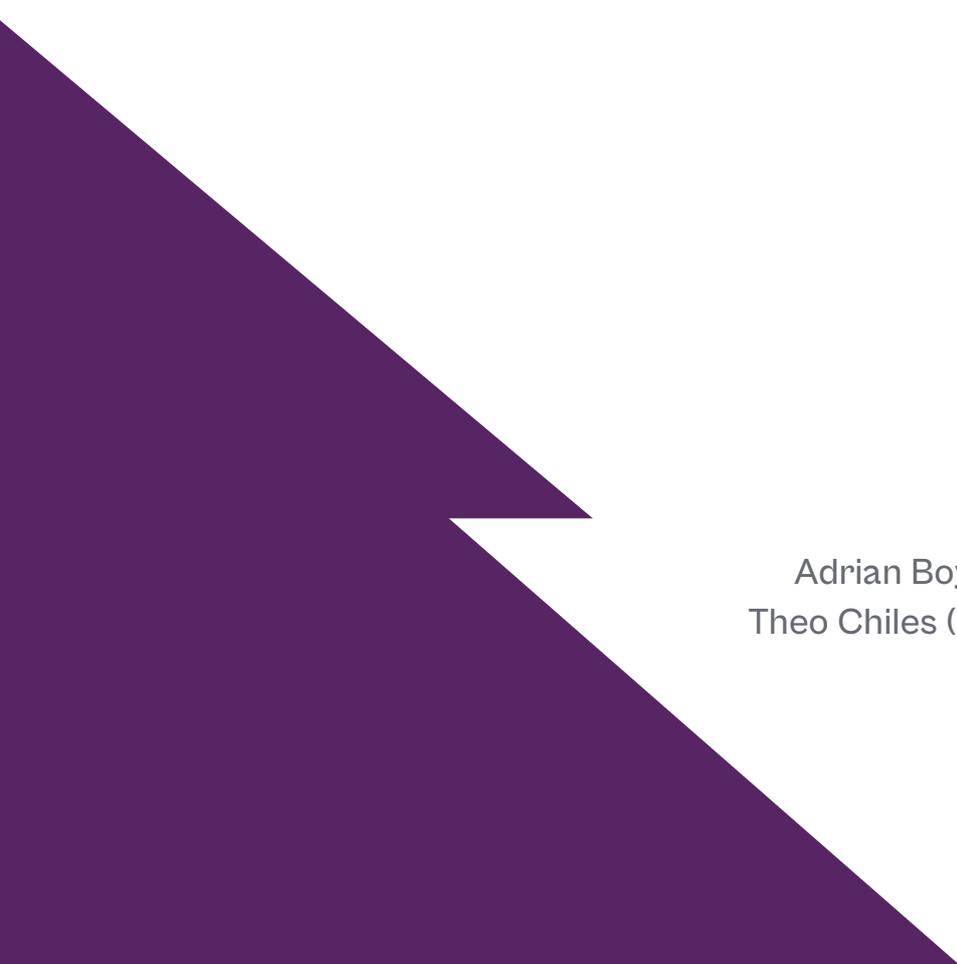


# RCEM Acute Insight Series:

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## Beds in the NHS



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## **Executive Summary**

Since 2010/11, the NHS has lost almost 25,000 beds across the UK. The evolving nature of healthcare provision means that the role of hospital admission has changed, but hospital beds still represent an essential part of healthcare, and the number available to the NHS should be carefully considered.

A broad consensus has developed in recent years that the reduction in beds has happened too quickly. The outcome is that the NHS is now under-bedded.

This has important consequences; patients must now endure long waits to be admitted with emergency department staff providing care normally provided in wards even as they continue to care for new arrivals; ambulance handover delays increase and there are delays to calls for an ambulance; planned operations are cancelled.

Cuts to mental health beds have also heaped additional pressure not just on the mental health sector, but also the acute sector as patients are forced to seek treatment outside of appropriate care settings. The number of mental health admissions to general and acute hospital beds exceeds the number of admissions to mental health beds. Bottlenecks can be seen even in critical care, where even small delays to treatment can have severe consequences.

While the process of reintroducing more beds to the system will not be straight-forward, it is clear that more must be made available as soon as possible if the NHS is to fully meet the UK population's health needs.

## **RCEM's Recommendations**

- We recommend that an additional 4,500 beds across the United Kingdom be made available between now and next Winter, and approximately 8,500 more over the next five years.
- The allocation of additional beds should be made available based on a local assessment of population needs and not worsen health inequalities.
- Hospitals should define thresholds for occupancy, and justify if they exceed 85% (sometimes this is appropriate, but more often, not)
- Any new hospital buildings should increase the proportion of side rooms in order to restrict the number of beds made unavailable through infection and reduce nosocomial infections.
- There needs to an increase in Mental Health bed capacity. Assessment areas for short term, resource intensive assessment of people suffering a mental health crisis would improve care and patient experience.

## Scope

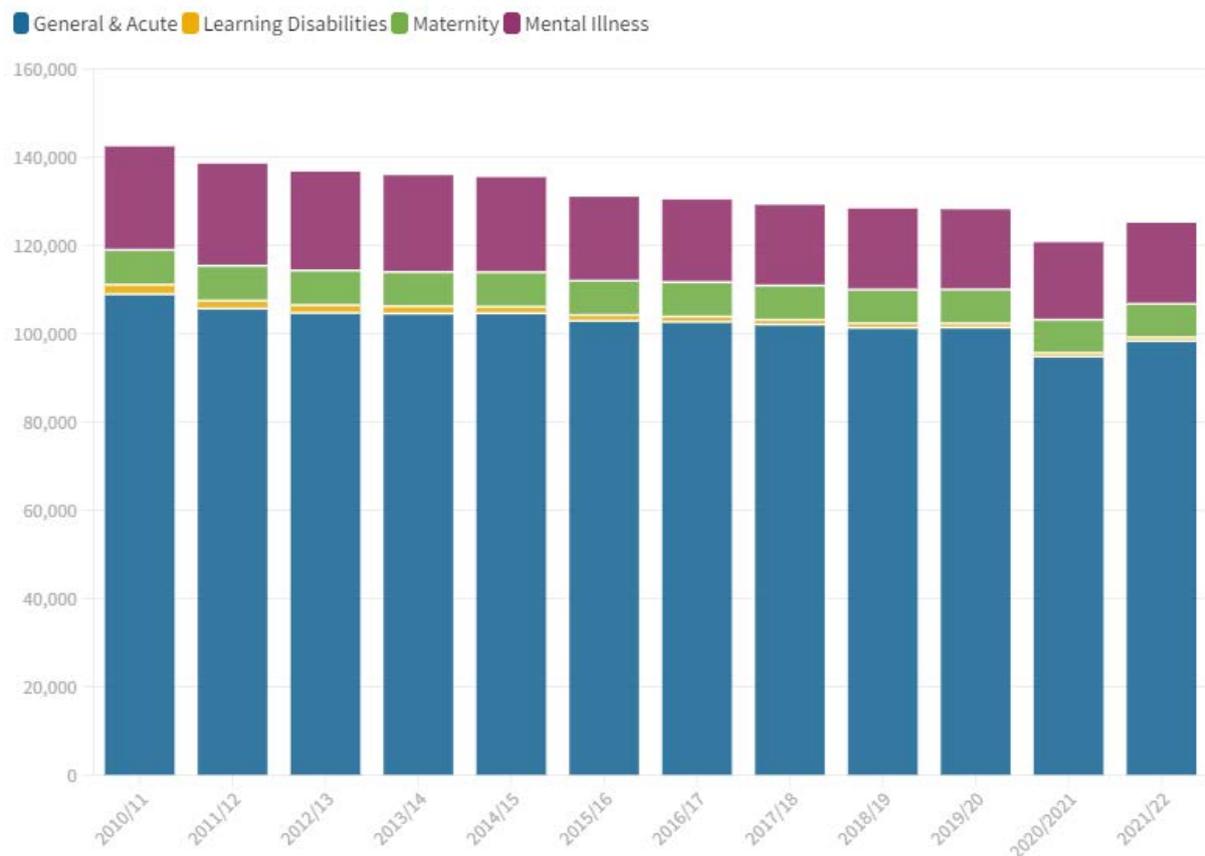
Reducing long stays in emergency departments requires adequate staffing, space, efficient processes, and sufficient inpatient bed capacity. This article focuses on inpatient bed capacity. While the unit of measurement is a bed, it must be remembered that a bed requires medical, nursing and other staff to safely function.

