State of the health system
Beds in the NHS: UK
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Introduction

Pressures on NHS hospital beds are well documented. Our members report substantial problems and strains within the bed system; recent media coverage has also raised similar concerns. Although not the only indicator, data on how beds are used within the NHS provide an excellent insight into the healthcare system.

This paper presents NHS bed data from across the UK in one place. The data demonstrates the increasing pressures on the system in each nation. It provides evidence of the underlying cracks within the NHS, such as funding constraints, changes and increases in demand, disjointed care and workforce pressures. The evidence will inform the debate and help build a sustainable future for the NHS.

The first section of this paper identifies core themes from a literature search on beds within healthcare systems. This section provides context for the data and should therefore be read alongside the data section to improve understanding of the evidence. The next section sets out our asks on how beds are used within the NHS. The main section of the paper sets out the data from each nation on beds. A technical note on the data and a glossary of the definitions used can be found in the annex.
Bed pressures: causes and consequences

Bed numbers across advanced economies have fallen throughout the last three decades.\(^1\) Improvements in healthcare have greatly reduced the length of hospital stays and increased the number of day-case patients.\(^2\) However, even supported by well-funded, integrated primary and community care, and an appropriate mix of health care staff, hospital beds remain a fundamental resource that underpin all health systems.

The use of beds within healthcare systems is inherently complex, with multiple overlapping causes of pressure points. The discussion below summarises the main themes that arose from a literature search on beds within healthcare systems. It provides context for the UK data presented later in the paper, highlighting the mismatch in the supply and demand for beds. It explains the concept of bed occupancy and factors that impact this, such as variations in demand and length of stay, before describing current occupancy levels. The section concludes by outlining the major implications that bed pressures cause for doctors, patients and the quality of their care.

### Demand for beds

**Demand for beds is rising, but the number of beds is falling across the UK.**

**Demand for beds peak at different times of the day, week and year.**

**To minimise the impact on occupancy, there must be sufficient beds to accommodate variation.**

**Faster turnover times can help hospitals use beds more efficiently.**

**Average length of stay has fallen.**

**Bed pressures: causes**

In the UK, at a time when demand for NHS care is growing, the number of beds has continued to decline significantly.\(^3\) Overall, the number of people attending emergency departments, and from there being admitted into hospital, is increasing.\(^4\) Increased demand, which is closely linked to the rising prevalence of long-term conditions, is coupled with a growing number of older people — the highest users of beds — who often have multiple, complex conditions, including dementia.\(^5\)

Bed occupancy — the percentage of beds in use — is a key consideration when thinking about hospital beds. Hospitals cannot operate at 100% occupancy, as some spare bed capacity is needed to accommodate natural variations in demand and ensure patients can ‘flow’ through the system. If hospitals only planned their bed requirements against the average demand level, then whenever demand increased above the average there would be a shortage of beds.\(^6\) Variations in staffing must also be taken into account, as beds cannot be safely filled without appropriate staffing levels.

Demand for beds peaks at different times of the day, week and year. To minimise the impact on occupancy, there must be sufficient beds to accommodate these peaks. In most hospitals there is a mismatch between peak arrival times (morning) and peak discharge times (late afternoon).\(^7\) This means there must be enough beds during the day for both new patients and those being discharged later that day. Very few patients will be discharged overnight, so there must also be sufficient beds to manage this. Across the week there is variation too, with the most arrivals on a Monday and fewer discharges at the weekend.\(^8\) Finally, there is seasonal variation, with the well-known challenges that winter presents resulting in higher numbers of emergency admissions.\(^9\)

There is a time delay every time a bed is vacated, while the bed is cleaned, prepared for a new patient and transfer and admission processes are completed. This is known as the turnover interval time. Maximising the efficiency of the process is key. As occupancy on wards increases this becomes harder and harder for staff, but factors such as early discharge planning and early review by a senior clinician can help.\(^10\) Patients with the shortest length of stay (the majority of patients) are more resource intensive, as the same turnover interval occurs regardless of length of stay.\(^11\) Minor changes to their length of stay or turnover interval can have a major effect on overall bed availability.\(^12\)

Average length of stay has fallen considerably due to improvements in surgical procedures, technology and community-based care.\(^13\) However, it does vary significantly between patients, with older people experiencing notably longer stays.\(^14\)
But, delayed discharge is a major issue, particularly for older people.

Long stays can also be exacerbated by delayed discharge (or transfer of care). This is where patients remain in hospital when they are medically fit to be discharged. It commonly affects older people. While delayed discharges only account for a relatively small percentage of beds overall, the number of days each hospital bed is unnecessarily occupied is one of the factors driving up bed occupancy rates. Unnecessary longer stays also lead to worse health outcomes for older people and can increase their care needs after leaving hospital. These trends highlight the well-documented challenges facing social care, although awaiting access to other in-hospital services remains a considerable problem.

The optimum occupancy level varies between different healthcare settings.

Returning to bed occupancy, hospitals are commonly told to aim for a rate of 85%. This follows a study in the late nineties, which found that bed shortages and periodic crises were increasingly likely to put health services above this rate. Others have pointed out this research was based on a particular set of circumstances — an emergency bed pool of around 200 beds — and therefore generalising the findings to all acute hospitals must be done with care, as different sizes and types of bed pools have different optimum average occupancy levels. Smaller bed pools and more critical beds, such as those in intensive care, must operate with a lower average occupancy level to maintain availability.

However, regardless of the specific target, the key point is that hospitals are increasingly operating at very high levels of occupancy, particularly during the winter months. Furthermore, the main measurement of occupancy is recorded at midnight — not the peak time for demand — so in reality many hospitals are frequently operating close to or above 100% occupancy during the day.

