

## Authors

Candace Imison  
Emmi Poteliakhoff  
James Thompson

August 2012

# Older people and emergency bed use

## Exploring variation



### Key messages

- There is significant variation in the use of hospital beds by people over 65 admitted as an emergency. This results, in almost equal part, from variation in rate of admission and variation in length of stay. However, for the areas in our study with the highest and lowest rates of bed use, rate of admission is the dominant driver.
- The potential reductions in emergency bed use by patients over 65 are considerable; if all primary care trusts (PCTs) achieved the rate of admission and average length of stay of the lowest 25th percentile, 7,000 fewer hospital beds would be needed across England.
- The drivers of variation are complex, and their relative strength varies. They include patient attributes, availability of community services, access to hospital services, the way in which hospital services are managed, and, most importantly, the way in which services and staff relate to each other.
- Our analysis confirms other evidence that age, deprivation and geographical access are also major drivers of emergency bed use.
- The links between hospital bed use and access to community services such as GPs, community nursing and social care are less clear cut. But PCTs with the highest bed use tended to have excessive lengths of stay for patients for whom hospital was a transition between home and supported living.
- Areas that have well-developed, integrated services for older people have lower rates of hospital bed use. Areas with low bed use also deliver a good patient experience and have lower readmission rates.
- Areas with higher proportions of older people have lower rates of emergency bed use. These areas may be more likely to have prioritised the needs of older people and to have developed integrated service models.
- Commissioners buying a high proportion of their overall activity from one provider have lower rates of hospital bed use. This may be a result of increased capacity to develop integrated service models; it may also be a proxy indicator for the population's overall access to hospital care.
- Any local strategy should look across the system and align ways of working between primary, community and acute care to reduce avoidable admissions and length of stay in hospital.

## Introduction

An emergency admission to hospital is a disruptive and unsettling experience, particularly for older people, exposing them to new clinical and psychological risks and increasing their dependency (Glasby 2003; Hoogerduijn *et al* 2007; Lafont *et al* 2011). The use of acute hospital beds for older people can be reduced through avoiding emergency admissions and/or reducing excessive lengths of stay.

This paper explores variation in the use of acute beds by older people admitted as an emergency, and examines the factors that may be driving this variation. We explore what can be learned from those areas with the highest and lowest rates of bed use, and those that have recently achieved significant reductions in their rate of bed use. Our analysis is based on existing Hospital Episode Statistics (HES) data and Office for National Statistics (ONS) population estimates, alongside other evidence on the factors that drive the use of acute beds by patients over 65 admitted as an emergency.

Over the past 40 years, changes in medical and surgical treatment have driven reductions in average length of stay, a growth in the number of patients treated as day cases, and a reduction in the overall number of acute beds. Recent policy has encouraged a further shift in the locus of care from hospital to community settings (Department of Health 2006). The total number of acute beds has fallen by a third in the past 25 years, from 181,000 in 1987/8 to 122,000 in 2009/10 (Department of Health 2010).

Despite these reductions, there are still more than 2 million unplanned admissions a year for people over 65, accounting for 68 per cent of hospital emergency bed days, and the use of more than 51,000 acute beds at any one time. The King's Fund's recent briefing (Poteliakhoff and Thompson 2011) on the use of acute beds highlighted significant opportunities to reduce length of stay, particularly for the 10 per cent of patients who stay longer than two weeks.

## Analysing variation in the use of emergency beds by those aged over 65

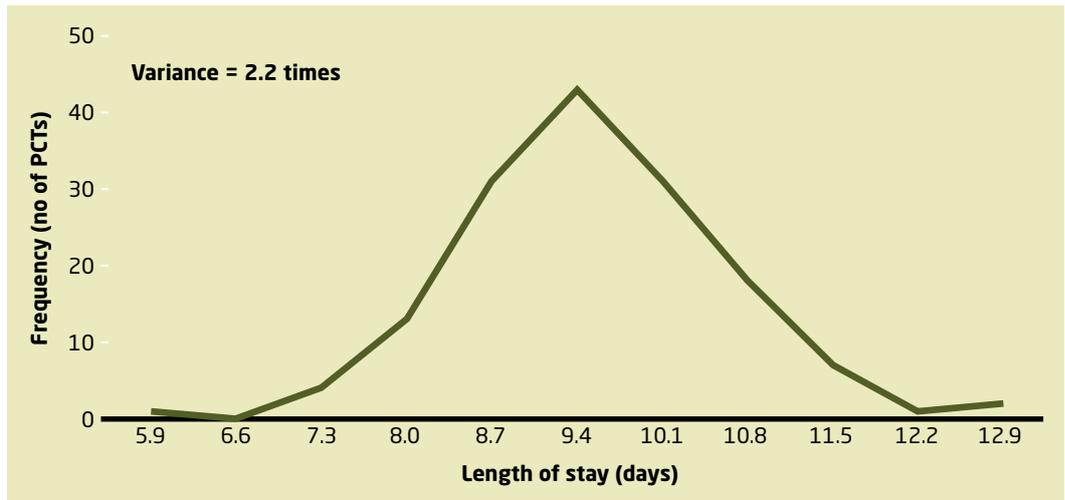
Our analysis explored variation in the use of acute beds by patients over 65 admitted as an emergency after adjusting for the recognised patient-based or demand-side drivers – age, sex and need – as measured by the Hospital and Community Health Services (HCHS) needs index. A detailed description of methods and full results is provided in a supporting data annex (see [www.kingsfund.org.uk/publications](http://www.kingsfund.org.uk/publications)). It is important to note that at the time of commencing this analysis the most recent HES data available to us related to 2009/10. Relative positions of PCTs may have changed in the intervening period. This does not compromise our overall conclusions which were based on data sets from the same time period and therefore consistent. The importance of this analysis is what it tells us about the relative importance of different factors in driving bed use.

## Understanding variation

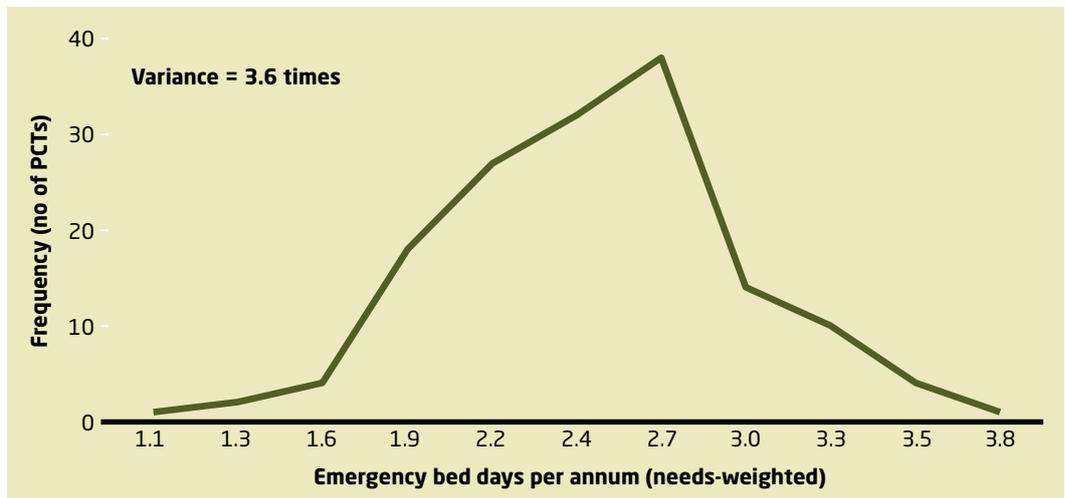
Our analysis found a nearly fourfold variation in the use of acute beds between different primary care trust (PCT) areas. This variation is driven by big differences in length of stay and rates of admission (see Figures 1, 2 and 3 opposite). We have calculated that for all PCT areas the variation in length of stay and rates of admission accounts almost equally for the overall rate of variation.

If all PCTs achieved rates of admission and lengths of stay for patients over 65 similar to those with the lowest bed use, the potential reductions in hospital beds are considerable (see Figure 6, p 5). For example, if all PCTs achieved the rate of use of the lowest 25th percentile, about 7,000 fewer beds would be needed. Reducing length of stay alone would

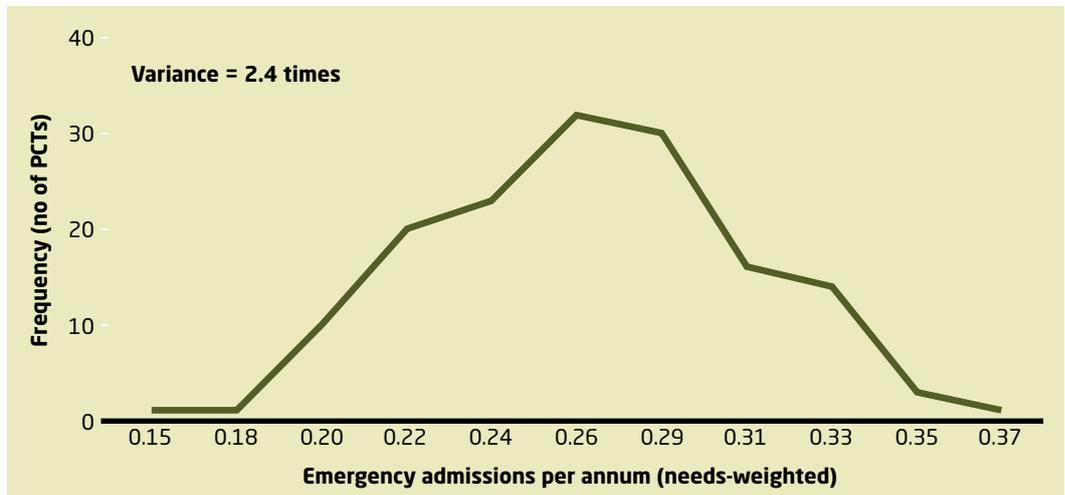
**Figure 1** Average emergency length of stay for patients over 65, national distribution



**Figure 2** Needs-weighted emergency bed days per person over 65, per annum, national distribution



**Figure 3** Needs-weighted emergency admissions per person over 65, per annum, national distribution



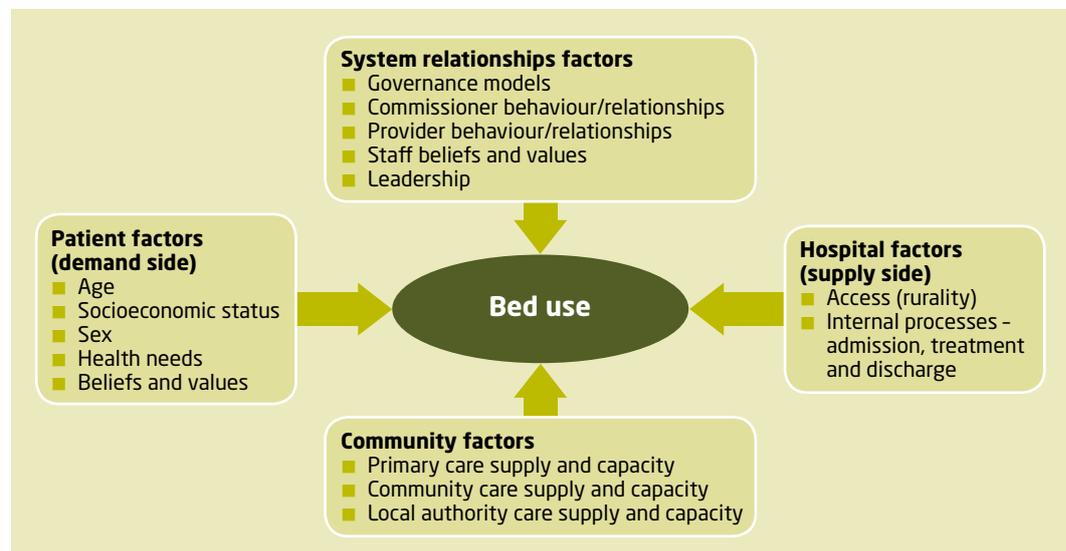
Source for Figures 1–3: The King’s Fund analysis of Hospital Episode Statistics (HES) data 2009/10, and Office for National Statistics (ONS) Mid-2007 population estimates

free up many beds. For example, if length of stay for patients over 85 was reduced to the level achieved in the 10 urban PCTs with lowest bed use, about 3,200 beds would be released.