In most advanced healthcare systems, bed numbers have been falling steadily for several decades. To a large extent this is the consequence of medical advances and better processes driving down length of stay, and more care being delivered outside of secondary care settings.

In the summer before the pandemic, Simon Stevens, then NHS England Chief Executive, conceded that the remaining bed base had become “overly pressurised” due to the cuts to bed numbers, and that the policy of removing beds from the system would need to be reversed.<sup>1</sup>

For several years now, a number of organisations, including [RCEM](#), [the BMA](#), [the RCS](#), and [NHS Providers](#) have consistently called for the cuts to bed numbers in the UK to end, and for additional beds to be restored.

## Overnight Beds in England

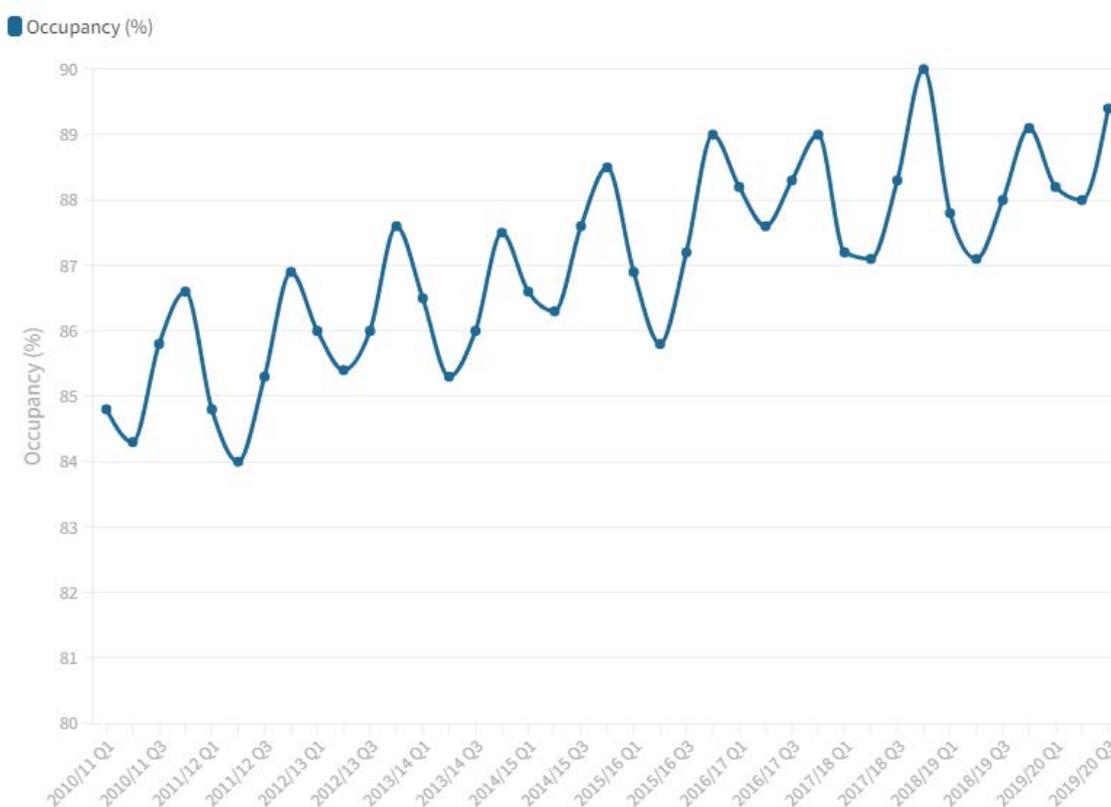


<sup>1</sup> <https://www.theguardian.com/society/2019/jun/19/hospital-bed-cutbacks-have-gone-too-far-nhs-england-boss-simon-stevens-says>

Since 2010, 17,767 beds have been taken out of active service in England.<sup>2</sup> In Scotland, it is 4,227<sup>3,4</sup>, in Wales, 1,809,<sup>5</sup> and in Northern Ireland, 1,060,<sup>6</sup> for a total of 24,863. This reduction has been exacerbated by Covid, which necessitated the removal of beds to comply with infection prevention control (IPC) measures. But, of the more than 20,000 beds lost in England, three quarters were removed by the start of 2020, prior to the pandemic. Looking back further, the elimination of mixed sex accommodation in general wards, for entirely understandable reasons of privacy and dignity, in 2012 reduced bed flexibility with no increase in capacity.<sup>7</sup>

Additionally, BMA research in 2019 showed at trusts in England, escalation beds (beds opened during periods of high pressure, traditionally the more pressurised winter months) were remaining open year-round.<sup>8</sup> It was clear, even before the exacerbation of existing issues during the pandemic, that there were too few beds in the NHS.

### **Occupancy (Pre-Pandemic)**



<sup>2</sup> <https://www.england.nhs.uk/statistics/statistical-work-areas/bed-availability-and-occupancy/bed-data-overnight/>

<sup>3</sup> N.B. this figure represents the decline in bed numbers between 2011 and 2020.

<sup>4</sup> <https://publichealthscotland.scot/publications/acute-hospital-activity-and-nhs-beds-information-annual/acute-hospital-activity-and-nhs-beds-information-annual-year-ending-31-march-2021/>

<sup>5</sup> <https://statswales.gov.wales/Catalogue/Health-and-Social-Care/NHS-Hospital-Activity/NHS-Beds/nhsbeds-by-organisation-site>