Bed pressures: consequences

The implications of this are widespread. A lack of available beds creates backlogs, contributing to the widely reported delays in emergency departments. This affects both patients waiting to be seen, and so-called trolley waits — patients who have been seen and need to be admitted, but have to wait for a bed to become available. Indeed, recent research shows that hospitals with the highest occupancy rates are furthest from the four hour waiting time target. The demand for beds also leads to cancellation of elective operations; while this frees up beds, it delays the care that other patients need and have often been waiting for many weeks.

Patients who do get a bed can still suffer adverse consequences from high occupancy rates. When there is excess demand for beds, patients are commonly placed on clinically inappropriate wards. This can affect patients’ experience and the quality of care they receive, while placing extra demands on healthcare staff. In order to juggle bed availability, patients can be moved to a number of different beds during their stay in hospital, which can be distressing, particularly for older people. Each bed move adds an extra turnover interval and adds an extra day to patients’ length of stay. The pressure that shortages create also has a damaging impact on staff morale, recruitment and retention, which in turn impacts negatively on patient care.

The risk of hospital acquired infections is a concern.

There is a range of evidence that high occupancy increases the rate of hospital acquired infections, which had in recent years reached a more stable level, and has been highlighted by doctors as a particular concern. Infections are not only a risk to patients, but inevitably lead to temporary bed or ward closures, furthering the occupancy problem.

Pressure on staff to free up beds can risk patient safety.

Finally, there is a concern among doctors and other healthcare professionals that staff may feel pressured to free up beds. In the worst case scenario this can lead to patients being discharged before it is safe or appropriate to do so. Not only does this compromise patients’ care at the time, but evidence suggests it leads to an increased chance of emergency readmission, which is something that has increased notably in recent years. Bed shortages are not just affecting patient care and experience; as doctors on the front line report, shortages are risking patient safety.
Pressures within mental health services are particularly acute

Service and bed availability is a substantial problem within mental health care, with substantial reductions in the number of beds over the last two decades. Mental health bed occupancy is increasingly high. Delayed discharge is a notable issue for patients with mental health problems, many of whom can have long stays in acute care settings. The main reasons for delayed discharge are a lack of suitable community services or facilities to support patients at home, or the lack of an available bed within a community or specialist facility. Bed shortages can result in mental health patients, including young people, being sent far away from their home and support network. ‘Out-of-area’ placements are costly for the NHS and doctors are deeply concerned about the impact they can have on vulnerable patients. Indeed, the added distress can have profound, and unfortunately fatal, consequences. Similarly distressing is the fact that in some cases young people are placed on adult wards.

There is also an association between the reduction in mental health beds and the increase in the number of patients admitted following detention under the mental health act. Evidence suggests that some patients are being sectioned in order to secure a bed, which would be otherwise unavailable to them.

Our asks

The BMA has previously raised concerns about the impact of bed pressures on patient safety and care in the NHS across the UK. Our members remain deeply worried and their concerns are supported by the available data: the reduction in bed numbers needs to stop until clear bed plans are in place.

The BMA is calling for NHS bed plans that:

− account for future service demands and changes in the population health needs
− are sustainably funded and staffed, not driven by financial targets and ensure resource reflects the priorities of the NHS
− are focused on quality care, safety and the patient experience
− support health professionals by introducing measures to avoid premature discharge as a result of bed resource constraints
− take a holistic approach to care, where the health and social care systems work together to deliver a joined up service for the patient — for example, ensuring there is appropriate funding and support for community care so patients can leave hospital without delay
− prioritise providing mental health care close to patients’ home. Care close to home means patients have access to their local support network of friends and family

We also ask that clear consistent data is collected within the NHS. This project has identified significant gaps and inconsistencies in the data collected on beds within each nation. For example, the lack of data on cancelled operations because of bed shortages or the number of patients being placed in clinically inappropriate wards. Without data it can be difficult to fully understand how the NHS is functioning, where the pressure points are and what mitigating actions can be taken.

a For example, ensuring NICE guidelines are fully implemented to improve the transition between inpatient hospital setting to the community with social care needs.
Bed data

The following section presents the bed data available in each nation across the UK. The data will be vital for informing discussions on how to build a sustainable future for the NHS. It is important however that the bed data is reviewed within context. The data therefore should be considered alongside the section on bed pressures, causes and consequences, so the context and implications can be fully understood.
England bed data

In 2000 there were an average of 3.8 beds per 1,000 people. This had dropped to 2.4 beds by 2015.

Between 2006/07 and 2015/16 the number of overnight beds has decreased by over a fifth.

Between 2000/01 and 2015/16 the number of day beds as a proportion of total general and acute beds has increased from 5% to 10%.

Between September 2010 and September 2016 there has been a 12% increase in hospital admissions, but a 41% increase in the number of delayed bed days.

In November 2016, 14.8% of patients spent more than 4 hours waiting for a hospital bed, having been seen in A&E.

Average length of stay has decreased, from 7.1 days in 2004/5 to 5 days in 2015/2016.

Between December 2014 and November 2015 mental health patients under the age of 18 spent a total of 17,788 bed days on an adult ward.

Between March and October 2016 an average of 726 mental health patients had been given out of area placements each month.
The average number of hospital beds in England has decreased significantly over time. Mental health beds have seen a particularly large decline. Source: NHS England; published 24/11/16.

Average bed occupancy rates have increased over time, with rates for general and acute wards, and mental health, now peaking at over 90%. Source: NHS England; published 24/11/16.
The number of day beds is increasing (as is the number of day case admissions). However, the occupancy rate for day beds has still increased. Source: NHS England; published 24/11/16.