### Key drivers of variation

Variation in the use of emergency beds by people over 65 is influenced by many factors (see Figure 4 below). Patient-based factors such as age, sex and health status drive the underlying demand for beds. Community-based resources (including primary, community and local authority services) can also help to avoid admissions or facilitate early discharge. Relationships between services and the extent to which they co-ordinate and work collaboratively are also important. As we discuss later, these relationships between services are critical to changing and improving the system. Finally, hospital-based (supply-side) factors also influence the likelihood of emergency admission of patients over 65 and the speed of discharge.

**Figure 4** Factors driving rate of use of hospital emergency beds for people over 65



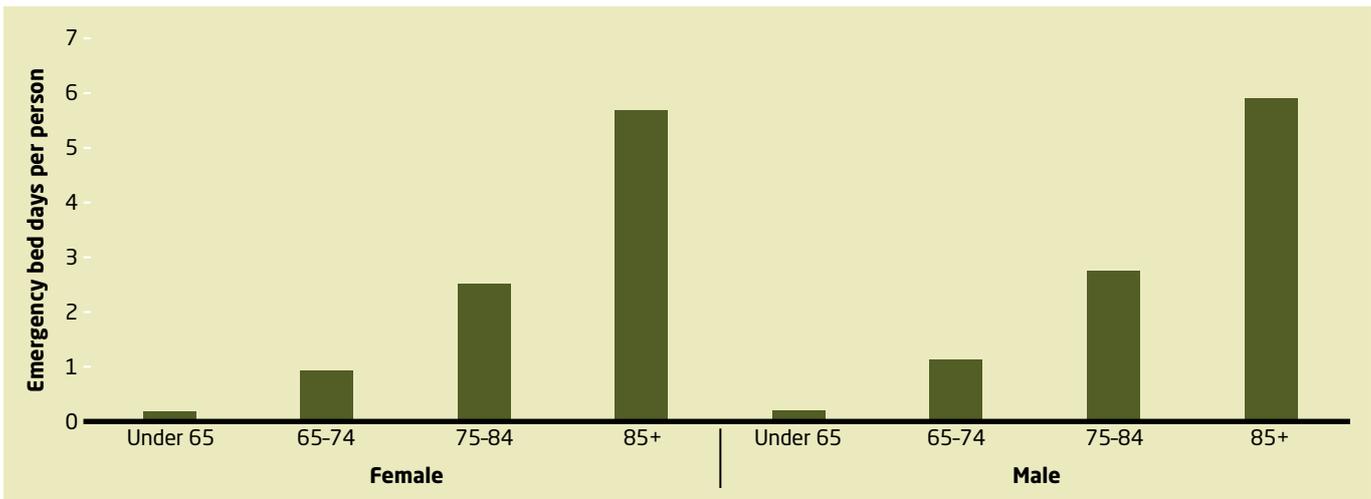
Of all these factors, age is the strongest driver. Men and women under 65 use approximately one-fifth of a bed day, whereas men and women over 85 use more than five bed days per annum (see Figure 5 opposite).

The difference in observed length of stay between those over 65 and those under 65 admitted as an emergency is also stark. In 2009/10, the average length of stay was approximately three days for patients under 65, but nine days for patients over 65. Among over 65s, the average length of stay varied from seven days (for those aged 65–74) to 11 days (for those aged 85 and over).

Analysing the relative importance of the potential drivers is complex because they are often inter-related (for example, deprived populations tend to be located in urban areas). There is also longstanding evidence of so-called ‘supply-induced’ demand. Wennberg and Gittelsohn (1982) showed that use of health care was more closely correlated with factors such as the number of surgeons than with population health need. As a result of these complexities, we have opted to explore variation through investigating four groups of 10 primary care trusts (PCTs): 10 at each extreme of the normal distribution – that is, those with the lowest and highest bed use – and two other groups of PCTs:

- urban PCTs with the lowest rate of bed use
- PCTs with the greatest reduction in their rate of bed use from 2006/7 to 2009/10.

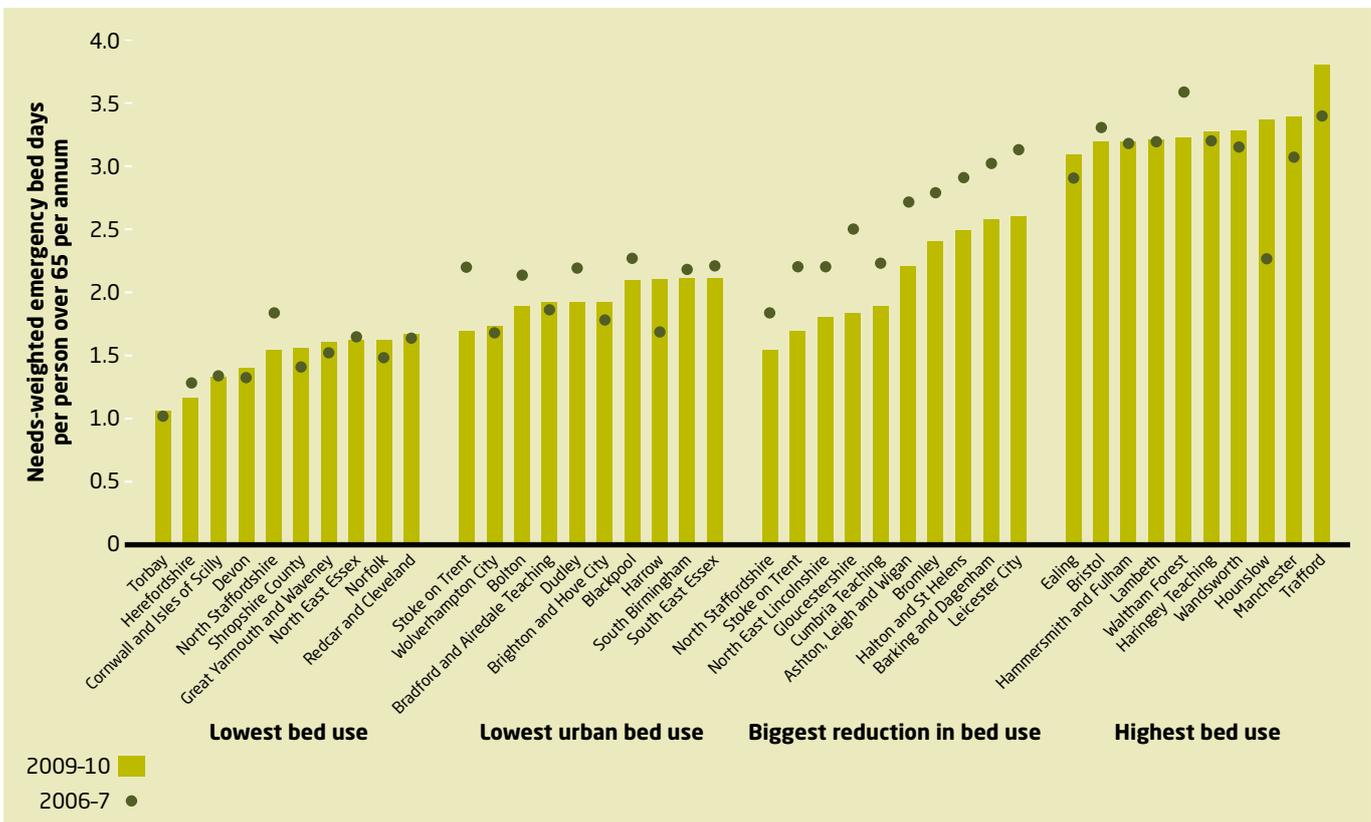
**Figure 5** Emergency bed days per person per annum, by age group and gender



Source: The King's Fund analysis of HES data 2009/10 and ONS Mid-2009 population estimates

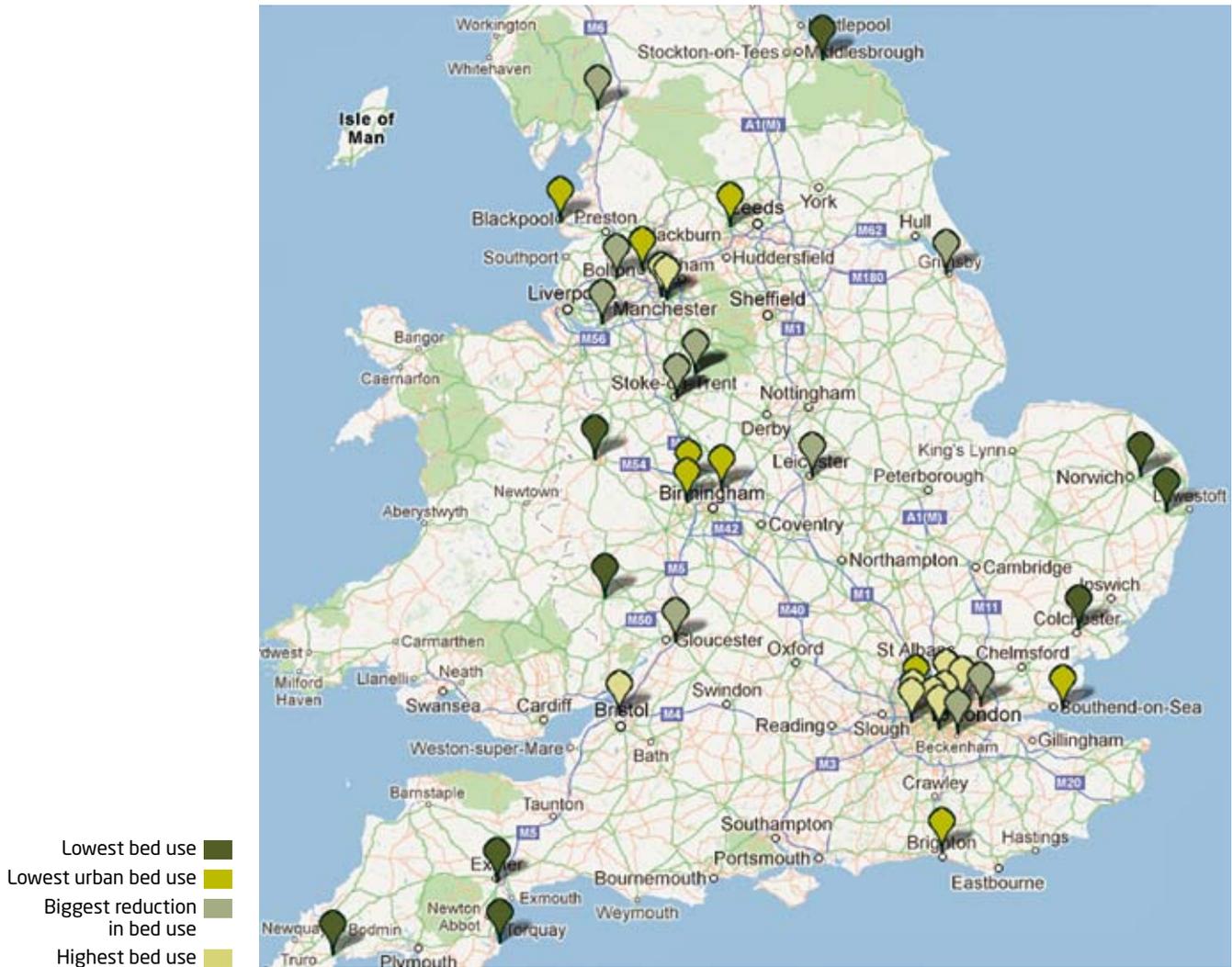
The PCTs with the lowest bed use are almost all rural, and those with the highest use almost all urban (see Figure 6, below and 7 overleaf). Seven of the 10 PCTs with the highest bed use are in London. We have therefore also selected PCTs in urban settings with the lowest bed use, but only one of these was in London. The fourth group – those PCTs that have achieved the biggest reductions in emergency bed use – were selected because improvement over time is also an interesting marker of success. Urban and rural PCTs are evenly represented among the group with the greatest reduction in bed use.