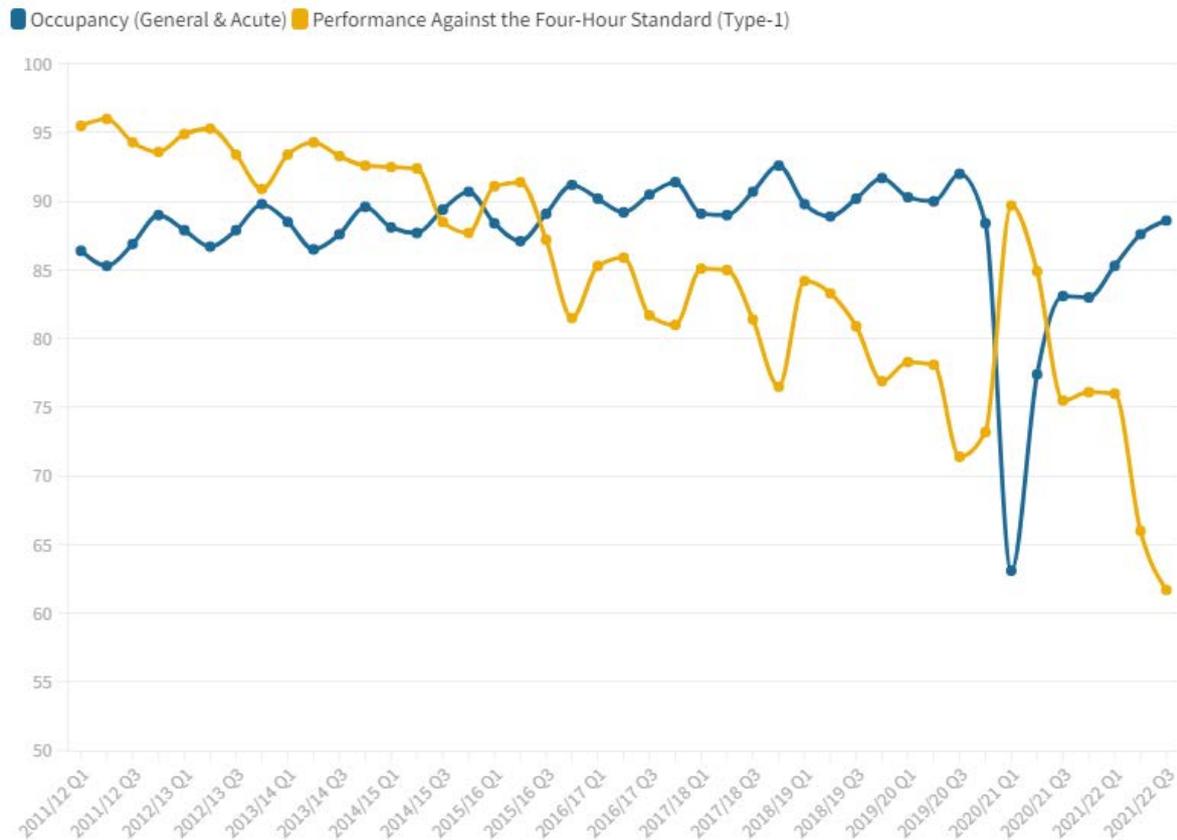
<sup>6</sup> <https://www.health-ni.gov.uk/articles/inpatient-and-day-case-activity>

<sup>7</sup> <https://www.england.nhs.uk/statistics/statistical-work-areas/mixed-sex-accommodation/>

<sup>8</sup> <https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/bed-occupancy-in-the-nhs>

Although the factors affecting the length of waits in Emergency Departments are complex, there is a strong relationship captured in the relevant data between bed occupancy and long stays in EDs – historically, as the former increases, so too does the latter, illustrating the importance of sufficient bed numbers to maintain good flow through EDs.<sup>9</sup>

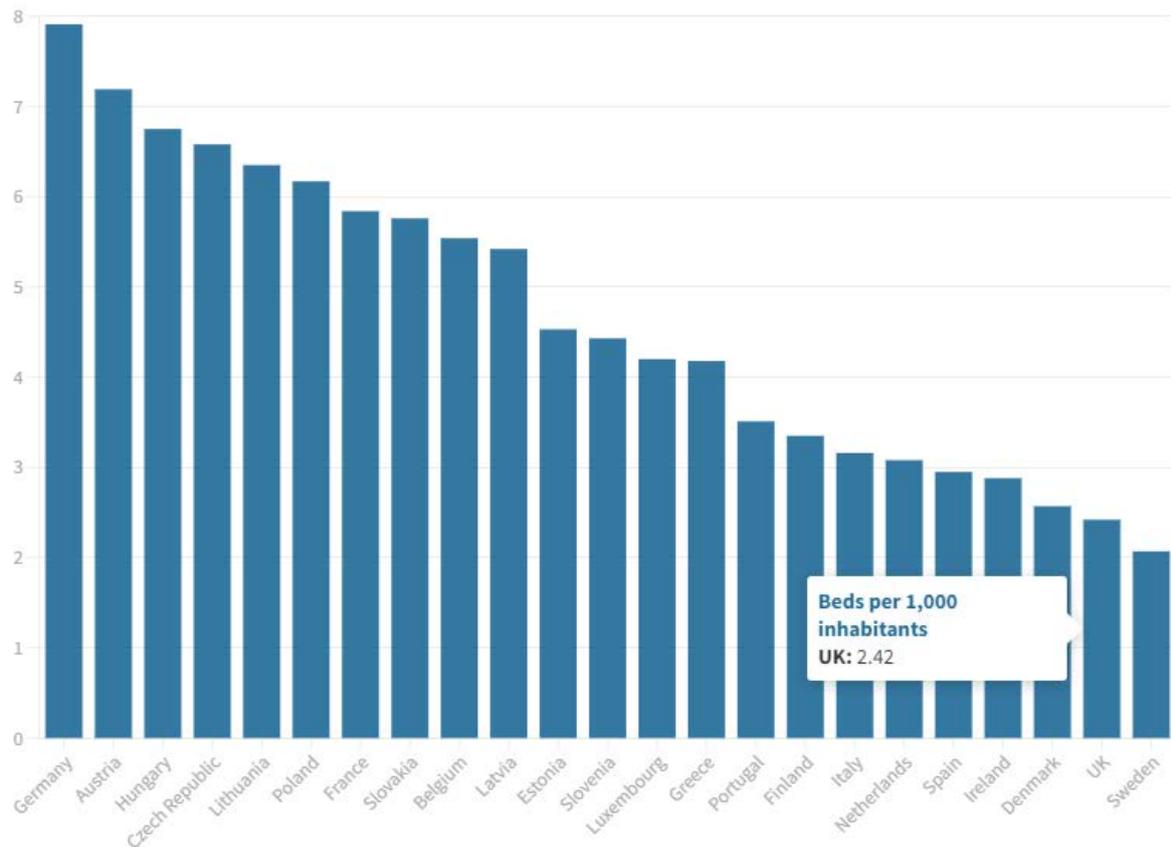
### **Bed Occupancy & Four-Hour Performance**



### **How does the UK compare to other nations?**

Care is needed when comparing bed numbers between nations. The nature of healthcare provision will obviously vary between countries – there is little consensus on the optimal model for the delivery of care, and more emphasis is placed on secondary care in some countries than others. Furthermore, the boundaries and definitions between acute hospital care and residential social care vary between nations. However, despite these caveats, it is still informative to compare the number of beds per person in the UK with those nations in the European Union for which there is available data.