The percentage of people waiting more than four hours in A&E has increased over the last five years following an earlier period of stability. Source: NHS England; published 12/01/17.
Not only has the number of people attending A&E increased over the last five years, but so too has the proportion of those people being admitted. Source: NHS England; published 12/01/17

The number of patients waiting more than four hours for a bed having been assessed in A&E — so called ‘trolley waits’ — has increased notably over the last five years. It reached the highest level to date in November 2016. Source: NHS England; published 12/01/17
Over the last five years there have been increases in the number of admissions via A&E and the number of elective admissions not involving an overnight stay (elective day cases). The number of ordinary elective admissions (where patients do stay in overnight) and emergency admissions not via A&E has remained stable. Source: NHS England; published 12/01/17

Length of stay has decreased for all patients, to an average of five days. Patients aged over 75 have seen the biggest change. Source: NHS Digital; published 25/11/2015
The number of days beds are occupied by patients who are experiencing a delayed discharge or transfer of care is increasing.
Source: NHS England; published 08/12/16

Over the last three years, ‘awaiting care in a patient’s own home’ has been responsible for the largest percentage increase in delayed days. It is now the single biggest reason for delays. Source: NHS England; published 08/12/16
The turnover interval between the discharge of one patient and the admission of the next patient to the same bed is reducing. 
Source: NHS England; published 24/11/16

The percentage of emergency readmissions, occurring within 30 days of the patient’s last, previous discharge increased between 2005/06 and 2011/2012. Data is still collected, but has not been published since 2012. Publication should restart, as it is a potentially important indicator that may be associated with premature discharge. Source: data.gov.uk; published 02/2014
The rates of hospital acquired infections vary in England. Rates of MRSA and C.Difficile have decreased, but rates of E.Coli and MSSA are increasing. Source: Public Health England; published 07/07/16

The number of cancelled elective operations has increased over the last five years. As expected, the peaks in cancellations match the peaks in occupancy levels. Source: NHS England; published 11/11/16
In 2005 there were 4.7 beds per 1,000 of population. By 2015 this had dropped to 3.1.

Hospital admissions increased by over 10% between 2005/06 and 2015/16.

Between 2005/06 and 2015/16 there was a 28% reduction in the average number of available hospital beds.

The turnover interval between two patients using the same bed has decreased from 1.6 days in 2005/06 to 1.1 days in 2015/16.

In 2005/06 the average length of a hospital stay was 8.5 days. By 2015/16, this had significantly reduced to 5.9 days.

In 2015/16 average occupancy of mental health beds reached an eight year high of 91.9%.

The number of care packages available for mental health patients fell by almost a third between 2007/08 and 2014/15.
The average number of available hospital beds has reduced by 28% over the last 10 years. Occupancy rates have varied over the same period, but they have consistently remained above 80%. Source: Northern Ireland department of health; published 04/08/16

Of the 28% reduction in the number of available hospital beds, learning disability, mental health and elderly care beds have seen the greatest proportional fall. Source: Northern Ireland department of health; published 04/08/16
There has been a significant reduction for all patients in the average length of hospital stay over the last 10 years. Source: Northern Ireland department of health; published 04/08/16

The turnover interval between two patients using the same bed has decreased in recent years, from 1.6 days in 2005/06 to 1.1 days in 2015/16. Source: Northern Ireland department of health; published 04/08/16
Broadly speaking all hospital admissions have increased over the past 10 years. Between 2005/06 and 2015/16 there has been an overall increase of 10% in total hospital admissions. Over the same time period, the proportion of inpatient admissions has decreased as the proportion of day cases has increased. Source: Northern Ireland department of health; published 04/08/16

All episodes of acute care for those aged over 70 years has increased since 2011/12. Older patients therefore now require more hospital resources than was previously the case. Source: Northern Ireland department of health; published 20/10/16
Graph 7 – A&E attendances

Total attendance at A&E has increased by 8.8% since 2005/06. Source: Northern Ireland department of health; published 24/06/16

N.B. A review attendance, is any subsequent attendance for the same condition at the same emergency care department. Review attendances should be inclusive of both planned (excluding non-A&E outpatient clinic attendances) and unplanned review attendances.

Graph 8 – The wait in A&E

Between 2008/09 and 2015/16 the proportion of patients waiting between four and 12 hours for treatment in A&E more than doubled. The proportion of patients waiting 12 or more hours increased by a factor of 10 between 2007/08 and 2011/12, but has since fallen. Source: Northern Ireland department of health; published 24/06/16

N.B. Does not include planned review attendances
The number of available mental health beds has declined significantly since 2005/06. Despite the consistently diminishing number of mental health beds, occupancy fell between 2007/08 and 2012/13. However in the three years since it has risen to an eight year high of 91.9%. Source: Northern Ireland department of health; published 04/08/16

The number of care packages available for mental health patients fell by almost a third between 2007/08 and 2014/15. Publication of data relating to the number of mentally ill patients in residential accommodation stopped after 2012/13, in the six years prior to that numbers had been consistently falling. Source: Northern Ireland public health agency; published 23/11/16
In 2010 18% of emergency admissions were readmissions. By 2015/16 this was 20.5%.

Population data is from the Office of National Statistics. Unless stated otherwise, all data is published by ISD (Information Services Division) Scotland.

In 2006 there were 5.4 hospital beds per 1,000 population. In 2015 this had dropped to 4.2.

83% hospital bed occupancy rate in 2015/16.

In March 2016 patients spent 46,309 days in a hospital bed as a result of delays in discharge.

One in five A&E attendances led to a hospital admission in April 2015.

33% reduction in the number of available psychiatric hospital beds in Scotland since 2007.

There has been a 20% reduction in the total number of available hospital beds between 2006/07 and 2015/16.

The average length of stay for transfer patients has reduced by 6 days in the last 5 years.