**Figure 6** Needs-weighted emergency bed days per person over 65 per annum for the four PCT groups identified



Source: The King's Fund analysis of HES data 2006/7 and 2009/10, and ONS Mid-year population estimates 2007

**Figure 7** The four groups of 10 PCTs



Source: The King's Fund using Google Maps. Map data © 2012 Google, Tele Atlas

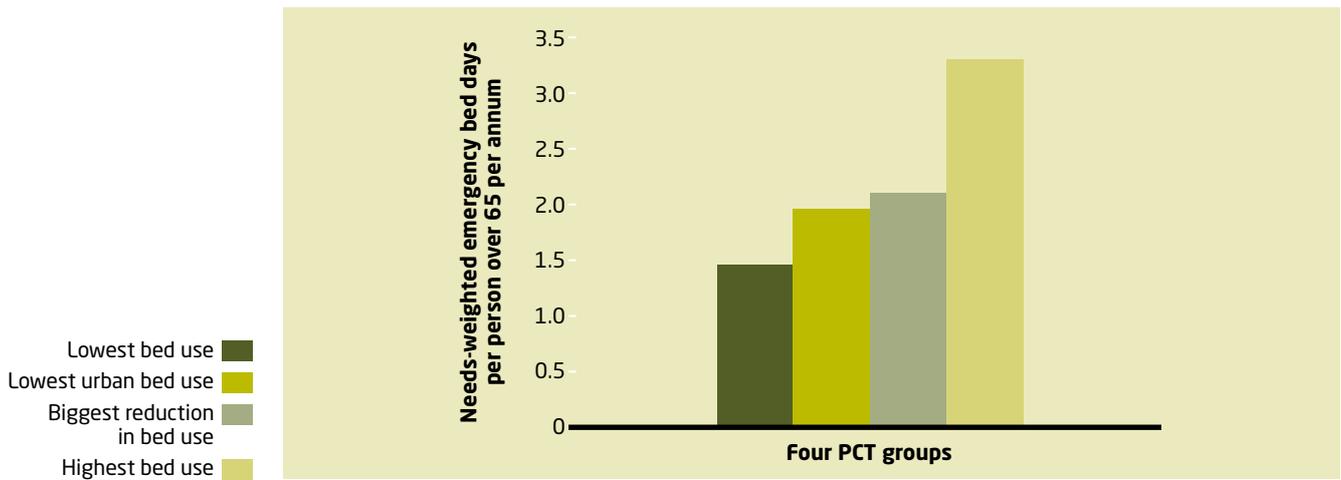
### Key markers of variation in each of the four PCT groups

Figures 8, 9 and 10, opposite, show the comparative position of each of the four PCT groups that were investigated, in terms of rate of bed use, rate of admissions, and length of stay for patients over 65 admitted as an emergency.

Our analysis shows higher rates of admission for those aged over 85 compared with those aged over 65 in all four PCT groups (*see* Figures 11 and 12, p 8). Length of stay is noticeably higher in the PCT group with highest bed use. Rates of admission show greater variation between the four PCT groups.

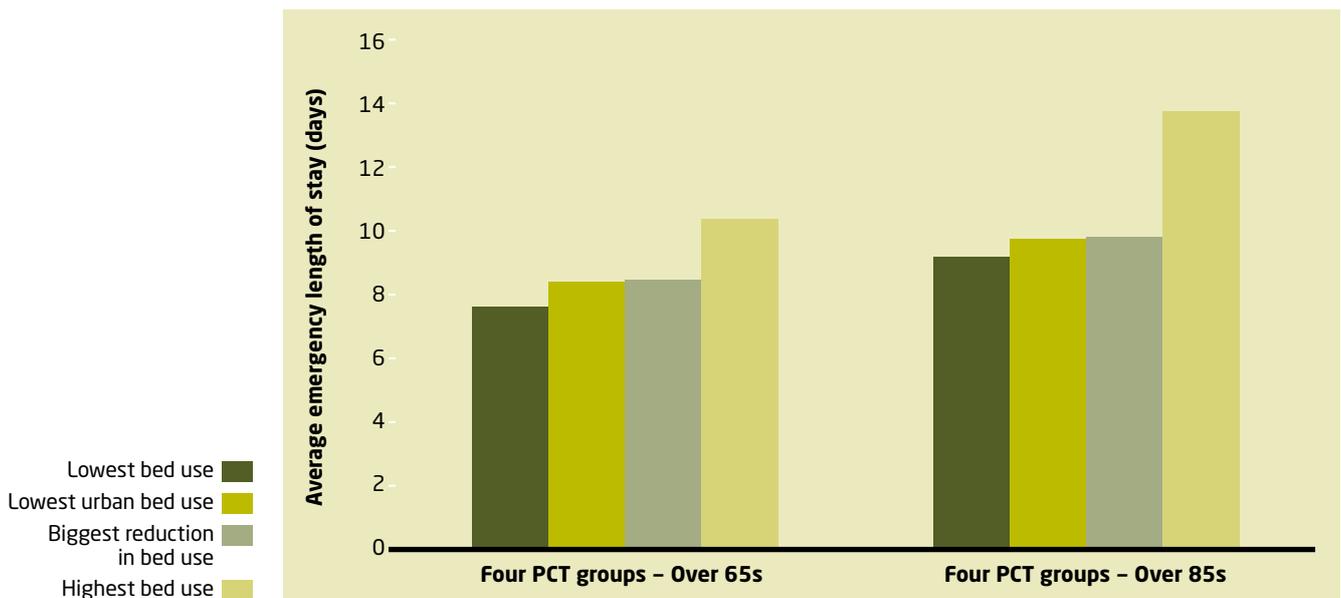
Overall, for these four groups of PCTs, rate of admission is a greater driver of variance than across PCTs as a whole – 60 per cent versus 50 per cent.

**Figure 8** Needs-weighted emergency bed days per person over 65 per annum for the four groups of PCTs



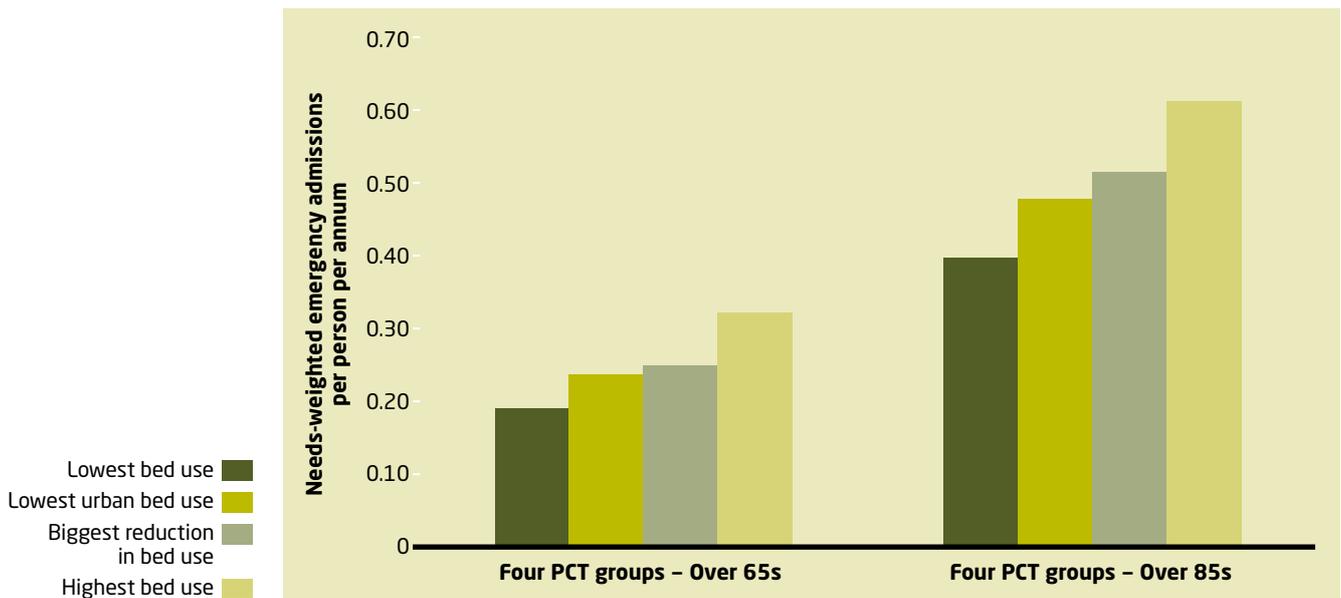
Source: The King's Fund analysis of HES data 2009/10, and ONS Mid-year population estimates 2007

**Figure 9** Average emergency length of stay for patients over 65 and over 85 for the four groups of PCTs



Source: The King's Fund analysis of HES data 2009/10, and ONS Mid-year population estimates 2007

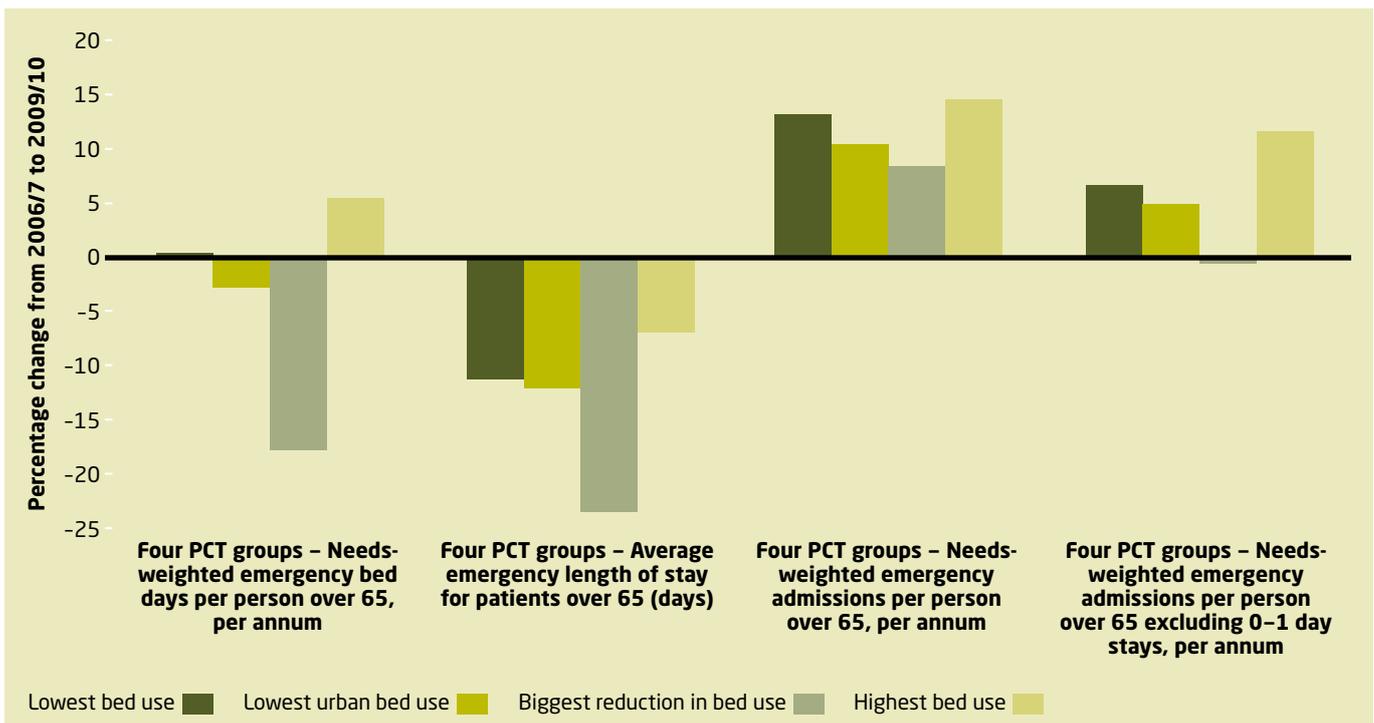
**Figure 10** Needs-weighted emergency admissions per person over 65 and over 85, per annum, for the four groups of PCTs



Source: The King’s Fund analysis of HES data 2009/10, and ONS Mid-year population estimates 2007

Figure 11, below, shows the relative changes in rates of bed use and rates of admission between the four groups in the period 2006/7 to 2009/10. The group with the greatest overall reduction in bed use saw a significant fall in length of stay, while rates of admission were at best curtailed. An intuitive explanation for this is that it is much harder to influence the behaviour of people across a system than to influence the processes within a hospital.

