency re-admissions

5.153. Reductions in emergency re-admissions are estimated based on the evidence provided in the scope for improvement section above. For the purpose of quantification approximately 15% of emergency re-admissions could be avoidable.

Scope for improvement – PROMS

5.154. PROMs data is expressed in the domain metric level – average EQ-5D score. Improvements in this indicator can be translated into QALYs by multiplying improvements in the EQ-5D score by an estimate of the duration of the improvement in QoL through the interventions, and the numbers of people this improvement will affect. These estimates are presented in the table below.

5.155. Scope for improvement for these indicators is based on improvements for commissioners in the lowest quartile of performance. The new average PROMs score is calculated on this. Total QALY gains are then calculated by multiplying the change in the average EQ-5D score by the number of interventions per annum, and the estimated duration of the improvements in EQ-5D score (i.e. how long we expect the hip replacement to last) These estimates are currently based on DH estimates and need to be refined through further analysis.

Scope for improvement of average health gained based on reduced variation		Average duration (years)	Numbers undergoing procedures per annum
Hip replacement	0.003	15	63,625
Knee replacement	0.003	15	72,563
Groin Hernia	0.002	3	68,640
Varicose veins	0.004	3	34,855
Source: DH calculations for scope for improvement; assumptions for duration of effect based on judgement of the literature; PROMS data for numbers undergoing procedures per annum			

Conversion to Domain Metric – emergency admissions and re-admissions

5.156. Acute admissions are converted into the QALY gains and are based on estimates about the reductions in Quality of Life that will be experienced through being in hospital, calculated in the following way:

- Average QoL is by definition 1 (on the principle that each person's life is of equal value – and health related quality of life must therefore be calibrated to the maximum achievable health state of the individual concerned)
- QoL while being avoidably in hospital is halved (0.5) through not being able to perform usual activities, loss of mobility etc.
- This reduction applies while the individual is in hospital (i.e. the average length of stay for the relevant admissions). This is estimated to be:
  - approximately 5.7 days for acute admissions (sourced from HES) and
  - 7 for emergency re-admissions (assumed to be the same as acute admissions currently)
- These estimates are then applied to the reductions in activity calculated above to estimate the potential QALY gain.

5.157. This gives the following QALY gain estimates per annum:

Year	QALY gain from reduction in emergency admissions (indicator 3a)	QALY gains from reductions in emergency re-admissions (indicator 3b)
2012/13*	221	0
2013/14	367	47
2014/15	528	95
2015/16	563	142
2016/17	597	189
2017/18	633	237
2018/19	653	237
2019/20	659	237
2020/21	664	237
2021/22	669	237
2022/23	674	237

5.158. *These figures will be updated in the consultation period such that the scope for improvement is calculated from a 2012/2013 base year. As data for 2012/13 will not be available at that time it will be necessary to forecast a 2012/2013 outturn as the basis for such calculation, which will then be subject to review in light of the final figures once available.

Conversion to domain metric – PROMS

5.159. PROMS improvements are already expressed in EQ-5D which is the basis for the domain metric (QALYs), combined with duration effects and numbers going through the services. This leads to the following estimates for QALYs gained under levels of ambition.

	QALY gains			
Year	Hip replacement *(indicator 3.1i)*	Knee replacement *(indicator 3.1ii)*	Groin hernia *(indicator 3.1iii)*	Varicose veins *(indicator 3.1iv)*
2012/13*	0	0	0	0
2013/14	665	641	87	85
2014/15	1330	1283	175	169
2015/16	1995	1924	262	254
2016/17	2660	2565	349	338
2017/18	3325	3207	436	423
2018/19	3325	3207	436	423
2019/20	3325	3207	436	423
2020/21	3325	3207	436	423
2021/22	3325	3207	436	423
2022/23	3325	3207	436	423

5.160. *These figures will be updated in the consultation period such that the scope for improvement is calculated from a 2012/2013 base year. As data for 2012/13 will not be available at that time it will be necessary to forecast a 2012/2013 outturn as the basis for such calculation, which will then be subject to review in light of the final figures once available.

Sensitivities and discussion

5.161. For emergency admissions (3a and 3b) the method for calculation of QALY loss is approximate based on a judgement of the reduction in quality-of-life which results from a “generic” emergency admission.

5.162. The estimates of duration of impact of PROMs improvements need to be refined. Currently a judgement has been taken about the duration of improvement for the four procedures. A more sophisticated methodology applying failure rates and the numbers and ages of patients going through hip and knee replacements is being developed.