A quarter of these days were because patients were waiting for a place in a specialist residential facility.

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In Q2 2011/12 the turnover interval between patients on acute wards was approximately 1.2 days. By Q2 of 2015/16 it was 0.9 days.

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In 2010 18% of emergency admissions were readmissions. By 2015/16 this was 20.5%.

In Q2 2011/12 the turnover interval between patients on acute wards was approximately 1.2 days. By Q2 of 2015/16 it was 0.9 days.
The total number of available hospital beds in NHS Scotland is reducing. Between 2006/07 and 2015/16 there was a 20% reduction. Source: ISD; published 04/10/16

Hospital bed occupancy is going up across Scotland, there are however significant differences between health boards. Source: ISD; published 04/10/16
Bed occupancy levels vary across Scotland. In 12 of the 14 health boards, occupancy of total available beds increased between 2010/11 and 2015/16. Source: ISD; published 04/10/16

The number of available psychiatric hospital beds in Scotland has significantly reduced. There has been a 33% reduction in the number of beds available. The average psychiatry hospital bed occupancy level has been increasing at the same time. Source: ISD; published 04/10/16
The proportion of A&E attendances leading to hospital admission has increased. In April 2011 the number of patients being admitted to hospital from A&E stood at 21.6%, by April 2015 this had risen to 26.1%. Source: ISD; published 01/11/16

There is a clear correlation between the number of patients waiting over four hours in A&E because of a shortage in hospital beds and high bed occupancy levels. Source: ISD; data relating to the four hour wait was provided to the BMA on request.
Since 2010/11, the proportion of emergency admissions that are patients being readmitted within 30 days of being discharged has increased by almost 2.5%. However there is variation between health boards. Source: ISD; published 04/10/16 (FOI ref: FOI-2016-000374)

Over the last five years the average length of stay in all hospital specialities has remained broadly the same. The average length of stay for transfer patients however has reduced in the last five years by six days. The reasons behind this reduction are unclear from the data. It could reflect an improvement in care as patients are treated in the correct speciality more effectively.

Source: ISD; published 04/10/16
The number of bed days occupied by people experiencing a delay in their discharge from hospital is improving, following a peak in December 2014. Source: ISD; published 08/11/16

The proportion of delayed discharges from hospital because a patient is waiting for a place in a specialist residential facility has increased. Source: ISD; published 08/11/16
The turnover interval between the discharge of one inpatient on acute wards and the admission of the next inpatient to same bed has reduced, but has stabilised over the last two years. Source: ISD; published 20/12/16.

N.B. ISD does not publish data for turnover interval, so these figures have been calculated internally using the appropriate datasets available.
Wales bed data

In 2000 there was an average of 5 beds per 1,000 people in Wales. In 2015 this had dropped to 3.5.

Population data is from the Office of National Statistics.

There was a 20% reduction in mental health beds between 2009/10 and 2015/16.

Source: NHS Wales Informatics Service.

An increasing percentage of patients admitted to hospital are older people.

In 2005/06 people aged over 85 accounted for 8% of hospital admissions. In 2015/16 this had grown to 10.2%.

Source: NHS Wales Informatics Service.

In March 2016 23% of patients spent more than 4 hours in A&E. Almost 5% of patients were there between 8 and 12 hours.

Source: NHS Wales Informatics Service.

The turnover interval has fallen from 1.7 days in 2004/05 to 1 day in 2015/16.

Source: NHS Wales Informatics Service.

Average bed occupancy in 2015/2016 was 86.9%, the highest recorded level to date.

Average length of stay has fallen from 8 days to just under 7 days between 2005/06 and 2015/16.

Source: NHS Wales Informatics Service.

Over the same time period that equates to a 25% reduction in total beds.

Unless stated otherwise, data is published by StatsWales.
The total number of hospital beds in Wales is decreasing, while the average occupancy rate has increased markedly. Source: StatsWales; published 04/10/16

The number of beds has decreased in all health boards, although the size of the decrease does vary across Wales. Source: StatsWales; published 04/10/16

N.B. The data anomaly in 2009/10 may be related to the NHS restructure at this time.
Bed occupancy has increased in all but one health board. Occupancy reached the highest level on record in 2015/16 in the three largest health boards (Betsi Cadwaladr, Abertawe Bro Morgannwg and Hywel Dd), which together are responsible for over 50% of beds in Wales. Source: StatsWales; published 04/10/16

The number of overall A&E attendances has remained stable, although there is a clear seasonal pattern. Waiting times follow the same seasonal pattern, but have deteriorated, meaning more patients spend more than four hours in A&E. Source: StatsWales; published 15/11/16

N.B. A change in methodology between 2011/12 and 2012/13 means care should be taken when comparing data published before and after these dates.
The overall number of hospital admissions increased by 53,500 between 2005/06 and 2014/15. Over this period the percentage of emergency and elective admissions has remained broadly stable. Source: NHS Wales Informatics Service; published 11/01/17

Overall, the average length of stay for patients has fallen. However, it has increased for elective patients. Source: NHS Wales Informatics Service; published 11/01/17
Having stabilised after a period of decline the number of patients experiencing a delayed transfer of care stabilised has increased slightly over the last three years. There is also a degree of seasonal variability. Source: StatsWales; published 08/12/16

Issues relating to healthcare (e.g. awaiting medical assessment) and community care (e.g. home-care packages) remain the most common reasons for delayed transfers. The selection and availability of care homes are also notable causes of delay. Source: StatsWales; published 12/01/17
Graph 9 – Mental health beds

The number of available mental health beds has been steadily decreasing. Source: StatsWales; published 04/10/16

Graph 10 – Turnover interval

The turnover interval between the discharge of one patient and the admission of the next patient to the same bed is reducing. Source: NHS Wales Informatics Service; published 11/01/17

N.B. StatsWales ceased publishing these figures after 2011/12 – figures for the following years were therefore calculated internally
Annex A – Definitions

The purpose of this annex is to define a number of key terms which appear in the paper. Some definitions are consistent within all four nations, while some are nation-specific. Included within the latter category are a number of terms that appear broadly similar for every nation; however, small but crucial differences mean that they must be treated differently. The annex has been organised to reflect this fact.