**Figure 11** Percentage change across range of measures for the four groups of PCTs between 2006/7 and 2009/10



Source: The King’s Fund analysis of HES data 2006/7 and 2009/10, and ONS Mid-year population estimates 2007

## Hospital (supply-side) factors

There is a large body of evidence which indicates that the way hospitals are run can influence the number of admissions and patients' length of stay. For example, the availability of a senior medical clinician to review patients in the emergency department has been shown to reduce inpatient admissions. White *et al* (2010) found that the presence of a senior physician resulted in a reduction in medical inpatient admissions of 12 per cent, and a reduction in admissions to the acute medical assessment unit of 21 per cent. A study looking at the use of senior surgeons and radiologists also saw a reduction in admissions (Cochrane *et al* 1998). The impact of senior decision-making in reducing admissions can be further enhanced by the use of dedicated assessment and observation wards (Cooke *et al* 2003).

There are a wide range of means by which patients' length of stay can be shortened. These include: frequent medical review/ward rounds (Allder *et al* 2010); specialist input and/or training in particular areas such as geriatrics, stroke, heart failure and dementia (Blue *et al* 2001; Lundström *et al* 2005; Foundation Trust Network 2012); patient and carer involvement in decision-making (Henderson *et al* 2011); good infection control (Ben-David *et al* 2009); and timely access to therapist assessment (Jasinarachchi *et al* 2009). As others have argued (Glasby *et al* 2006), the challenge in a hospital setting is to bring all these factors to bear when supporting the timely discharge of frail older people, managing the hospital as an overall system of care, rather than lots of discrete processes. Our analysis was not able to look at the internal operations of individual hospitals; instead, we have explored the impact of relative access to care.

## The impact of rurality

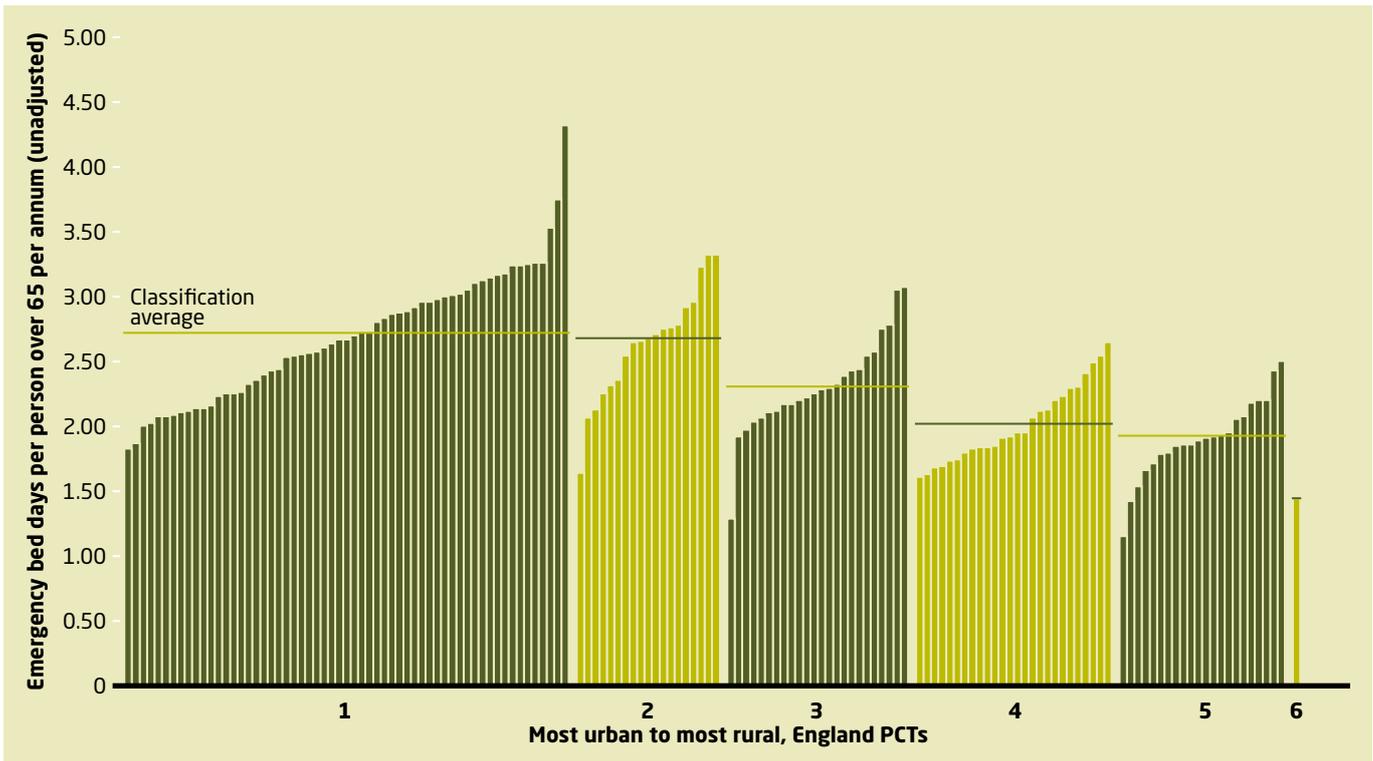
There is a high degree of association between emergency bed use and the degree of rurality, with rural populations having lower rates of use (*see* Figure 12, overleaf). This confirms previous research (Cook and Porter 1998), which showed an inverse relationship between the distance to hospital beds (both acute and non-acute) and bed use. Populations closer to services such as A&E are more likely to use them.

## Acute provider configuration

The proportion of care purchased by PCTs from their main provider gives one measure of the number of different providers available to the local population (*see* Figure 13, overleaf). The three PCT groups with either low use or the biggest reduction in use have a relatively high proportion of activity from their main provider (more than 72 per cent).

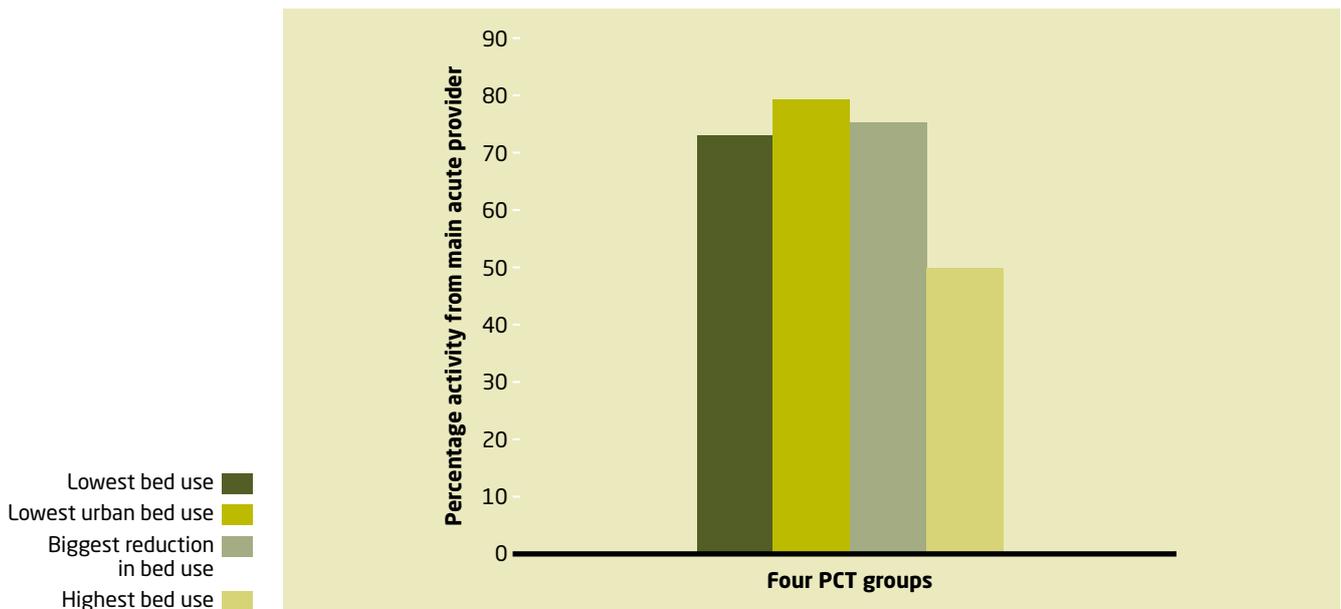
In contrast, the 10 PCTs with the highest bed use purchase (on average) only 50 per cent of their activity from their main provider. This seems to suggest some benefit arising from a closer relationship between PCT and provider, which may allow more integrated models of care. It may also be a proxy indicator for access to care – that is, the greater numbers of providers a PCT has, the greater their population's access to hospital care.

**Figure 12** Variation in emergency bed days per person over 65 per annum by DEFRA classifications of rurality



Source: Department for Environment, Food and Rural Affairs (DEFRA) Rural and countryside statistics; The King's Fund analysis of HES data 2009/10, and ONS Mid-year population estimates 2009

**Figure 13** Proportion of PCT activity from main acute provider for the four groups of PCTs



Source: Department of Health Exposition book 2009/10, Purchaser provider matrix

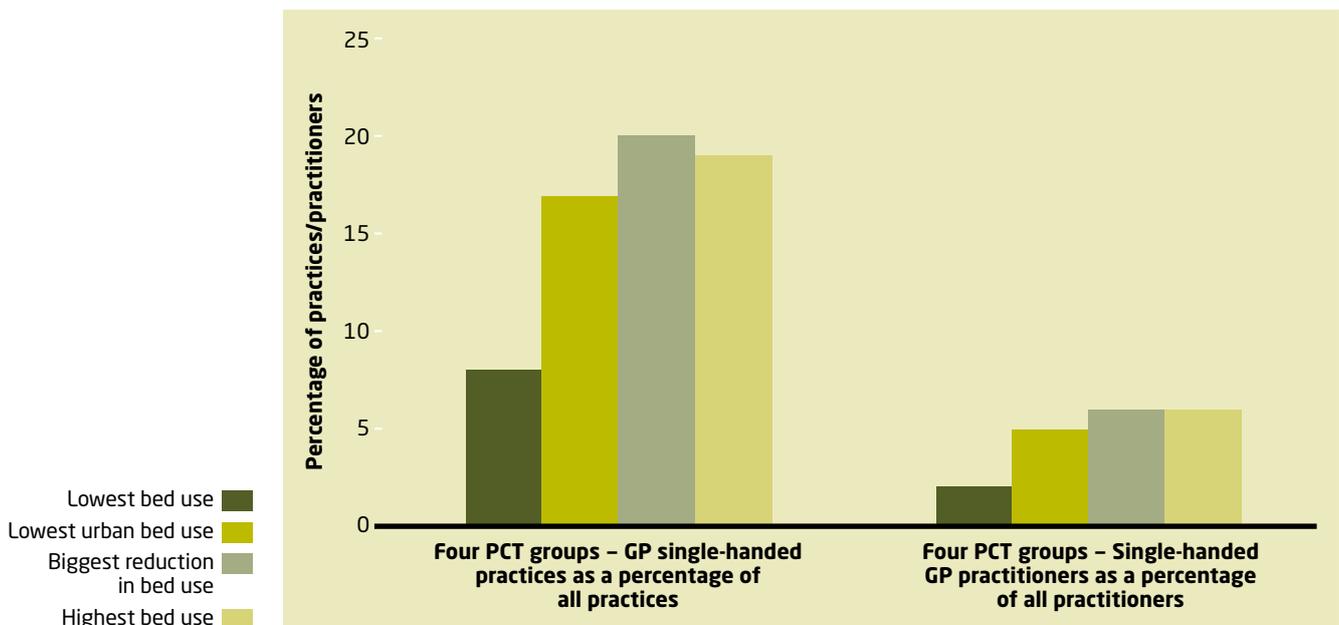
### Configuration of primary care

Our analysis of the four PCT groups found no association between the number of GPs per needs-weighted population and the use of acute beds. While the PCT group with the lowest bed use, has significantly fewer single-handed practices (*see* Figure 14, below), the other three groups have similar levels, suggesting that while this factor may play a part, it is not an over-riding determinant of bed use for this sample of 40 PCTs.