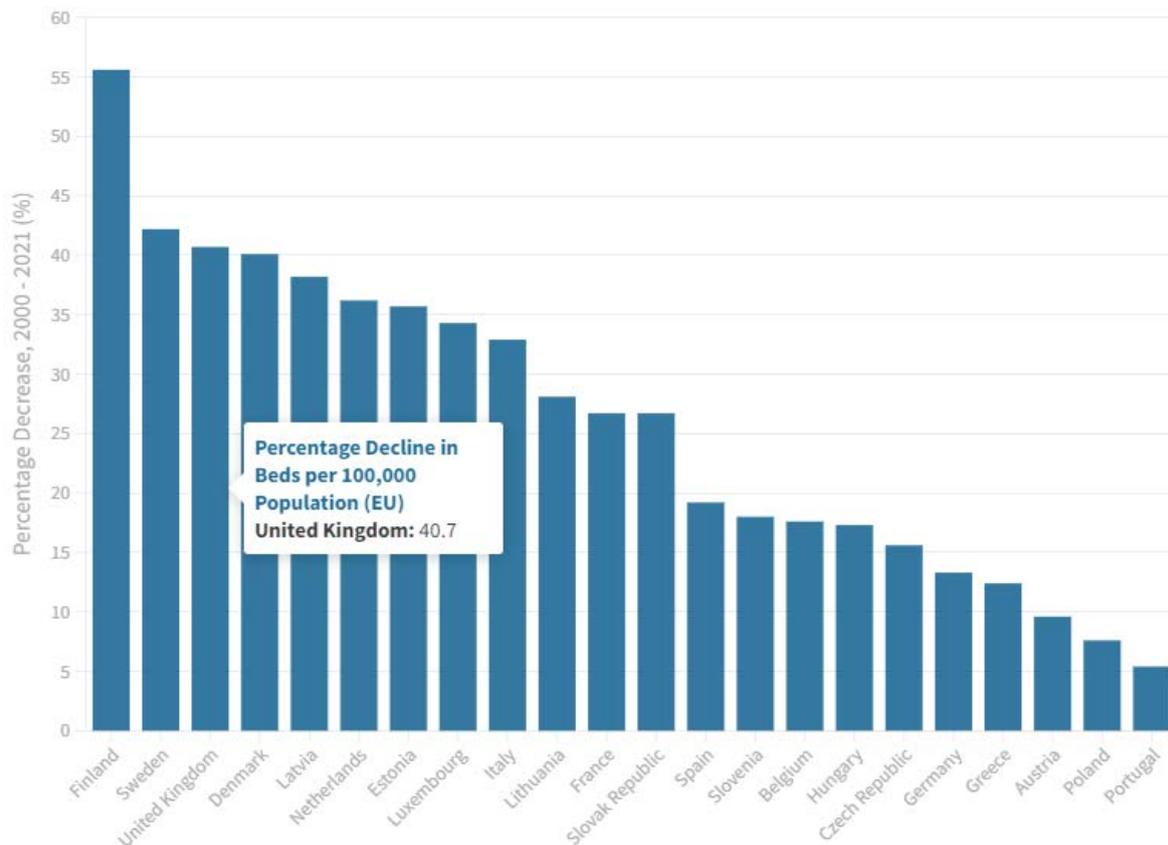
### Beds per 1,000 Inhabitants (EU)



At 2.42 beds per 1,000 people, the UK sits second from last, just ahead of Sweden (2.1), but behind the other 21 nations. In order to achieve the EU average of 4.75 beds per 1000 population (not including the UK's own figure), the UK would need over 317,000 beds, effectively double what it has now. Sweden has also begun to report concerns about emergency department crowding, while also emphasising long-term and outpatient care over inpatient care. Additionally, there has been a substantial increase in the volume of day-case surgery in the past fifteen years.<sup>10</sup>

<sup>10</sup> [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0012/355998/Health-Profile-Sweden-Eng.pdf](https://www.euro.who.int/__data/assets/pdf_file/0012/355998/Health-Profile-Sweden-Eng.pdf)

## Percentage Decline in Beds per 1,000 Inhabitants (EU) between 2000 and 2021



The number of beds has fallen almost everywhere, albeit at different rates. The reduction of 40.7% in beds per 1,000 people in the UK in the last two decades was surpassed by only two other countries.

Low bed numbers per capita might be mitigated if the beds were used efficiently. A traditional measure of hospital efficiency is average length of stay for emergency admissions. The UK has improved this from over seven days in 2013 to five days in 2019.

However, the current average length of stay in the UK is in the middle of the pack compared to other European Countries. It is untenable to have less beds but use them with only average efficiency.

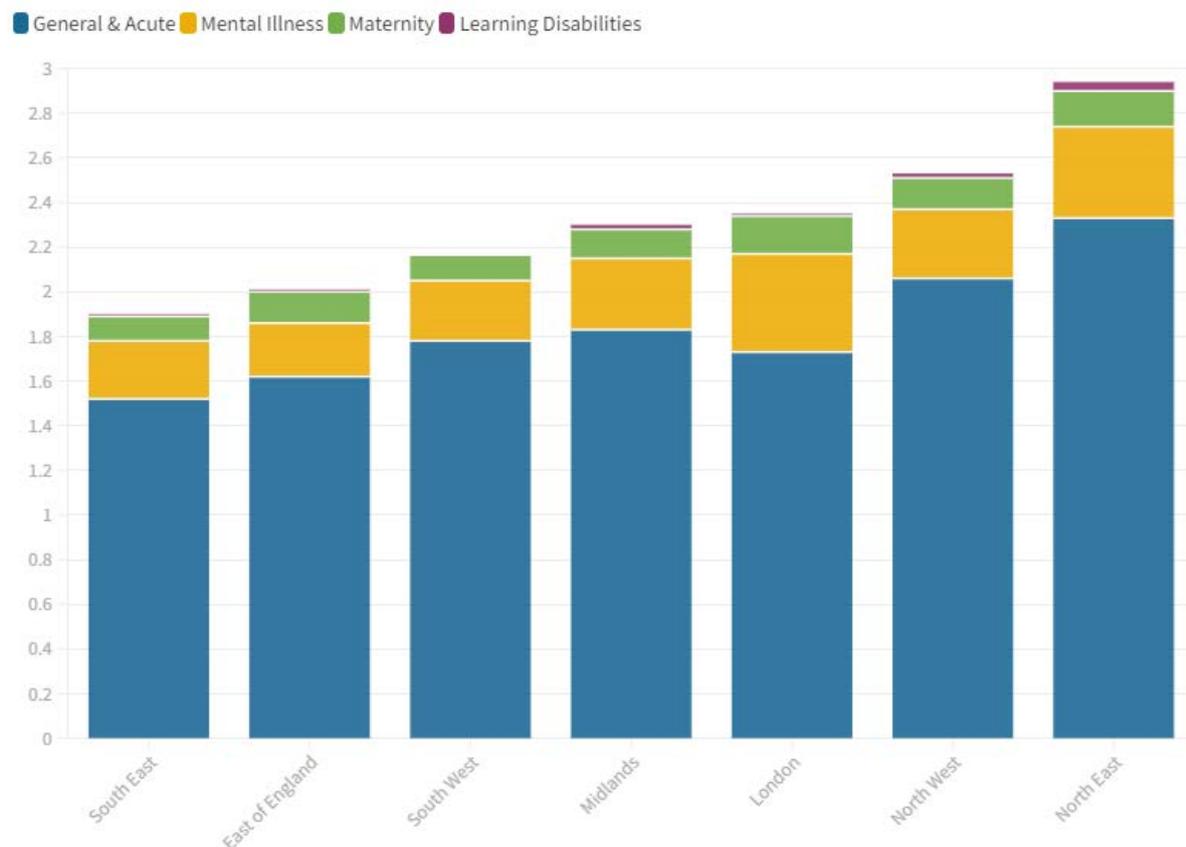
Within the UK, there is unwarranted variation in the numbers of available beds. At 3.6 beds per 1000, Scotland stands ahead of the other four nations, and would sit in the middle of the European Union nations. At 2.2 beds per 1000, England has the fewest. Subtle but meaningful distinctions in terms of how beds and occupancy are measured between nations (as well as frequency of publications) means comparisons should be made cautiously. However, it should be noted that while they may have a greater relative number of beds, Northern Ireland and Wales sit below England in terms of several key performance indicators, a reminder of the fact that beds, while important, are just one component of an entire healthcare system.