The following definitions are consistent across all four nations:

**Day case**
A patient admitted electively to hospital with the intention of discharging them on the same day.

**Elective admission**
Patients admitted electively are those patients for whom treatment or care has been organised in advance. They are admitted to a hospital at an appointed time, as opposed to unscheduled admissions (eg emergencies or maternity patients). Subdivided into elective ordinary admissions (patients who occupy beds overnight) and elective day case admissions.

**Emergency readmission**
The number of people who returned to hospital as an emergency within 30 days of the last time they left hospital after a stay as a percentage of all admissions. Admissions for cancer and obstetrics are typically excluded as they may be part of the patient’s care plan.

**FCE (finished consultant episode)**
A finished episode of care under a consultant for either an inpatient or a day case, after which the patient is either transferred to another consultant or discharged.

**Length of stay**
The amount of time between the admission of patient and their discharge.

**Occupied bed day**
For wards open overnight an occupied bed day is defined as a bed which is occupied at midnight on the day in question. For wards open day only an occupied bed-day is defined as a bed in which at least one day case has taken place during the day. Occupied bed days are used to quantify the availability and use of beds over time. They are calculated by counting the number of days between the date of admission associated with the beginning of a patient’s spell of treatment and the date of discharge associated with the end of the same spell of treatment.

**Turnover interval**
The time between the discharge or transfer of a patient from a bed and the admission of a different patient to the same bed.
The following definitions are specific to each nation:

### England

**Available hospital beds**
The average number of beds which are available for patients to have treatment or care. Subdivided into overnight beds (counted at midnight) and day beds. It must only include beds in units managed by the provider, not beds commissioned from other providers.

**Delayed transfer of care**
A delayed transfer of care occurs when a patient is ready to depart from such care and is still occupying a bed. A patient is ready for transfer when: (a) A clinical decision has been made that patient is ready for transfer and (b) A multi-disciplinary team decision has been made that patient is ready for transfer and (c) The patient is safe to discharge/transfer.

**Escalation beds**
These are additional beds brought into service by a trust in order to accommodate extra patients in periods of high demand. They are included within the total number of available hospital beds and the rate of occupancy. Trusts often have an escalation plan for introducing these types of beds to ensure there is adequate staffing and facilities available.

**Occupancy**
The percentage of time that beds are occupied. Calculated by multiplying ‘average daily occupied beds’ by 100 and dividing by ‘average daily available beds’. For wards open overnight an occupied bed day is defined as one which is occupied at midnight on the day in question. For wards open day only an occupied bed day is defined as a bed in which at least one day case has taken place during the day. For issues arising from the way in which occupancy is measured, please consult the technical annex.

**Ordinary admission**
A patient not admitted electively, or any patient admitted electively in the expectation that they will remain in hospital for at least one night. Also included are patients expected to be discharged on the same day as their admission, but who then stay overnight. Measured by FCEs (defined in the first section of this annex).

**Non-elective admission**
Any emergency admission (ie one in which admission is unpredictable or short notice because of clinical need) or maternity admission. Measured by FCEs.
## Northern Ireland

### Available/occupied beds

The average number of available and occupied beds in wards that are open overnight, measured at midnight.

### Care packages

The form of care recommended through care management – packages can take the form of places in care homes or services provided to allow individuals to remain living independently in their own homes. HSCTs (health and social care trusts) carry out care management assessments to identify a person’s needs and determine the best form of care to meet those needs which is delivered in the form of a care package. Statistical information is collected on two types of care package: residential care and nursing home care.

### Inpatient admission

Inpatient admissions include both:
- patients admitted electively with the expectation that they will remain in hospital for at least one night, and
- non-elective admissions (eg emergency admissions).

A patient who is admitted with this intention but who leaves hospital for any reason without staying overnight is still counted as an inpatient. Day cases and regular attenders are not included.

### New, planned and review attendances at emergency medicine departments

A new attendance, or ‘first’ attendance, relates to any patient who presents without appointment to the emergency care department, the exception to this being unplanned re-attenders.

A planned attendances relates to any patient given a written appointment, date and time to return to the emergency care department planned review clinic. A review clinic is defined as any clinic held within the emergency care department irrespective of where the medical input is outsourced from.

A review attendance, is any subsequent attendance for the same condition at the same emergency care department. Review attendances should be inclusive of both planned (excluding non-emergency department outpatient clinic attendances) and unplanned review attendances.

### Non-elective/elective hospital admissions

Non-elective admissions refer to emergency and unplanned admissions and elective admission include all other types.

### Regular day and night attenders

A patient who is admitted electively and regularly for a planned sequence of days or nights and who returns home for the remainder of the 24 hour period. This method of admission is particularly common for renal dialysis and chemotherapy. Regular attenders have been included within the day case statistics for all programmes of care with the exception of acute services.
Scotland

**Available beds**
The average number of beds which are staffed and are available for the reception of inpatients (this includes borrowed and temporary beds, ie beds made available to a specialty/significant facility other than the specialty/significant facility to which they are allocated). The figures include NHS beds/patients in joint-user and contractual hospitals. A joint user hospital is a local authority institution in which accommodation is made available to NHS Boards under the terms of the National Assistance Act 1948. A contractual hospital is an institution where NHS Boards have arrangements with voluntary or private bodies for the use of beds or clinical facilities.