The evidence from other sources on the importance of primary care configuration as a driver is also mixed. Bankart *et al* (2011) found that larger practices and greater distance from hospital are correlated with lower rates of admission. This fits with our finding for the 10 PCTs with the lowest bed use, which are almost all rural. Purdy (2010) reported that larger practices are not necessarily associated with lower rates of admission, and that continuity of care may be a more important factor, which may be associated with a lower risk of admission for all age groups. Other studies emphasise individual GP factors as being a major driver of variation in rates of hospital admission. Ingram *et al* (2009) reported a fourfold variation in GP referrals into hospital at night, which they attributed to individual GPs' 'tolerance of risk'. Recent work for The King's Fund (Tian *et al* 2012) showed wide variation in rates of admission for ambulatory care-sensitive conditions, with significant opportunity to improve management by primary care.

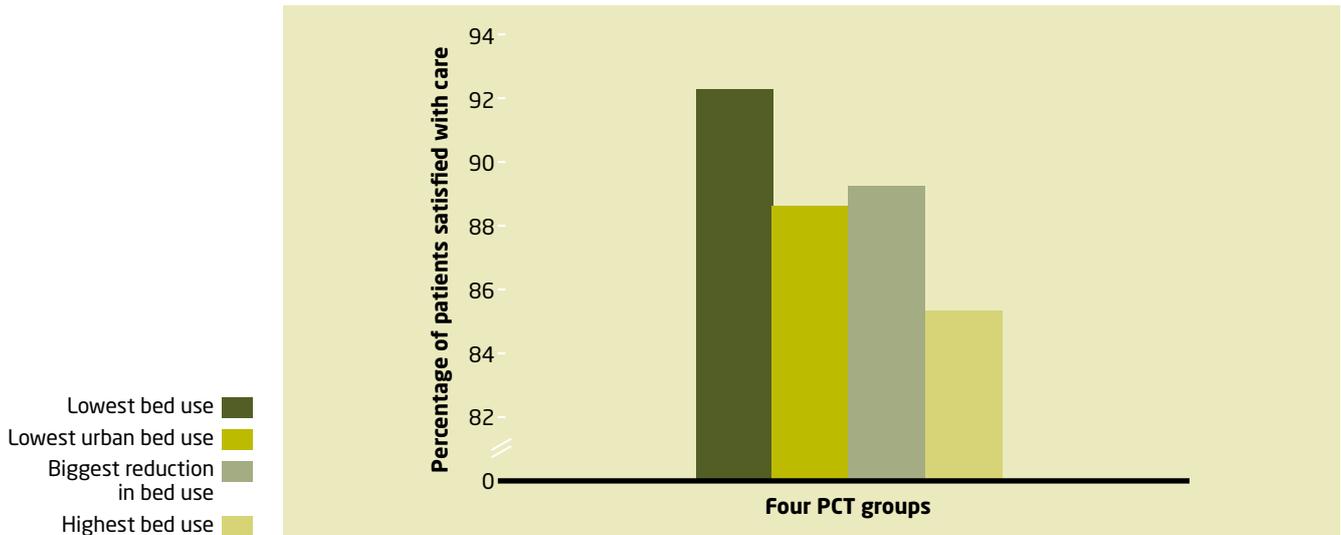
It is interesting to note that the PCT group with the lowest rate of bed days had higher satisfaction scores on the 2009/10 GP Patient Survey for the 'overall satisfaction with GP' question (*see* Figure 15 overleaf). The PCT group with the highest use of bed days scored 8 per cent lower on this measure.

**Figure 14** Proportion of single-handed GP practices/practitioners as a percentage of all practices/practitioners for the four PCT groups



Primary care data sources: The Information Centre, General Practice Staff 2010 detailed results, Tables, Selected Statistics by Primary Care Trusts: England; and the GP Patient Survey 2009/10

**Figure 15** Proportion of patients satisfied with the care they received at their GP surgery (GP Patient Survey 2009/10) for the four PCT groups



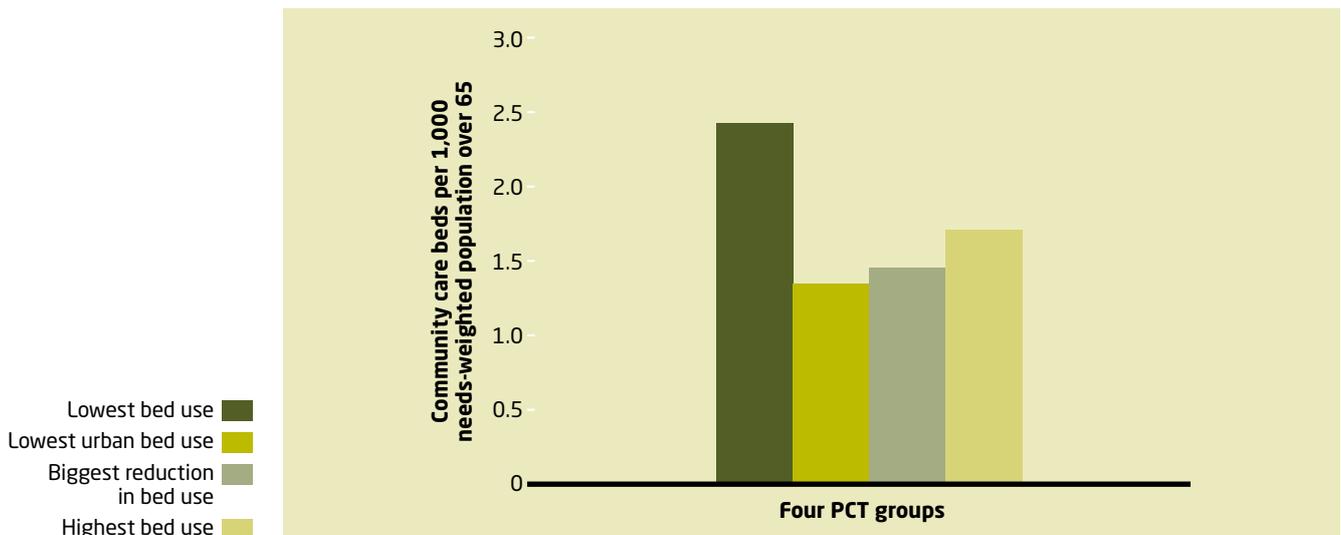
Primary care data source: The GP Patient Survey 2009/10

**Community care beds and services**

Our analysis found no clear link between acute bed use by people over 65 and the level of community care beds (*see* Figure 16 below). The data on community care beds needs to be treated with caution as there is no central collection of this data and we had to use a range of other less reliable sources.

Access to intermediate care beds and rehabilitation for patients over 65 can support early discharge and avoid admissions to hospital. A range of studies show that early discharge

**Figure 16** Community care beds per 1,000 needs-weighted population over 65 for the four PCT groups



Source: PCT websites and The King's Fund's manual search by PCT for all relevant literature, and ONS Mid-year population estimates 2009

to intermediate care can hasten recovery and reduce readmissions (Garåsen *et al* 2007; Young *et al* 2007). But while access to intermediate care beds brings benefits in terms of care quality and outcomes, there is little published evidence to suggest that their use generates overall savings (O'Reilly *et al* 2008). As Cook and Porter (1998) showed, there is only a very weak correlation between access to community beds and use of acute hospital beds.

Another issue is the degree to which services are co-ordinated and supported in an integrated model of care. A 2006 national survey of intermediate care found that it was fragmented and poorly integrated with other services, and that better integration would increase its ability to contribute towards the health and social care system as a whole (Barton *et al* 2006).

Department of Health policy (Department of Health 2006) has encouraged the proactive management of patients by case managers as a means to avoid hospital admissions and improve patient outcomes. A recent review (Ross *et al* 2011) suggested that when implemented effectively case management can improve outcomes and reduce hospital bed use. The evidence shows that key factors for success include:

- clarity about roles and responsibilities
- accurate case-finding
- a single point of access and joint care plan
- use of joint health and social care teams
- effective information systems and mechanisms for sharing information.

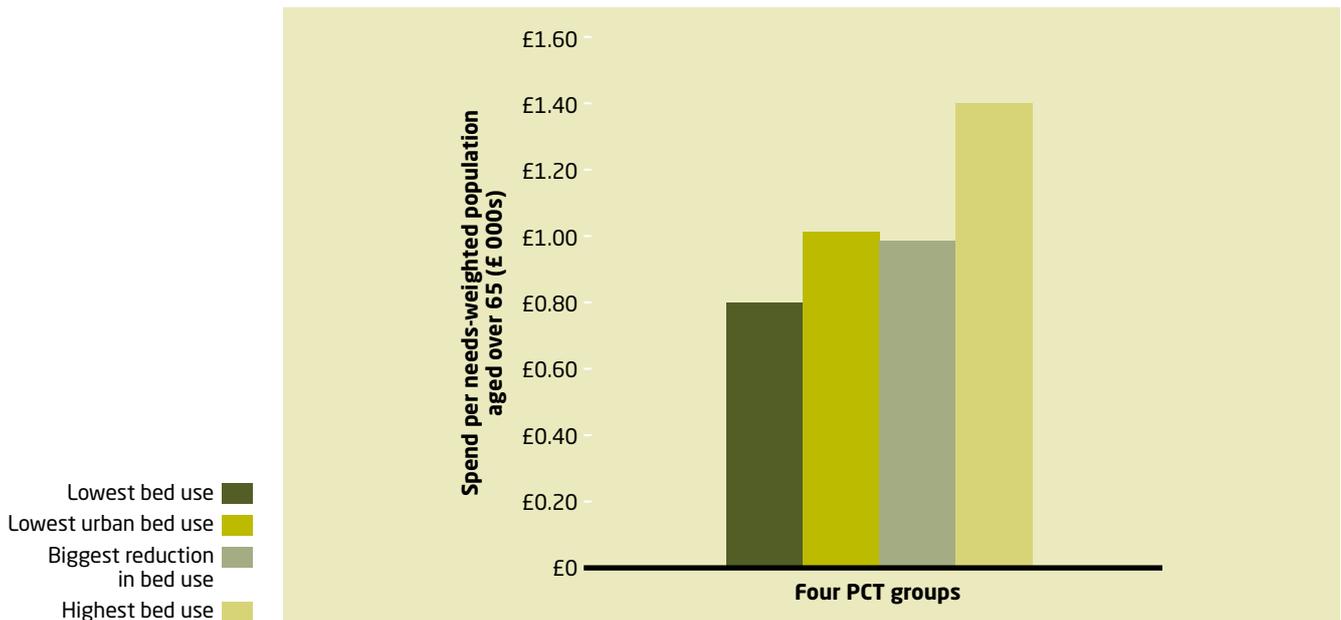
The available evidence seems to suggest that it is not the presence of community services per se that is critical, but how they operate. Where they are part of an integrated and well-targeted system of care, bed use tends to be lower. Our findings would appear to support this analysis.

### **Local authority and social care**

Our analysis found no clear relationship between investment in means-tested social care and the use of hospital beds (*see* Figure 17 overleaf). The local authority data also needs to be treated with caution, as much of the data is older and not concurrent with the data on bed use. In addition, data on care home places and home care packages relates only to means-tested provision, which will feature more heavily in deprived areas – a factor only partially adjusted for by needs weighting. With these caveats, it is interesting to note that the PCTs with the highest emergency bed use also have a higher number of intensive home care packages (*see* Figure 18 overleaf), higher overall spend per head of needs-weighted population, and lower satisfaction scores for home care (*see* Figure 19, p 15). Overall, we found no clear association between investment in social care and hospital bed use or the overall organisational assessment of the local authority.