	Latest Available Beds (All Specialties)	Beds/1000 Population
Scotland	20,027	3.6
Wales	10,340	3.3
Northern Ireland	5,672	3.0
England	126,688	2.2

### Regional Differences

There is substantial variation in terms of bed provision at almost every level – across the EU, there are extremely disparate numbers of beds available, and as we have shown, this holds true of the countries that make up the UK as well. Taking England as an example (and using Q3 of 2019/20 data, by virtue of it being the last pre-pandemic dataset) we see further unwarranted variation in numbers of beds in each region.<sup>11, 12</sup>

### Beds per 1,000 Inhabitants – England Commissioning Regions (Q3, 2019/20)



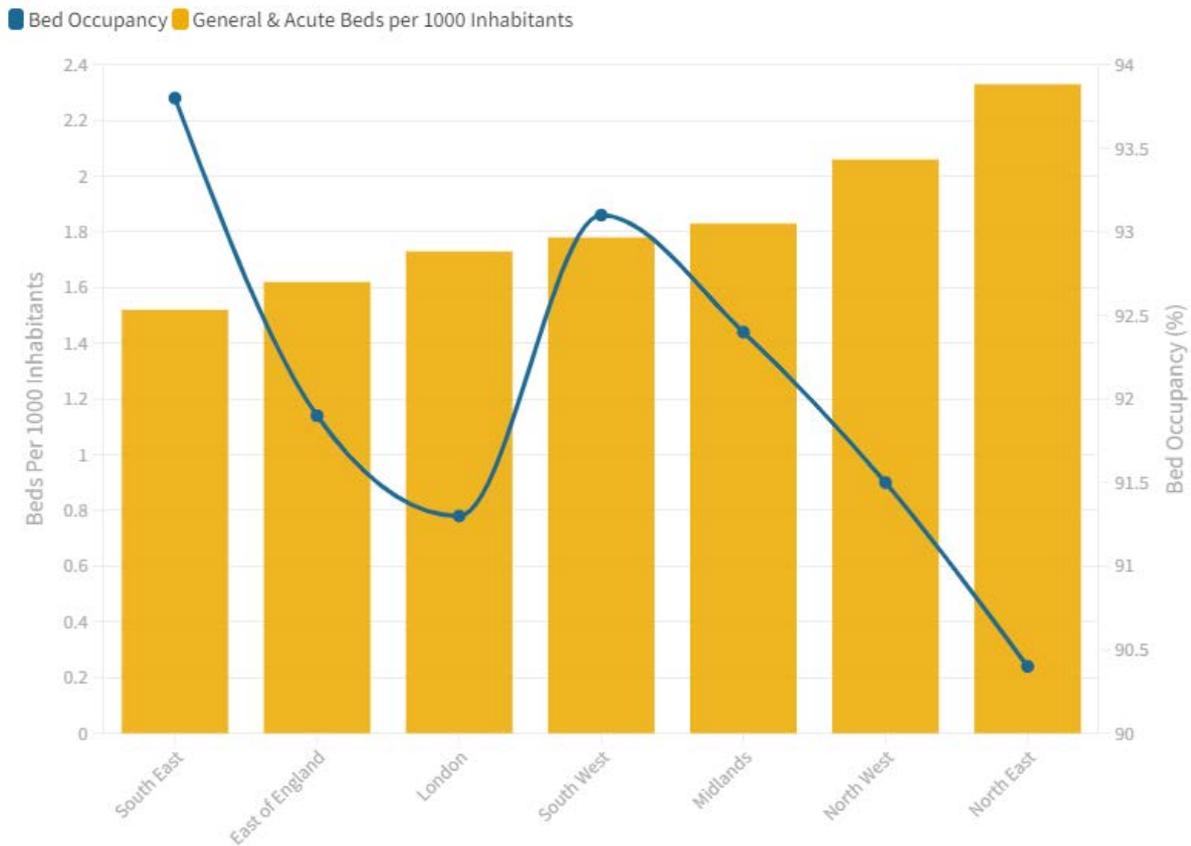
At 1.90 beds (all types) per 1000, the South-East of England had over one fewer bed per 1000 than the North-East (2.95). There is a clear association between bed availability and

<sup>11</sup> Population data for the commissioning regions is drawn from NHS England's NHS 111 Minimum Data Set: <https://www.england.nhs.uk/statistics/statistical-work-areas/nhs-111-minimum-data-set/>

<sup>12</sup> Bed data is drawn from NHS England's Bed Availability and Occupancy Data Set: <https://www.england.nhs.uk/statistics/statistical-work-areas/bed-availability-and-occupancy/bed-data-overnight/>

occupancy, particularly within the general and acute bed stock, with the South-East recording an occupancy figure 3.4 percentage points higher than the North-East.

**General & Acute Beds per 1000 Inhabitants and Bed Occupancy by Commissioning Region (Q3, 2019/20)**



**Critical Care Beds**

Variation can also be seen in the number of Critical Care (level 2 and 3) beds.<sup>13</sup> The latest (pre-pandemic) data shows that in a normal year, the UK ranks below many of its European peers in terms of their availability.<sup>14</sup> Across regions there is a range of funded critical care beds with 4 below even the 7.3 beds per 100,000 population.<sup>15</sup>

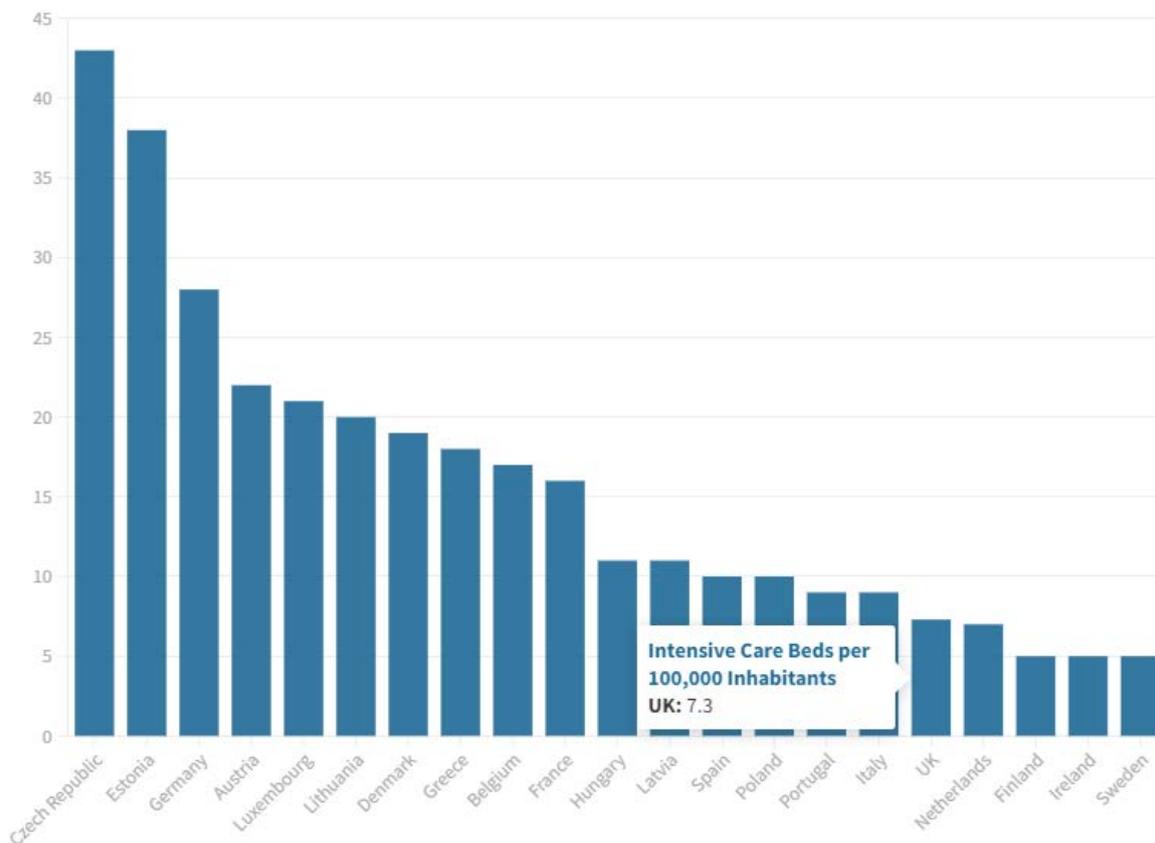
The result of this is that a critically ill patient’s journey out of the emergency department can be delayed. Critical care patients in the emergency department require disproportionate medical and nursing resource. Furthermore, emergency intensive care admissions can use a sparse resource and lead to cancelled high-risk surgery.