**Code 9**
This code was introduced for very limited circumstances where NHS chief executives and local authority directors of social work (or their nominated representatives) could explain why the discharge of patients was out with their control. Code 9 could include patients delayed because:
- There is no availability at the specialist facility to which they had been referred, and where an interim option is not appropriate
- Where an interim move is deemed unreasonable for that person
- Where an adult may lack capacity for safe discharge, as legislated for in the Adults with Incapacity (Scotland) Act 2000

**Delayed discharge**
A delayed discharge is a hospital inpatient who is clinically ready for discharge from inpatient hospital care and who continues to occupy a bed beyond the ready for discharge date.

**Multiple emergency admission**
This occurs when a patient has more than one unplanned continuous spell of treatment in a hospital within a year.

**Occupancy**
The percentage of available staffed beds that were occupied by inpatients during the relevant timeframe (quarterly or annually depending on the data release). Comparisons using data sets over different timeframes should be avoided.

**Transfer**
This is recorded when a patient who has already been admitted to hospital is either transferred between consultants, specialties or hospitals. Transfers are, however, counted as part of the same continuous inpatient stay.
Wales

**Admission episodes**
The first episode in a patient's spell of care under a given provider.

**Available beds**
Average number of staffed beds in which inpatients are being or could be treated in without any change in facilities or staffing being made.

**Delayed transfer**
Instances of people experiencing a delay in the arrangements for them to leave hospital. For example to go home, or to move to another more appropriate facility within the NHS, eg from an acute bed to a rehabilitation bed.

**Formal/informal admissions to mental health facilities**
People who are compulsorily admitted to hospital are called ‘formal’ patients and people who are admitted to hospital when they are unwell without the use of compulsory powers are called ‘informal’ patients.

**Hospital/provider spell**
A continuous period of time that an admitted patient (using a bed) spends in the care of one NHS health care provider. The care starts with an admission episode and ends in discharge, transfer to another NHS provider or death. Hospital/provider spells are subdivided into FCEs.

**Occupancy**
Average number of beds occupied by inpatients under the care of a consultant in a particular specialty.
Annex B – Technical note

The purpose of this annex is to highlight various issues and limitations that exist in relation to the data that has been used to compile this paper, as well as to try to pre-empt questions or observations that readers might have. All issues known to the authors of this paper are addressed in the following pages.

The variation in the quality of the data typically stems from changes in methodology and collection, significant restructures to the geographical makeup of services, or alterations to definitions or terms. As in the definitions annex, some of these points affect data across the UK, while the rest are specific to particular nations.

UK data issues

Comparability

Though there has been some work to improve comparability of data between nations (for example, episode based data in Northern Ireland can be compared with the equivalent hospital episode statistics data published annually in England), substantial differences in methodologies and data collection still remain; consequently it is inadvisable to attempt comparison between datasets from the four UK nations. Though in some instances an indicator might be defined in very similar terms, there are still likely to be fundamental differences underlying the way in which the data has been collected and presented (for example delayed transfers of care in England and Scotland: the English data concentrates on transfers and discharges, and thus includes patients delayed while awaiting further acute care; the Scottish data is limited to patients awaiting discharge, a fundamental difference in scope and focus).

Midnight census

National data on bed occupancy is based on whether the beds are occupied at midnight. Trusts and boards across the UK use the same measure, although some address this issue by counting patients at other times as well. Nonetheless, this raises the question to what extent the occupancy data is truly representative. At least one study argues that peak occupancy usually occurs at around 8am, and thus a midnight census is misleading, and does not account for an occupancy level that ebbs and flows throughout the day with the rise and fall of demand – hospitals can therefore approach and indeed exceed 100% occupancy during the day.

Population data

National population data is published by the Office for National Statistics, and mid-year estimates of the calendar year. Bed data, however, covers the financial year (April to March). In this report we have combined data covering two slightly different periods (January to December and April to March) – the figures of bed numbers per thousand population included in the report are therefore intended as guidelines to give a general sense of the figures only.
Nation-specific data issues

England

Bed data is collected and published by NHS England. Guidance on using the data can be found in the link in the endnote. 61

Annual/quarterly data
Following the last annual publication of overnight and day bed availability and occupancy data in 2009/10, subsequent publications occurred on a quarterly basis. Care should be taken, therefore, when comparing figures from before and after 2009/10. It should also be noted that any figures included in this report relating to bed availability and occupancy for whole years as opposed to quarters after 2009/10 are averages, which are taken from the four quarterly datasets released over the course of that year.

Delayed transfers of care
There are several notable issues regarding the quality of the data on delayed transfers of care. The Nuffield Trust has flagged the fact that there is a lack of clarity about the use of definitions, which could lead to providers defining delayed transfers (or the reasons for those delays) differently; in turn this could adversely affect the accuracy of the data. The data is also sub-divided into acute and non-acute, which is unique amongst the comparable datasets that measure key indicators in England — it is based on the nature of the care a patient receives, as opposed to the organisation at which it is delivered. No reason is provided as to why the data is organised in this way. As a result it has the potential to contribute to misinterpretation of the figures. Moreover, the data does not cover patients aged under 18, nor does it include transfers from one acute service to another. Following conversations with a number of NHS professionals, the King’s Fund also felt that there were variations in how local areas report delays. 62,63

Emergency medicine departments
There are three types of emergency departments in England: major emergency departments, single specialty units and minor injury units. All three are included in the data in the report. For a department to be classified within any of those three categories of emergency departments it must average over 200 attendances per month (though the number of departments treating fewer than 200 emergency patients a month is not published, we presume that it statistically insignificant).