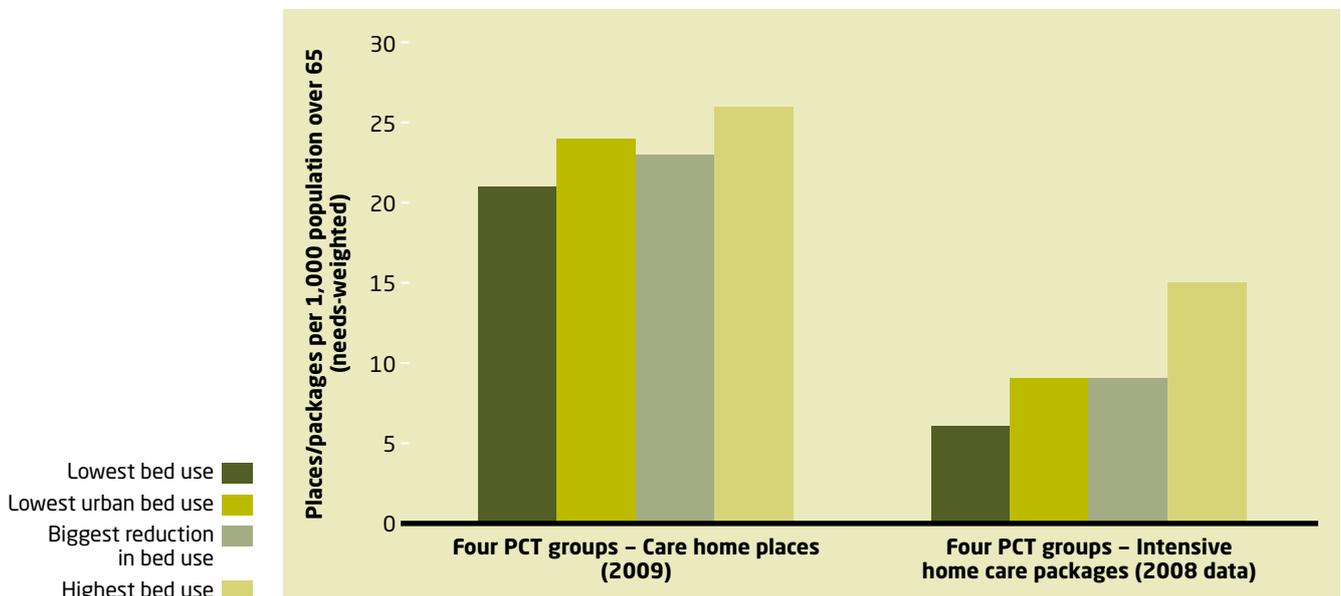
Forder (2009) found that for each additional £1 spent on care homes, hospital expenditure fell by £0.35. The Nuffield Trust (Bardsley *et al* 2010) also found some evidence that higher social care costs at the end of life tend to be associated with lower inpatient costs, although they do not confirm a direct causal link. Their results suggest that a reduction in the availability of local authority-funded social care may increase demand for hospital services. While this may be true, our analysis seems to suggest that it is the health supply-side factors that are the dominant driver of acute bed use.

**Figure 17** Local authority personal services spend per needs-weighted population aged over 65 for the four PCT groups (£ 000s)



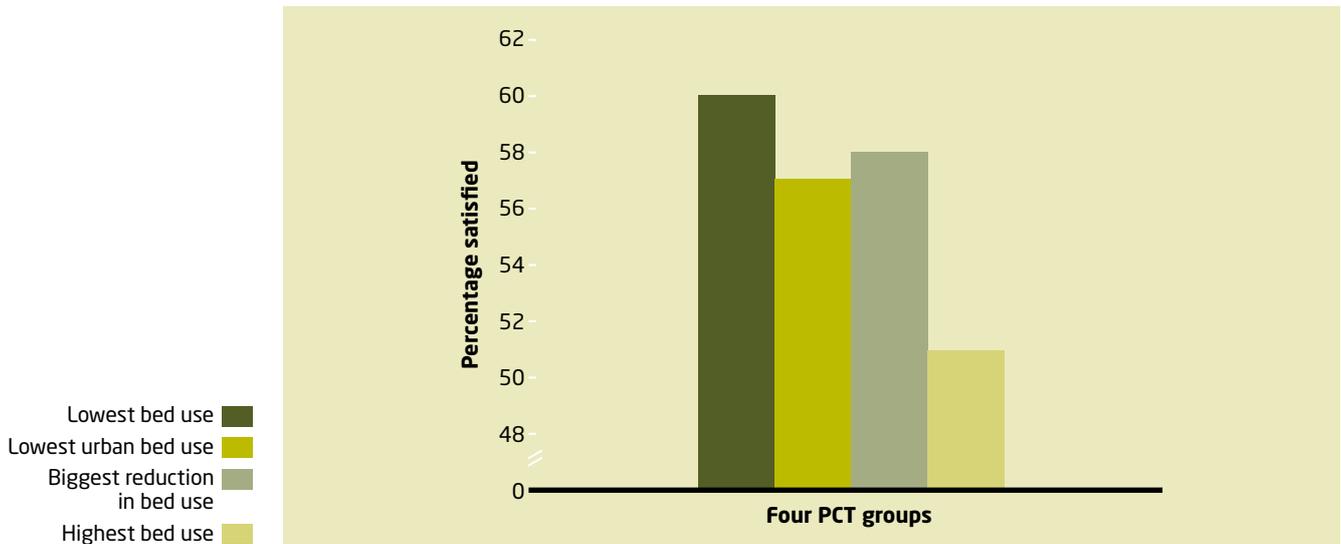
Source: The Information Centre, Personal Social Services Expenditure and Unit Costs: England 2009-10; and ONS Mid-year population estimates 2009

**Figure 18** Care home places with nursing, and intensive home care packages, per 1,000 needs weighted population over 65 for the four PCT groups



Sources: Care Quality Commission (CQC) database, at 8 July 2011. CQC Data Requests Team/Intelligence Directorate by correspondence. Care home service with nursing, number of places. Includes local authority, NHS, voluntary sector and private nursing homes and ONS Mid-year population estimates 2009

**Figure 19** Percentage of patients satisfied with social services care received in own home, from personal social services: home care users aged 65 or over, England 2008/9 survey, for the four PCT groups

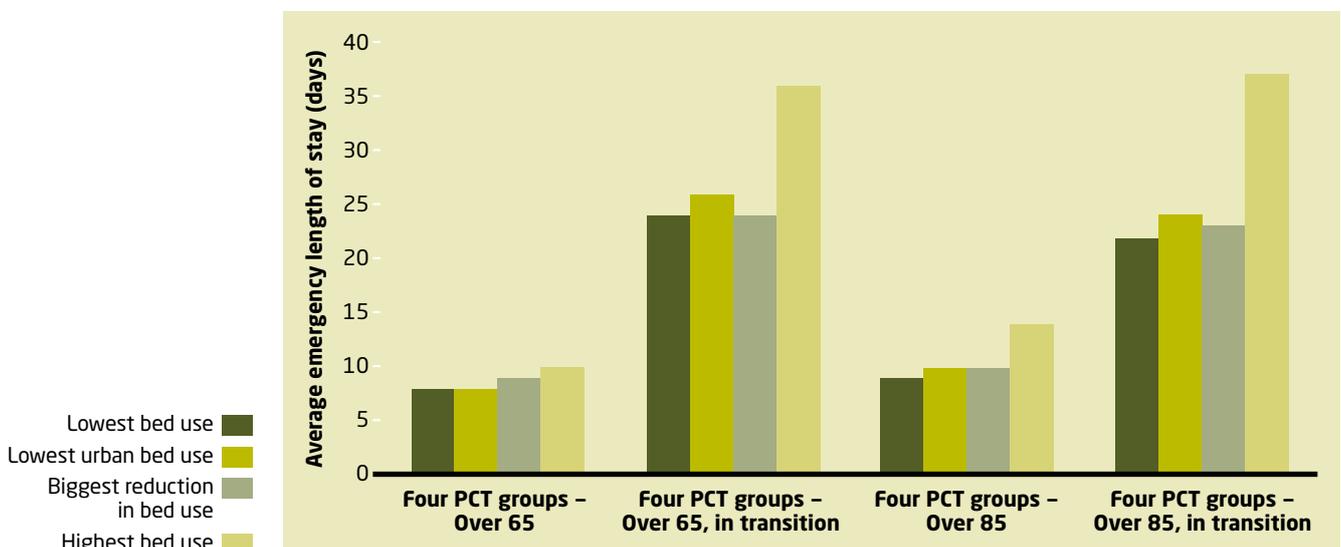


Source: Home Care Survey 2008/9 Council Annex tables U1 Question 1: 'Overall, how satisfied are you with the help from [Social Services] that you receive in your own home?' Answer very or extremely satisfied

### Hospital as the transition between home and supported accommodation

Our analysis revealed some striking differences between PCTs with high bed use and those with lower use or those that have achieved reductions in use, in terms of length of stay for patients over 65 for whom hospital was a transition between independent home living and supported accommodation (see Figure 20 below). Among PCTs with the highest use, the average length of stay for these patients was 36 days. The length of stay for similar patients in the other three PCT groups was at least nine days shorter. This pattern is repeated for patients over 85.

**Figure 20** Average emergency length of stay for patients for whom hospital is a transition between living at home and in supported accommodation for the four PCT groups



Source: The King's Fund analysis of HES data 2009/10

The above analysis focuses on patients for whom hospital represents a transition between living at home and moving into supported accommodation. While the proportion of patients in this category is relatively small, they stay in hospital longer – in some cases, more than three times the average length of stay for that age group. Quinn *et al* (2007) identified that there is a particular need to provide effective support for those older patients with prolonged stays in hospital.

This finding suggests that in areas with high bed use, support for over 65s making the transition to supported care is weak. It is interesting to note that areas with high bed use also have comparatively high social care spend. However, as Hospital Episode Statistics (HES) data does not tell us whether patients are self-funded or reliant on social care funding, it is difficult to identify the role that social care funding itself might play.

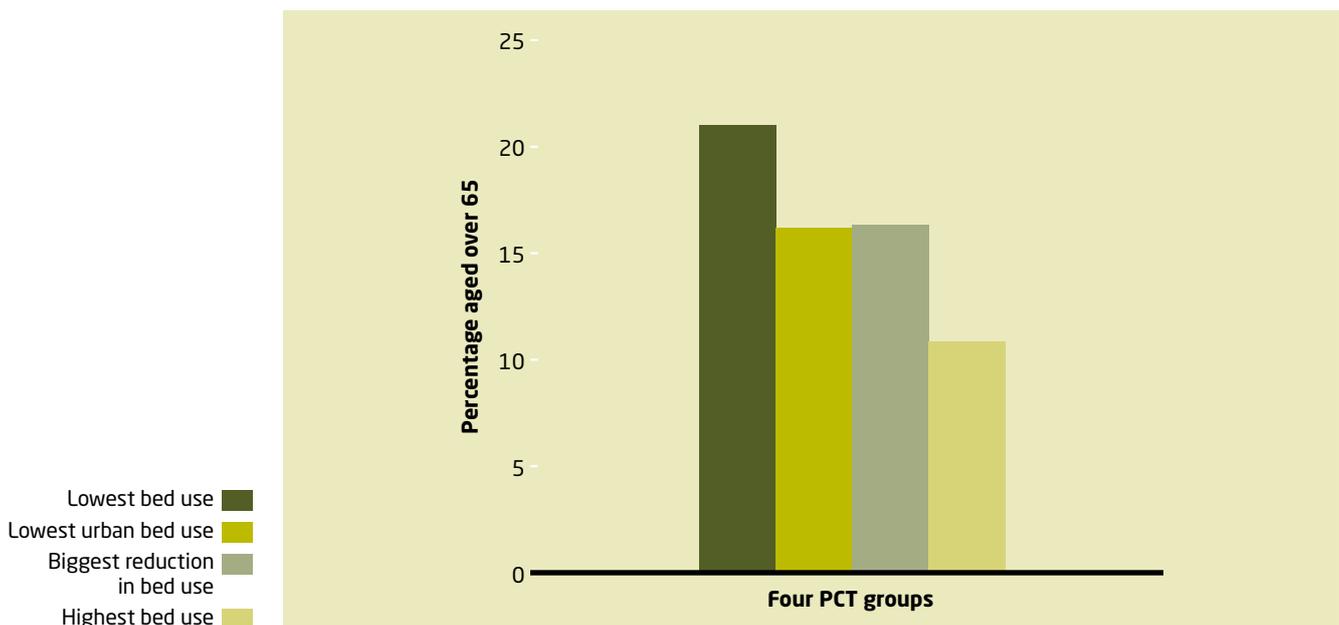
## System relationships

### Population age structure

A key finding in our analysis was the strong negative relationship between the proportion of older people in an area and the rate of acute bed use (*see* Figure 21 below). This seems to suggest that in areas with a relatively high proportion of older people, more attention may have been paid to service improvements such as the development of more integrated care models (*see* ‘Health and social care integration’ below).