<sup>13</sup> [https://www.ics.ac.uk/Society/Patients\\_and\\_Relatives/Levels\\_of\\_Care](https://www.ics.ac.uk/Society/Patients_and_Relatives/Levels_of_Care)

<sup>14</sup> <https://www.oecd-ilibrary.org/sites/e5a80353-en/index.html?itemId=/content/component/e5a80353-en>

<sup>15</sup> <https://www.hsj.co.uk/quality-and-performance/revealed-huge-regional-variation-in-nhs-ability-to-meet-coronavirus-demand/7027153.article>

## Intensive Care Beds Per 100,000 Inhabitants (EU)



Similarly, the number of intensive care beds differs between the seven NHS commissioning regions in England – three regions saw substantial increases in the numbers of ICU beds between 2019 and 2021 (the North-West, the East of England and London), presumably to cope with the added pressure of the pandemic.<sup>16</sup> Four regions saw their number of beds stay broadly the same (or even fall).

Good flow in and out of Critical Care is important in ensuring that the patients most in need of treatment are given the best chance at survival. Though the optimum number of beds is likely to depend on the local context (e.g. population health needs, training and skill mix of the local workforce etc.), research has suggested that the appropriate occupancy levels should be around 70-75%.<sup>17</sup>

In the winter of 2019/20 (before the increase in Critical Care beds associated with the pandemic), occupancy levels within the NHS in England were over 80% in 10 out of 11 weeks, reaching a high of 84.5% at the start of January. The reported data for 2021/22 appears to have improved although still the occupancy figure has never dropped below 74%, exceeding 80% on two separate weeks.<sup>18</sup>

<sup>16</sup> Winter Daily Situational Reports, 2019/20 & 2021/22. Data is from the first available day of data from both years.

<sup>17</sup> Tierney LT, Conroy KM (2014) Optimal occupancy in the ICU: a literature review. *Aust Crit Care* 27:77–84

<sup>18</sup> <https://www.england.nhs.uk/statistics/statistical-work-areas/uec-sitrep/>

This data for 2021/22 is not reflective of the experiences of Intensive Care Units during the pandemic period where many were considerably stretched by 1.5 to 3 times their baseline capacity for prolonged periods.<sup>19</sup> There are some important reasons for this and relate to the definitions and accuracy of data submissions for ‘open’ beds. For example, if temporary unfunded surge beds or funded but unstaffed beds were labelled as ‘open’ this would inflate the available capacity whilst showing percentage occupancy relative to baseline (funded and staffed) beds being static compared with previous years.<sup>20</sup>

Research shows that delays in admissions into ICUs leads to higher mortality rates.<sup>21</sup> An adequate Critical Care bed stock is crucial, therefore, in terms of avoiding unnecessary deaths due to bottlenecks at the point of admission. Moreover, enough general and acute beds are also required to ensure that these level 2 and 3 beds are not occupied by patients with less acute care needs.

In the winter of 2019/20 (before the increase in ICU beds associated with the pandemic), occupancy levels within the NHS in England were over 80% in 10 out of 11 weeks, reaching a high of 84.5% at the start of January. With more beds now available, this figure fell in the winter of 2021/22, although the occupancy figure has never dropped below 74%, and exceeded 80% in two separate weeks.

Additionally, during the most recent winter, many ICUs reported difficulties in discharging patients back into non-intensive care beds due to a lack of availability, as well as receiving patients not requiring critical care as there were no other beds available on site.<sup>22</sup>

Research shows that delays in admissions into ICUs leads to higher mortality rates.<sup>23</sup> An adequate ICU bed stock is critical, therefore, in terms of avoiding unnecessary deaths due to bottlenecks at the point of admission. Moreover, enough general and acute beds are also required to ensure that critical care beds are not occupied by patients with less acute care needs.

### **Delayed Discharges, Long-Stay Patients and Length of Stay**

A long-standing issue in relation to the use of beds in the NHS has been the number occupied by patients who are clinically fit for discharge but who remain as inpatients. For many years, these cases were referred to as “delayed transfers of care,” and as graph below demonstrates, they have been a problem for the NHS in England for some time.<sup>24</sup>

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<sup>19</sup>

[https://www.ics.ac.uk/Society/Policy\\_and\\_Communications/Articles/Recovery\\_and\\_Restitution\\_of\\_intensive\\_care.aspx?WebsiteKey=17ec9561-e0d6-4569-bb31-8fe654a17620](https://www.ics.ac.uk/Society/Policy_and_Communications/Articles/Recovery_and_Restitution_of_intensive_care.aspx?WebsiteKey=17ec9561-e0d6-4569-bb31-8fe654a17620)

<sup>20</sup> <https://www.england.nhs.uk/wp-content/uploads/2020/12/C1445-process-definitions-daily-situation-report-web-from-october-2021-update.pdf>

<sup>21</sup> Harris, S., Singer, M., Sanderson, C. et al. Impact on mortality of prompt admission to critical care for deteriorating ward patients: an instrumental variable analysis using critical care bed strain. *Intensive Care Med* 44, 606–615 (2018). <https://doi.org/10.1007/s00134-018-5148-2>

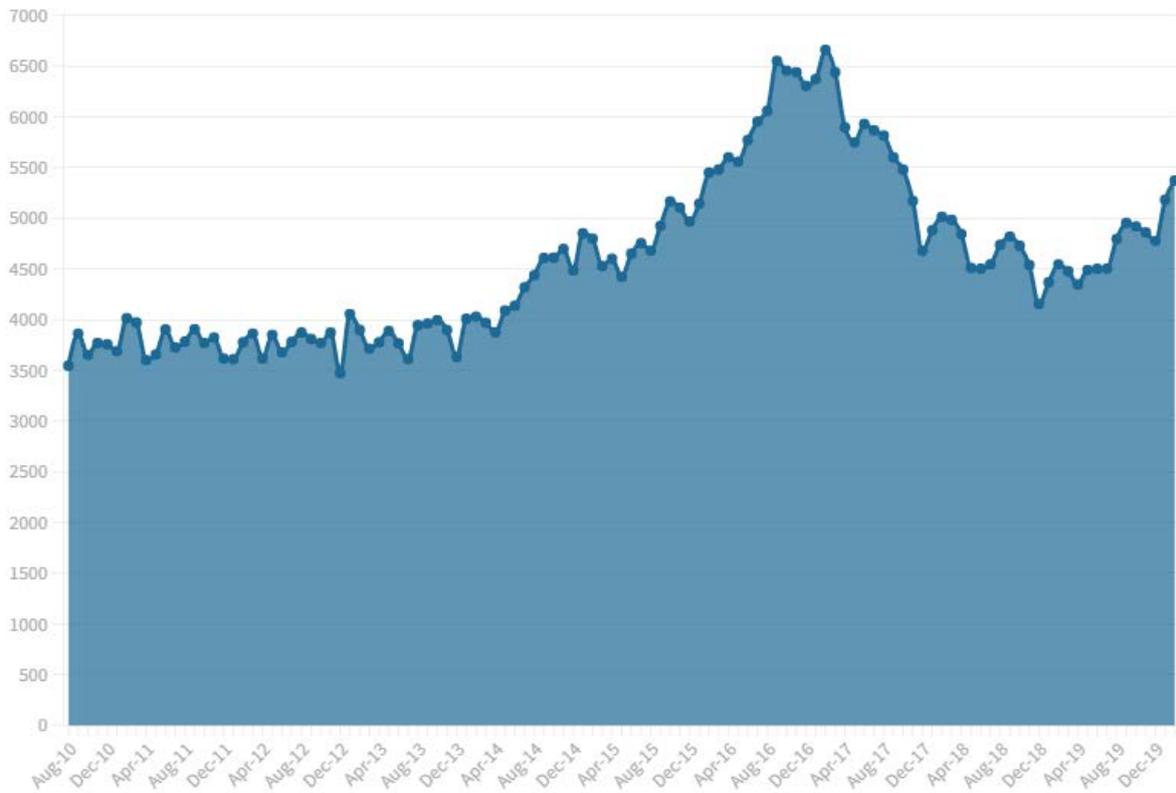
<sup>22</sup> <https://www.bmj.com/content/376/bmj.o125>