Emergency readmission data
The publication of data relating to emergency readmissions ceased after the financial year ending in March 2012. Though the underlying data is still being collected, it has not been made available. The data has still been included in the report, as readmission is often cited as a considerable issue 64, and the fact the figures are no longer published is noteworthy in and of itself.

Geriatric medicine beds
Prior to 2010/11, the ‘general and acute’ category of beds were subdivided into two separate sectors: acute and geriatric. Following the changes to the publication of bed data implemented after 2009/10, the figures were only published for general and acute beds, and no distinction was made for geriatric beds. For the sake of consistency, the geriatric category has been excluded from any graphs in the report.

Mental health data
There are a number of issues with the quality and consistency of mental health data in England. Consequently there are substantial problems in terms of relating bed occupancy and availability to the treatment of patients with mental health illnesses. Notably there have been several significant changes to the available datasets which have created issues of comparability, which in turn precluded analysis of long term trends. In this report, we have used snapshots from periods in which there were no methodological changes instead where possible.
Regional restructure
Due to the restructures that took place within the NHS in 2006 and 2013, consistent regional data is largely restricted to data published between those two years. Previously the data had been organised by the 10 strategic health authorities, but following their abolition (and the creation of clinical commissioning groups) in 2013, the data was instead divided according to the 25 regional area teams. This presented problems with regard to how best to represent substantial amounts of data in an accessible way. Coupled with the fact that the regional data revealed very little of interest, we consequently decided not to use any regional data within the paper.

Turnover interval
Turnover interval is not presently published in England. Consequently figures were calculated internally using NHS England’s monthly hospital activity data and the widely agreed upon formula: (available bed days – occupied bed days)/inpatient discharges. The figures should therefore be used as a guideline to illustrate how turnover interval has changed in the past six years (and how it follows seasonal trends). In terms of understanding the data, a figure of 0.5 would indicate that half a day (12 hours) was the average amount of time between one patient being discharged from a particular bed and the admission of another patient to that same bed. Discharge can include a transfer to a separate bed in another ward, transfer to a different facility or the death of a patient.
Northern Ireland

The Department of Health is responsible for publishing data on beds. The link in the endnote offers some information about guidance for its use, and clarification of several key terms.\(^4\)

**Day cases**

Hospitals may have a number of beds in wards that are only open during the day; in the case of England, these figures are published separately to the overnight bed data. In Northern Ireland however, beds reserved for day care admission or regular day admission are not included in the data. This has negative implications for our ability to analyse the way in which acute care has changed within the timeframes of the available data.

**Delayed transfers of care**

There is no regularly published data for delayed transfers.

**Independent sector admissions**

From 2011/12, independent sector admissions are also included in data published relating to Northern Ireland, although these are not included in the general admissions total. This is reflected in the paper. This is because it was a priority for the health minister at the time.
Scotland

Bed data is collected and published by ISD (Information Services Division). The link in the footnote offers further information about methodology and definitions.44

Delayed transfers of care
Data for NHS Scotland looks at delayed discharges, as opposed to delayed transfers of care (so delays while waiting for transfer between hospitals are not counted within the data). One implication of that fact is that delay reasons such as awaiting further non-acute NHS care, one of the more frequently cited reasons in England, are not counted in Scotland as a delay to a patient’s discharge from hospital.67

There was also a substantial change to the publication of delayed discharge data in Scotland in July 2016, including revised data definitions and requirements. As a result, data published before the revisions cannot be compared to data published after.

Geographical restructure
In April 2014 boundary changes were implemented across Scotland. All data published by the ISD (Information Services Division) subsequent to the boundary changes take those changes into account, and are presented using the new boundaries. As a result, there are no issues in terms of comparing data published before and after the restructure.

Known data issues
Due to the implementation of new patient management systems in NHS Grampian and NHS Highlands, there are known issues with the quality of the data published by both boards. In some instances data has been suppressed entirely due to its unreliability. Care should therefore be taken when discussing data from either health board. For further information see point three in the ISD data issues and completeness document (which includes a more detailed analysis of the problems with data submissions from the aforementioned health boards).68
Wales

StatsWales publishes Welsh bed data, as well as several other key indicators. Relevant information is included in the metadata section.\(^4\)

**Community medicine beds**

Compared with other specialties or sectors, the number of community medicine beds in Wales is relatively small (there were fewer than 50 NHS-managed community beds from 2012/13 onwards). They have therefore been excluded from some charts as they represented a proportionally insignificant number. A link to the data can be accessed in the footnotes.\(^4\)

**Delayed transfers of care**

The data for Wales looks at the number of people experiencing delayed transfers of care, rather than the number of delayed days. This method does not differentiate between delays of a day and much longer delays. Consequently, the Welsh data can only present a limited sense of the extent to which delayed transfers of care are a problem for NHS services.

**Indicators**

From 2012/13, several indicators were no longer included in the data released by StatsWales, specifically average length of stay, turnover interval and bed use factor\(^5\). This was due to inconsistencies in how hospitals and local health boards were reporting their data. Average length of stay was still reported in the PEDW (patient episode database for Wales), which is therefore the source of the length of stay data included in the paper. The PEDW does not include data on turnover interval however, so figures for the years 2012/13 – 2014/15 were calculated internally using the widely agreed formula (see Turnover Interval under the England section of Annex B for more information about the calculation and use of this indicator).