The PCTs with the lowest use of emergency beds for over 65s have a much higher population of this age group, both proportionately and in absolute numbers. The proportion of the total PCT population aged over 65 in the lowest bed use group is almost double that in the highest group (21 per cent versus 11 per cent). The same is true for the population aged over 85. This suggests that, where people aged over 65 form a large part of the population served by a local health economy, issues related to the care of older people may be a higher strategic priority. There will also be a critical mass of service users in this age group, allowing more bespoke services to be developed.

**Figure 21** Percentage of PCT population aged over 65 for the four PCT groups



Source: ONS Mid-year population estimates 2009

## Health and social care integration

Many of the PCTs with the lowest rates of emergency bed use have been leaders in the integration of health and social care, but there does not seem to be one single common denominator they all share. Torbay, for instance, formed a care trust in 2005 with a single organisation responsible for both health and social care (Curry and Ham 2010; Thistlethwaite 2011). The remainder of the 10 PCTs with the lowest rates of adjusted emergency bed use are not care trusts, but several are also recognised leaders in the integration of health and social care. Hereford PCT has shared its chief executive (who has a social services background) with the local council since 2007 (Hetherington 2009). Devon PCT and county council have created a person-centred integrated health and social care service using a shared electronic care record and an integrated complex care team, which includes community nurses and social workers (O'Hara 2009). Norfolk, Torbay and Cumbria are among the 16 Integrated Care Pilots established by the Department of Health (Department of Health 2009). Devon, and Bradford and Airedale were both shortlisted in 2010 for an HSJ award for partnership working. Bromley established a formal partnership board to support joint working across health, social care and housing in early 2009.

A number of the PCTs, including Wolverhampton City, Harrow, and South Birmingham, have used Local Improvement Finance Trust (LIFT) schemes to support more integrated working across health and social care. Many of the PCTs with the highest use of emergency beds are also actively engaged in partnership working. However, our desk-based research suggests that for most, the engagement post-dates the period of our analysis.

We investigated whether any of the other five care trusts in 2009/10 stood out for their performance (see Table 1 below). Of these, only one has a rate of adjusted emergency bed use below the median – North East Lincolnshire, one of our 10 PCTs that have recently achieved significant reductions in bed use over the past three years.

**Table 1** English care trusts: key indicators

	Total population	PCT population over 65	% population over 65	Urban/rural	Adjusted bed day rate	% change 2006/7 to 2009/10
Torbay	134,000	31,400	23	3	1.06	3.71
North East Lincolnshire	158,500	27,900	18	3	1.80	-18.44
Northumberland	311,100	61,200	20	4	2.39	-3.49
Solihull	205,200	37,700	18	2	2.76	0.69
Bexley	225,900	36,100	16	2	2.96	23.88

(Urban/rural classification based on the scale of 1 (major urban) to 6 (major rural), see Figure 12, p 10)

Source: The King's Fund analysis of HES data 2009/10, and ONS Mid-year population estimates 2007

The variation in outcomes achieved by the five care trusts listed in Table 1 is supported by a recent National Institute for Health Research (NIHR) Service Delivery and Organisation (SDO) programme report evaluating approaches to reducing emergency bed use in nine different local authorities (Henderson *et al* 2011). This found that there was no simple association between the model of governance adopted within study sites and the outcomes achieved. The report concluded that:

*A number of mechanisms need to be brought together to achieve change and there is not just one governance structure that can be relied upon to produce the stated outcomes. Central targets and incentives are necessary to focus action, networks are essential to*

*negotiate cross-cutting problems, whilst the mechanisms put in place to meet any targets (which are the local interventions) need to move away from the usual scatter-gun approach of large numbers of ‘boutique’ pilot projects to focus on a smaller number of services that can be mainstreamed.*

(Henderson *et al* 2011, p 23)

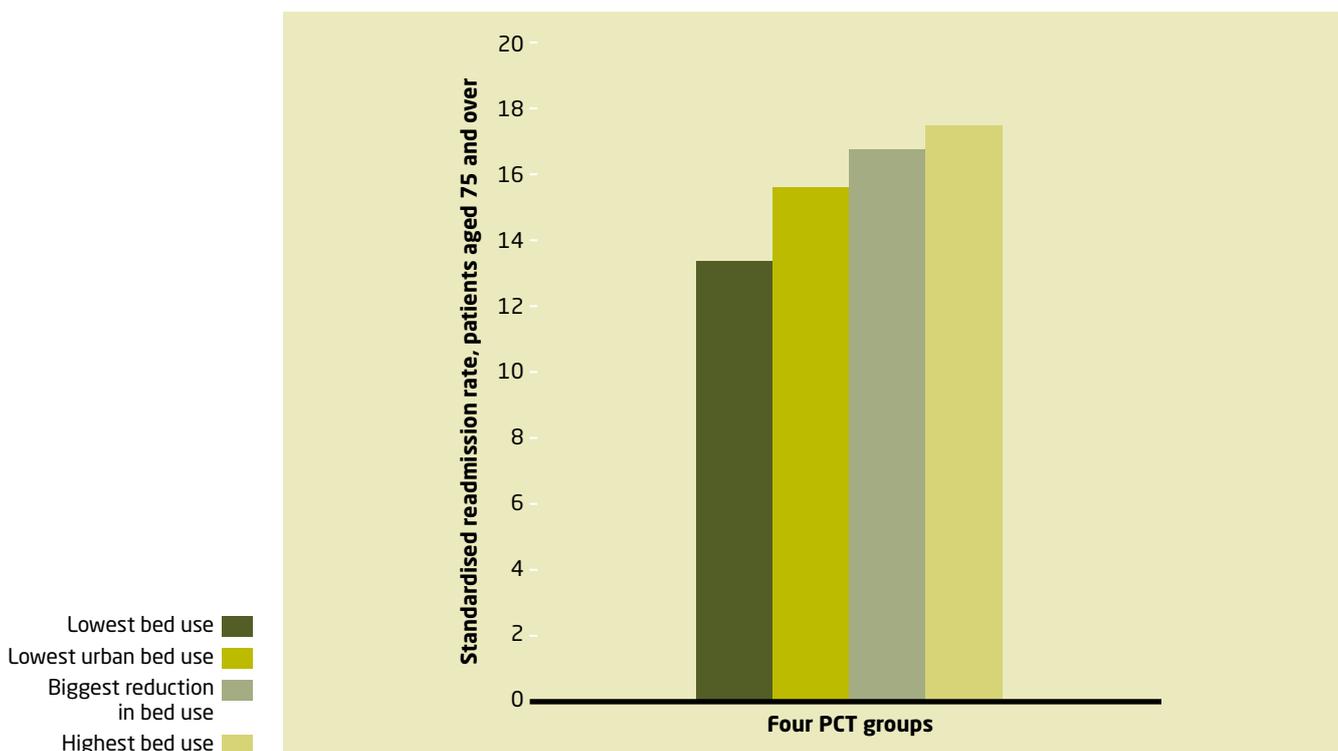
Another critical element appears to be strong links between the community intervention and hospital-based services. A good example of this is the Mobile Acute Care for the Elderly (MACE) model developed in Canada (Farber *et al* 2011), in which a multidisciplinary team, including a specialist geriatrician, specialist nurse, and social worker, supports patients and their carers in hospital as well as in the community. The intervention improves outcomes for patients (better functioning and less likelihood of being admitted to residential care) as well as reducing hospital costs and length of stay.

### Acute provider performance

Pressure on acute hospitals to reduce bed use could present risks to patient experience and result in higher rates of readmission. We analysed data on the patient experience and readmission rates to see if we could find evidence of this among the 40 PCTs we studied.

Readmission rates for patients over 75 (*see* Figure 22 below) were highest for the PCT group that also had the highest bed use. One hypothesis for low bed use would be that it results from inappropriately short lengths of stay and discharging patients too soon. If this were the case, the areas with low bed use would have high rates of readmission, but they do not. So, is whatever is keeping people out of hospital in the first place also stopping them from needing readmission? There is mounting evidence that readmission rates are linked just as much to community factors as they are to hospital factors.

**Figure 22** Standardised readmission rate for patients aged 75 and over for the four PCT groups



Source: The Information Centre Indicator Portal, ‘Emergency readmissions to hospital within 28 days of discharge: indirectly standardised percent, 75+ years’

Trust-based data on the patient experience (data provided by the Care Quality Commission) was also mapped to PCTs according to their acute care purchasing patterns to give average scores for each of the four PCT groups. These scores suggested that performance was the same or slightly better among PCTs with the lowest emergency bed use. Neither of these findings – on the patient experience and readmission rates – shows a significantly worse performance, as might be feared.

We also looked at the overall proportion of total admissions that are emergency admissions for each of the four PCT groups, to assess whether this was a factor driving variation. We found no significant difference in overall proportion of emergency admission between the four PCT groups, and so draw the conclusion that this is not a factor explaining any differences between them.

## Conclusion

Our analysis demonstrates a significant opportunity to reduce the overall rate of use of emergency hospital beds by people over 65 while at the same time not threatening and potentially improving the quality of patient care.

Factors such as rurality (which reduces patients' geographical proximity to hospitals) and deprivation have a significant impact on whether communities can address these issues. However, the variation within each of the six rurality classifications (*see* Figure 12, p 10) shows that it is possible to achieve significant reductions in bed use even if the major drivers are pushing in the other direction.

Our analysis also challenges some commonly held assumptions about how the configuration of primary and social care and the volume of care available outside hospital influence emergency admissions and bed use.

Ian Philp, formerly the National Clinical Director for Older People, recently underlined the importance of more integrated, 'whole system' working (Philp 2012). He has suggested four principles to improve the delivery of care for older people.

- Choose to admit only those frail older people who have evidence of underlying life-threatening illness or need for surgery. They should be admitted, as an emergency, to an acute bed.
- Provide early access to an old age acute care specialist, ideally within the first 24 hours, to set up the right management plan.
- Discharge to assess as soon as the acute episode is complete, in order to plan post-acute care in the person's own home.
- Provide comprehensive assessment and reablement during post-acute care to determine and reduce long-term care needs.

Those PCTs that have shown commitment to integration over a period of time demonstrate good results and much lower use of emergency hospital beds. However, the mixed picture on care trusts shows that organisational integration alone will not deliver improved performance. Our analysis, along with other evidence, suggests that the key to improvement lies in changing ways of working across a system rather than piecemeal initiatives. A set of unaligned projects will not produce system-wide results. This is a challenging message in the context of the significant organisational upheavals under way, but it confirms evidence from other sources that organisations need to prioritise 'whole system' approaches and working if they are to deliver the long-term policy aspiration of a real shift from hospital to community-based care.