<sup>23</sup> Harris, S., Singer, M., Sanderson, C. et al. Impact on mortality of prompt admission to critical care for deteriorating ward patients: an instrumental variable analysis using critical care bed strain. *Intensive Care Med* 44, 606–615 (2018). <https://doi.org/10.1007/s00134-018-5148-2>

<sup>24</sup> <https://www.england.nhs.uk/statistics/statistical-work-areas/delayed-transfers-of-care/>

## **DTOCs (England)**

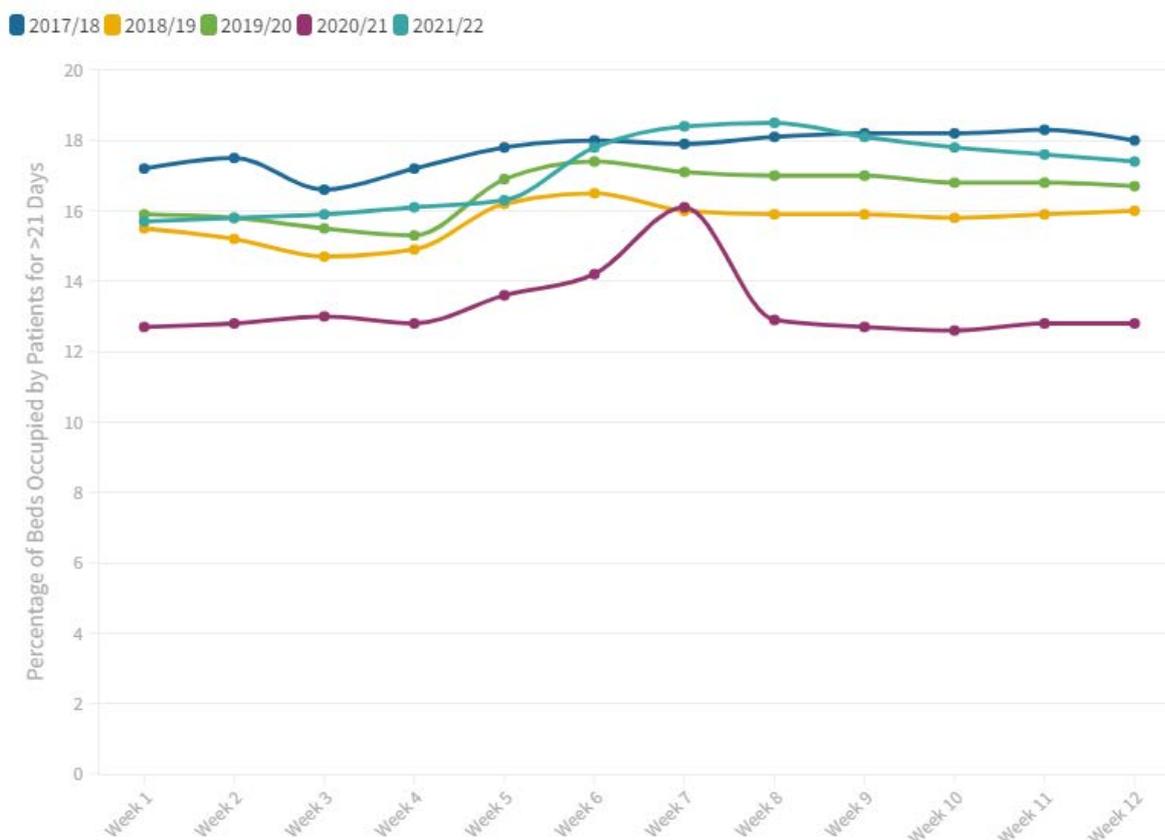
■ Average Number of DTOCs Per Day



NHS England suspended the collection and publication of this dataset at the start of the pandemic, but evidence suggest that this problem has not abated in the years since.<sup>25</sup>

<sup>25</sup> <https://www.theguardian.com/society/2021/dec/12/number-of-healthy-patients-stranded-in-english-hospital-wards-rises-by-80>

## Percentage of Beds Occupied by Patients for 21 or More Days



A lack of recent comparable data obfuscates the current picture, but the number of long-stay patients in hospital is a useful proxy. The graph above is a cross-year comparison of the percentage of beds occupied by patients for 21 or more days each week over the three months typically covered by NHS England's Winter SitReps.

The data demonstrate that a substantial proportion of the NHS' bed-stock is occupied by patients for extended periods of time, many of whom almost certainly no longer require inpatient care. Part of the issue lies within the NHS itself – per the DTOC collection, in the last month of available data, just under 60% of delayed days (i.e., days in which beds were occupied by patients fit for discharge) were the responsibility of the relevant NHS organisation. However, almost a third were the responsibility of social care (and 10% were the responsibility of both).

Patients who remain in hospital for long periods of time are at increased risk of mental and physical deconditioning and hospital-acquired infections, and the risks are even greater for elderly or frail patients. While there have been ambitions to drive down length of stay and delayed discharges (the Long-Term Plan suggested it would be possible to free up as many as 7,000 hospital beds through a reduction in length of stay),<sup>26</sup> evidence would suggest that these have largely failed. Strategies constructed around guidance tools have limited utility, especially in the face of cuts to social and continuing health care.<sup>27</sup> While additional beds are

<sup>26</sup> <https://www.longtermplan.nhs.uk/new-nhs-plan-to-help-patients-avoid-long-hospital-stays/>