**Known data issues**

Past data analyses in Wales have revealed various inconsistencies in the way in which data have been reported, notably in relation to AU (assessment unit) activity. Assessment and clinical decision units are often used as a potential alternative to admission — however, some local health boards were including AU activity within their bed data, while others were not. Though this inconsistency was only identified recently, there is a possibility that historic data could also have been affected. For further information, please consult the Wales Informatics Service technical note in the footnotes.\(^70\)

**PEDW (patient episode database for Wales)**

Before 2012/13, the PEDW classified episodes of care in the data according to the speciality of the consultant that patients had received care from; from 2012/13 onward, this was changed to the speciality under which patients had been treated. This restricts comparability of those indicators that make use of the broad specialty groups in the data (in particular length of stay — of note, there are anomalous variations in the length of stay for elective patients across this timeframe, which could be a consequence of the changes to the data publication).

**Regional data/restructure**

In October 2009 there were substantial reforms across the NHS in Wales. Twenty-two LHBs (local health boards) and seven NHS Trusts were replaced with seven integrated LHBs, responsible for all health care services. Comparisons can therefore not be made between regional data published before and after 2009. Consult the briefing from the NHS on the restructure in the footnotes for more information.\(^71\)
Specialties
Due to the large number of categories of specialty assigned to beds in Wales, we felt that it was necessary to combine some of them to form broader, less specific categories. Any specialty formerly included within the medical acute, surgical acute or other acute groupings has now been merged into a single acute category.

Acute care in this report represents a distinct category from geriatric medicine, which refers to non-acute care of elderly patients.

Twelve hour wait at emergency departments
Though the performances of Welsh emergency departments against the four and eight hour waiting time targets have been monitored since 2009/10, data relating to the 12 hour waiting time target has only been published from 2012/13 onwards.

Velindre
Within the 2009 restructure of the NHS in Wales, three trusts were also created alongside the seven health boards. The three trusts (Public Health Wales, Velindre NHS Trust and Welsh Ambulance Services NHS Trust) cover the whole of Wales. Velindre NHS Trust, which is responsible for a number of specialist services, also manages a small number of beds across Wales. Consequently Velindre has been included alongside the seven health boards in the regional data.
The bed data sources (links to guidance on use of the data in the endnotes):

**England**
Bed data is collected and published by NHS England. Guidance on using the data can be found in the link in the endnote.64

**Scotland**
Bed data is collected and published by ISD (Information Services Division). The link in the endnote offers further information about methodology and definitions.65

**Northern Ireland**
The Department of Health is responsible for publishing data on beds. The link in the endnotes offers some information about guidance for its use, and clarification of several key terms.66

**Wales**
StatsWales publishes Welsh bed data, as well as several other key indicators. Relevant information is included in the metadata section.67
Endnotes

2. See England graphs 3, 8; Northern Ireland graph 3; Scotland graph 8; Wales graph 6.
3. See England graph 1; Northern Ireland graph 1; Scotland graph 1; Wales graph 1.
4. See England graph 5; Northern Ireland graph 7; Scotland graph 5; Wales graphs 4, 5.
17. See England graph 9; Scotland graph 9; Wales graph 7.
20. See England graph 10; Wales graph 8.
24. See England graph 2; Northern Ireland graph 1; Scotland graph 2; Wales graph 1.
36. That this conference is concerned about the continued reduction in the number of in-patient hospital beds and the enormous pressure to discharge patients too early which may lead to patient harm. We urge the BMA to ask the DoH and any other relevant authorities to halt any further reduction in bed numbers and put measures in place to avoid any premature discharges. (Staff and associate specialists 2016).
38. See England graph 12; Scotland graph 7.


42 This conference is concerned that shifting of patients across wards, bed shortages, precarious staffing levels and scarcity of resources is compromising patient safety. We urge the government to rise above political expediency and optimally resource NHS service (Staff and associate specialists conference 2015).

43 See England graph 1; Northern Ireland graph 9; Scotland graph 4; Wales graph 9.

44 See England graph 2; Northern Ireland graph 9; Scotland graph 4.


47 www.communitycare.co.uk/2015/07/15/mental-health-patients-sent-hundreds-miles-beds-area-placements-rise-23-per-cent

48 Royal College of Psychiatrists (2012) *A guide to good practice in the use of out-of-area placements*. London: Royal College of Psychiatrists’ Faculty of Rehabilitation and Social Psychiatry

49 That this meeting deplores the fact that our most vulnerable young people are being sent to inpatient units far from their local support networks, because of the continuing bed shortage, and demands i) that councils and providers work together with a sense of urgency for care closer to home and ii) that funding for this purpose be an immediate priority. (ARM 2016).


51 www.communitycare.co.uk/2014/02/20/mentally-ill-children-sent-hundreds-miles-care-due-bed-shortage


54 That this meeting believes that trends in reducing hospital beds have gone too far and need to be urgently re-evaluated (ARM 2016)

55 That this conference is concerned about the continued reduction in the number of in-patient hospital beds and the enormous pressure to discharge patients too early which may lead to patient harm. We urge the BMA to ask the DoH and any other relevant authorities to halt any further reduction in bed numbers and put measures in place to avoid any premature discharges. (Staff and associate specialist conference 2016)

56 That this conference insists that the Government tackles the bed crisis with more hospital beds and proper funding for care in the community. (Policy group, consultants 2016)

57 That this meeting believes that further reduction in NHS bed numbers will be counterproductive in providing optimal healthcare and lead to staff and patient dissatisfaction and or adverse outcomes (ARM 2010).

58 That this conference insists that the Government tackles the bed crisis with more hospital beds and proper funding for care in the community (Consultants conference 2016).

59 That this conference is concerned about the continued reduction in the number of in-patient hospital beds and the enormous pressure to discharge patients too early which may lead to patient harm. (staff and associate specialists 2016).


63 www.kingsfund.org.uk/blog/2015/11/delayed-transfers-care-join-queue


66 www.isdscotland.org/Health-Topics/Hospital-Care/Beds/


71 NHS Wales (2009) *NHS in Wales: Why are we changing the structure*. 