## References

- Allder S, Silvester K, Walley P (2010). 'Managing capacity and demand across the patient journey'. *Clinical Medicine*, vol 10, no 1, pp 13–15.
- Bankart MJ, Baker R, Rashid A, Habiba M, Banerjee J, Hsu R, Conroy S, Agarwal S, Wilson A (2011). 'Characteristics of general practices associated with emergency admission rates to hospital: a cross-sectional study'. *Emergency Medicine Journal*, vol 28, pp 558–63.
- Bardsley M, Georghiou T, Dixon J (2010). *Social Care and Hospital Use at the End of Life*. London: Nuffield Trust. Available at: [www.nuffieldtrust.org.uk/our-work/projects/social-care-and-hospital-use-end-life](http://www.nuffieldtrust.org.uk/our-work/projects/social-care-and-hospital-use-end-life) (accessed on 11 June 2012).
- Barton P, Stirling B, Glasby J, Hewitt G, Jagger C, Kaambwa B, Martin G, Nancarrow S, Parker H, Parker S, Regen E, Wilson A (2006). *A National Evaluation of the Costs and Outcomes of Intermediate Care for Older People*. Birmingham: University of Birmingham and University of Leicester. Available at: [www.birmingham.ac.uk/Documents/college-social-sciences/social-policy/HSMC/research/intermediate-care-older-people.pdf](http://www.birmingham.ac.uk/Documents/college-social-sciences/social-policy/HSMC/research/intermediate-care-older-people.pdf) (accessed on 11 June 2012).
- Ben-David D, Novikov I, Mermel LA (2009). 'Are there differences in hospital cost between patients with nosocomial methicillin-resistant *Staphylococcus aureus* bloodstream infection and those with methicillin-susceptible *S. aureus* bloodstream infection?' *Infection Control and Hospital Epidemiology*, vol 30, no 5, pp 453–60. PubMed PMID: 19344266.
- Blue L, Lang E, McMurray JJ, Davie AP, McDonagh TA, Murdoch DR, Petrie MC, Connolly E, Norrie J, Round CE, Ford I, Morrison CE (2001). 'Randomised controlled trial of specialist nurse intervention in heart failure'. *British Medical Journal*, vol 323, no 7315, pp 715–8.
- Cochrane RA, Edwards AT, Crosby DL, Roberts CJ, Lewis PA, McGee S, Meecham-Jones S, Jones A (1998). 'Senior surgeons and radiologists should assess emergency patients on presentation: a prospective randomized controlled trial'. *Journal of the Royal College of Surgeons of Edinburgh*, vol 43, no 5, pp 324–7.
- Cook PJ, Porter L (1998). 'Community hospitals and district general hospital medical bed use by elderly people: a study of 342 general practitioner beds in Oxfordshire'. *Age and Ageing*, vol 27, pp 357–61.
- Cooke MW, Higgins J, Kidd P (2003). 'Use of emergency observation and assessment wards: a systematic literature review'. *Emergency Medicine Journal*, vol 20, pp 138–42.
- Curry N, Ham C (2010). *Clinical and Service Integration: The route to improved outcomes*. London: The King's Fund.
- Department of Health (2010) 'Average daily number of available beds, by sector, England, 1987–88 to 2009–10'. Department of Health website. Available at: [www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/@ps/@sta/@perf/documents/digitalasset/dh\\_133690.xls](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/@sta/@perf/documents/digitalasset/dh_133690.xls) (accessed on 6 July 2012).
- Department of Health (2009). *Integrated Care Pilots: An introductory guide* [online]. Available at: [www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_106207](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_106207) (accessed on 11 June 2012).
- Department of Health (2006). *Our Health, Our Care, Our Say: A new direction for community services*. Cm 6737. London: Department of Health.

- Farber JI, Korc-Grodzicki B, Du Q, Leipzig RM, Siu AL (2011). 'Operational and quality outcomes of a mobile acute care for the elderly service'. *Journal of Hospital Medicine*, vol 6, no 6, pp 358–63.
- Forder J (2009). 'Long-term care and hospital utilisation by older people: an analysis of substitution rates'. *Health Economics*, vol 18, no 11, pp 1322–38.
- Foundation Trust Network (FTN) (2012). 'FTN Benchmarking: Driving improvement in elderly care services'. FTN Briefing. Available at: [www.foundationtrustnetwork.org/resource-library/ftn-benchmarking-elderly-care-services-briefing-2012/](http://www.foundationtrustnetwork.org/resource-library/ftn-benchmarking-elderly-care-services-briefing-2012/) (accessed on 12 June 2012).
- Garåsen H, Windspoll R, Johnsen R (2007). 'Intermediate care at a community hospital as an alternative to prolonged general hospital care for elderly patients: a randomised controlled trial'. *BMC Public Health*, vol 7, p 68.
- Glasby J (2003). *Hospital Discharge: Integrating health and social care*. Oxford: Radcliffe Publishing.
- Glasby J, Littlechild R, Pryce K (2006). 'All dressed up but nowhere to go? Delayed hospital discharges and older people'. *Journal of Health Services Research & Policy*, vol 11, no 1, pp 52–8.
- Henderson C, Sheaff R, Dickinson A, Beech R, Wistow G, Windle K, Ashby S, Knapp M (2011). 'Unplanned admissions of older people: the impact of governance'. Final report. National Institute for Health Research (NIHR) Service Delivery and Organisation programme, Project 08/1618/136, HMSO. Available at: [www.netscc.ac.uk/hsdr/files/project/SDO\\_FR\\_08-1618-136\\_V01.pdf](http://www.netscc.ac.uk/hsdr/files/project/SDO_FR_08-1618-136_V01.pdf) (accessed on 12 June 2012).
- Hetherington P (2009). 'Total commitment', *The Guardian*, 18 November. Available at: [www.guardian.co.uk/society/2009/nov/18/local-government-pct-services-partnership](http://www.guardian.co.uk/society/2009/nov/18/local-government-pct-services-partnership) (accessed on 12 June 2012).
- Hoogerduijn JG, Schuurmans MJ, Duijnste MS, de Rooij SE, Grypdonck MF (2007). 'A systematic review of predictors and screening instruments to identify older hospitalized patients at risk for functional decline'. *Journal of Clinical Nursing*, vol 16, no 1, pp 46–57.
- Hospital Episode Statistics 2009/10, The King's Fund Analysis, HES Time series 2009/10.
- Ingram JC, Calnan MW, Greenwood RJ, Kemple T, Payne S, Rossdale M (2009). 'Risk taking in general practice: GP out-of-hours referrals to hospital'. *British Journal of General Practice*, vol 59, 558, e16–e24.
- Jasinarachchi K, Ibrahim I, Keegan B, Mathialagan R, McGourty J, Phillips J, Myint P (2009). 'Delayed transfer of care from NHS secondary care to primary care in England: its determinants, effect on hospital bed days, prevalence of acute medical conditions and deaths during delay, in older adults aged 65 years and over'. *BMC Geriatrics*, vol 9, p 4. doi:10.1186/1471-2318-9-4.
- Lafont C, Gérard S, Voisin T, Pahor M, Vellas B; Members of I.A.G.G./A.M.P.A Task Force (2011). 'Reducing "iatrogenic disability" in the hospitalized frail elderly'. *The Journal of Nutrition, Health & Aging*, vol 15, no 8, pp 645–60.
- Lundström M, Edlund A, Karlsson S, Brännström B, Bucht G, Gustafson Y (2005). 'A multifactorial intervention program reduces the duration of delirium, length of hospitalization, and mortality in delirious patients'. *Journal of the American Geriatrics Society*, vol 53, no 4, pp 622–8.
- O'Hara P (2009). 'Transforming health and social care'. *British Journal of Healthcare Computing* [online]. Available at: <http://www.bj-hc.co.uk/archive/features/2009/901001.htm>

O'Reilly J, Lowson K, Green J, Young JB, Forster A (2008). 'Post-acute care for older people in community hospitals – a cost-effectiveness analysis within a multi-centre randomised controlled trial'. *Age and Ageing*, vol 37, no 5, pp 513–20.

Philp I (2012). 'Four principles to improve the care of older patients'. *Health Service Journal*, 10 May, p 24.

Poteliakhoff E, Thompson J (2011). *Emergency Bed Use: What the numbers tell us*. Data briefing. London: The King's Fund. Available at: [www.kingsfund.org.uk/publications/emergency\\_bed\\_use.html](http://www.kingsfund.org.uk/publications/emergency_bed_use.html) (accessed on 12 June 2012).

Purdy S (2010). *Avoiding Hospital Admissions: What does the research evidence say?* London: The King's Fund. Available at: [www.kingsfund.org.uk/publications/avoiding\\_hospital.html](http://www.kingsfund.org.uk/publications/avoiding_hospital.html) (accessed on 12 June 2012).

Quinn MP, Courtney AE, Fogarty DG, O'Reilly D, Cardwell C, McNamee PT (2007). 'Influence of prolonged hospitalization on overall bed occupancy: a five-year single-centre study'. *QJM, An International Journal of Medicine*, vol 100, no 9, pp 561–6. doi:10.1093/Qjmed/Hcm064.

Ross S, Curry N, Goodwin N (2011). *Case Management: What it is and how it can best be implemented*. London: The King's Fund. Available at: [www.kingsfund.org.uk/publications/case\\_management.html](http://www.kingsfund.org.uk/publications/case_management.html) (accessed on 12 June 2012).

Thistlethwaite P (2011). *Integrating Health and Social Care in Torbay: Improving care for Mrs Smith*. London: The King's Fund. Available at: [www.kingsfund.org.uk/publications/integrating\\_health\\_1.html](http://www.kingsfund.org.uk/publications/integrating_health_1.html) (accessed on 12 June 2012).

Tian Y, Dixon A, Gao H (2012). *Emergency Hospital Admissions for Ambulatory Care-Sensitive Conditions: Identifying the potential for reductions*. Data briefing. London: The King's Fund. Available at: [www.kingsfund.org.uk/publications/data\\_briefing.html](http://www.kingsfund.org.uk/publications/data_briefing.html) (accessed on 12 June 2012).

Wennberg JE, Gittelsohn A (1982). 'Variations in medical care among small areas'. *Scientific American*, vol 246, no 4, pp 120–34.

White AL, Armstrong PA, Thakore S (2010). 'Impact of senior clinical review on patient disposition from the emergency department'. *Emergency Medicine Journal*, vol 27, no 4, pp 262–5, 296.

Young J, Green J, Forster A, Small N, Lowson K, Bogle S, George J, Heseltine D, Jayasuriya T, Rowe J (2007). 'Postacute care for older people in community hospitals: a multicenter randomized, controlled trial'. *Journal of the American Geriatrics Society*, vol 55, no 12, pp 1995–2002.

## About the authors

**Candace Imison** is Deputy Director of Policy at The King's Fund. Since joining the Fund she has published on a wide range of topics including polyclinics, community health services, workforce planning and referral management.

Candace came to the Fund from the NHS, where she was Director of Strategy in a large acute trust. She worked on strategy at the Department of Health between 2000 and 2006. Candace joined the NHS in 1987 and has held a number of senior management and board level roles within NHS providers and commissioners. She is currently a non-executive director of an acute trust in South West London.

Candace holds a Masters degree in health economics and health policy from Birmingham University. Her first degree was from Cambridge University, where she read natural sciences.

**Emmi Poteliakhoff** was a research fellow at The King's Fund on secondment from her role as an economic adviser at the Department of Health, where her work encompassed patient choice, performance benchmarking and health care for socially excluded groups. Before joining the Department of Health in 2003, she worked at the Homerton Hospital in East London, where she led a project investigating communication problems with local GPs. Emmi read economics at Cambridge University and completed the dual London School of Economics and Columbia University Master of Public Administration programme in 2007.

**James Thompson** is a Data Analyst in the Policy Directorate at The King's Fund. He is working across a variety of topics looking to inform and comment through the use of quantitative data.

James has a BSc in Management Science from the University of Stirling and an MSc in Operational Research from the University of Strathclyde. Before joining the Fund, James worked as a Data Analyst at Information Services Division NHS Scotland, Dr Foster Intelligence and most recently Humana Europe.

## Acknowledgements

We would like to thank our reviewers for their helpful contributions and feedback: Sasha Karakusevic, Director of Strategy (South Devon Healthcare Community), Torbay Care Trust, NHS Devon and South Devon Healthcare NHS Foundation Trust; Mike Davidge, Head of Measurement and Improvement Advisor, NHS Institute for Innovation and Improvement; Nigel Edwards, Senior Fellow, The King's Fund.

ISBN 978-1-85717-641-4



---

The King's Fund  
11-13 Cavendish Square  
London W1G 0AN  
Tel 020 7307 2400

Registered charity: 207401  
[www.kingsfund.org.uk](http://www.kingsfund.org.uk)

---

The King's Fund is a charity that seeks to understand how the health system in England can be improved. Using that insight, we help to shape policy, transform services and bring about behaviour change. Our work includes research, analysis, leadership development and service improvement. We also offer a wide range of resources to help everyone working in health to share knowledge, learning and ideas.

---