5.163. The type of care which domain 3 covers relates to a large proportion of hospital activity. In some cases the indicators in the domain cover a small proportion of relevant activity. For example PROMs outcomes cover hips, knees, varicose veins and groin hernia. This relates to approximately 220,000 elective procedures per annum – in 2010/11 there was approximately 9.6million total elective procedures according to HES.

5.164. Efforts are being made to improve coverage of PROMs data. The White Paper, Equity and excellence: Liberating the NHS proposes an expansion of PROMs "wherever practicable". In secondary care initiatives include:

- During 2012/13, the use of a generic PROMs questionnaire which will be applicable to significantly increased range of acute interventions;
- a pilot to test the feasibility of extending the PROMs to include some heart interventions (i.e. angioplasties and coronary artery bypass grafts) which is running from Nov 2011 for 18 months; and
- a pilot for secondary care treatment of depression during 2012

(3)(b) Domain 3 Levels of Ambition

5.165. This section assesses appropriate Levels of Ambition for Domain 3, adding to the scope for improvement of individual indicators the scope for gains in allocative efficiency, conditioned by a realistic assessment of the challenge presented to the NHS to achieve requisite change.

5.166. The assessed scope for improvement set out in the previous section arises from a very partial review of the work done in this Domain based on available indicators and data. Other indicators in the Domain will pick up contributions to improvements in recovery in important additional areas.

5.167. Furthermore, over time, additional elective procedures will benefit from the introduction of Patient Reported Outcome Measures (PROMs), so allowing better measurement of outcomes, and incentivising and informing better practice to realise improved outcome.

5.168. However, assessment of over all Level of Ambition for Domain 3 must also take account of the capacity to achieve change.

5.169. The capacity of the NHS to support rapid and effective recovery from episodes, and thus to avoid inappropriate admissions, readmissions and institutionalisation, and to achieve good recovery, is determined in part by the volume of incidents of ill health and injury, weighted by severity. Volume spreads resources more thinly; case mix affects the potential to benefit of the average case.

5.170. Hence, the appropriate level of ambition for this Domain depends upon:

- Projected number of episodes requiring NHS intervention to prevent hospitalisation.
- Projected number of incidents requiring emergency admission for which adequate care is required to avoid readmission and/or institutionalisation.
- Projected elective care episodes.

5.171. Consideration should be given to any independent determinants of this volume. Volume of care required should then be weighed against consequential ability of NHS to deliver current levels of outcome given overall budget constraint.

5.172. However, volume is determined in part by referral thresholds used by the NHS: if referral thresholds go down, the average potential to benefit will fall both because resources are spread more thinly and because average capacity to benefit will shrink. It is important that the indicator should capture the additional benefit from treating more people, too. Further work is needed to determine how to assess and to address the importance of changes in referral thresholds. (NB for conditions covered by PROMs, a robust measure of change in referral thresholds is available.)

5.173. In each case, projections should also be sensitive to demographic factors (the numbers in each age band – where age bands are categorised by distance from death).

5.174. For Domain 3, levels of ambition will considered in terms of additional QALYs to be delivered by the NHS in supporting recovery from illness and injury.

5.175. Levels of ambition will be included in the final mandate.

(3)(c) Domain 3 Implications for Inequality

5.176. Further work will explore relevant considerations for assessment of inequality in Domain 3.

(4) Domain 3 Considerations for Retrospective Assessment

5.177. This section draws attention to the factors that should be taken into account when assessing whether overall domain performance by the NHS has met levels of ambition set.

5.178. Performance can be assessed from the bottom up by consideration of the observed path of each individual indicator relative to its projected outcome. This should involve the following steps:

- retrospective adjustment of the projections in light of any unexpected shifts in the external drivers of performance, taking into account lags
- calculation of the residual movement and attribution to NHS performance (noting whether there are any known changes in NHS practice that might explain changes in outcome)
- translation of net divergences into incremental QALYs gained or lost,
- comparison of aggregated net change in Life Years attributed to the NHS with Levels of Ambition.

5.179. The overview to this domain (section (1) above explained that the indicators currently available represent a very partial perspective on three different areas of NHS contribution to recovery from illness and accident: (i) episodes that should be dealt with in primary care, (ii) episodes requiring unplanned admission to hospital, and (iii) episodes requiring elective admission to hospital. Retrospective assessment of performance should attempt to assess the overall performance of the NHS in these three areas, taking into account, in addition to performance of the individual indicators:

- estimates of changes in the volume of demand in these three areas, and the extent to which any increase in demand has been met
- estimates of changes in the quality of treatment in areas not currently covered by the indicators.