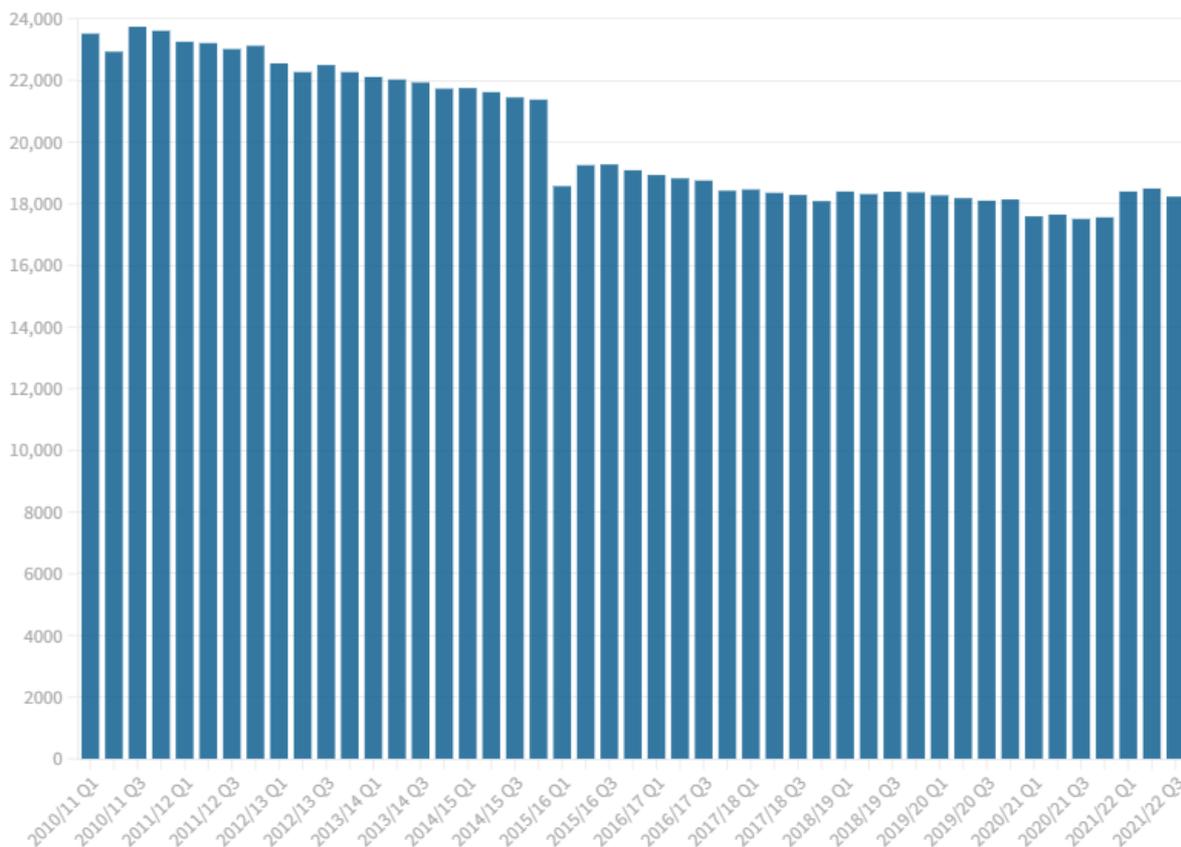
<sup>27</sup> *BMJ* 2019;366:l4720

still required, with additional resourcing for both acute and social care, the NHS could also make better use of the beds that it does have.

### Mental Health Beds

Mental health issues are the presenting feature in 5% of all emergency department attendances.<sup>28</sup> Few patients with mental health problems require emergency admission, but those who do often endure long waits in emergency departments or in medical wards. This prolongs recovery and is a poor patient experience.

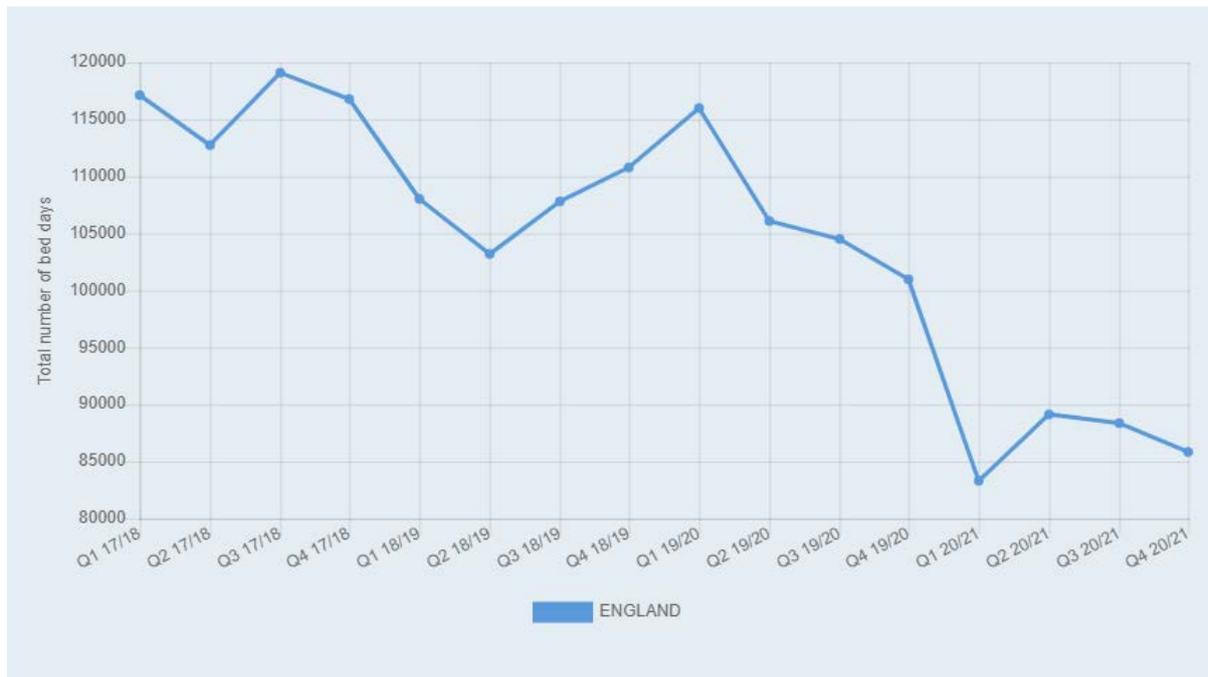
### Mental Health Beds



Since 2010/11, the number of mental health beds in England declined from over 23,500 to 18,200 in the most recent data, a fall of over 23%. There has been a similar proportionate decline in the number of CAHMS (children and adolescent mental health service) beds; this graph<sup>29</sup> shows the number of bed days for children and young people in CAMHS tier 4 wards:

<sup>28</sup> Royal College of Psychiatrists. British Association for Accident and Emergency Medicine *Psychiatric Services to Accident and Emergency Departments (CR118)*. Royal College of Psychiatrists, 2004.

<sup>29</sup> <https://mentalhealthwatch.rcpsych.ac.uk/indicators/bed-days-for-children-and-young-people-in-camhs-tier-4-wards>



2019 research found that, even as the number of admissions to mental health beds declined in the last two decades, the number of admissions of patients with primary mental health diagnoses to acute hospital beds increased.<sup>30</sup> Additionally, it was found that between 2015/16 and the research’s publication, the number of mental health admissions to general and acute hospital beds exceeded the number of admissions to mental health beds. The fall in mental health beds has led to increased pressure on the acute bed stock at acute trusts in England.

### What is optimal occupancy for a hospital?

Hospital occupancy is measured as the proportion of open beds that are occupied at midnight. While this ignores an enormous amount of activity that might happen before or after midnight, it is a static measure that allows useful understanding of trends. There is debate about the optimal occupancy rate for acute hospitals.<sup>31</sup> High occupancy rates are invariably associated with longer stays in emergency departments. Reducing occupancy usually leads to reduced length of stay in the emergency department.

Conventional wisdom has held that the optimal bed occupancy figure for hospitals is 85%. As a result, this figure has been used (by the College, amongst others) as a way of establishing bed needs. By calculating how many additional beds the NHS would require to achieve an 85% occupancy figure, either at a local or national level, a figure for the number of additional beds required can be proposed.

The provenance of the 85% benchmark is a paper published in 1999, *Dynamics of bed use in accommodating emergency admissions: stochastic simulation model*.<sup>32</sup> Using analysis of admissions and length of stay distributions at two NHS trusts (one city centre teaching

<sup>30</sup> The Strategy Unit, *Exploring Mental Health Inpatient Capacity across Sustainability and Transformation Partnerships in England*. 2019

<sup>31</sup> <https://www.hsj.co.uk/policy-and-regulation/nhs-england-has-got-it-right-on-beds/7026869.article>

<sup>32</sup> <https://www.bmj.com/content/319/7203/155>

hospital, and one non-teaching hospital in a “semirural post-industrial town”), the researchers found that:

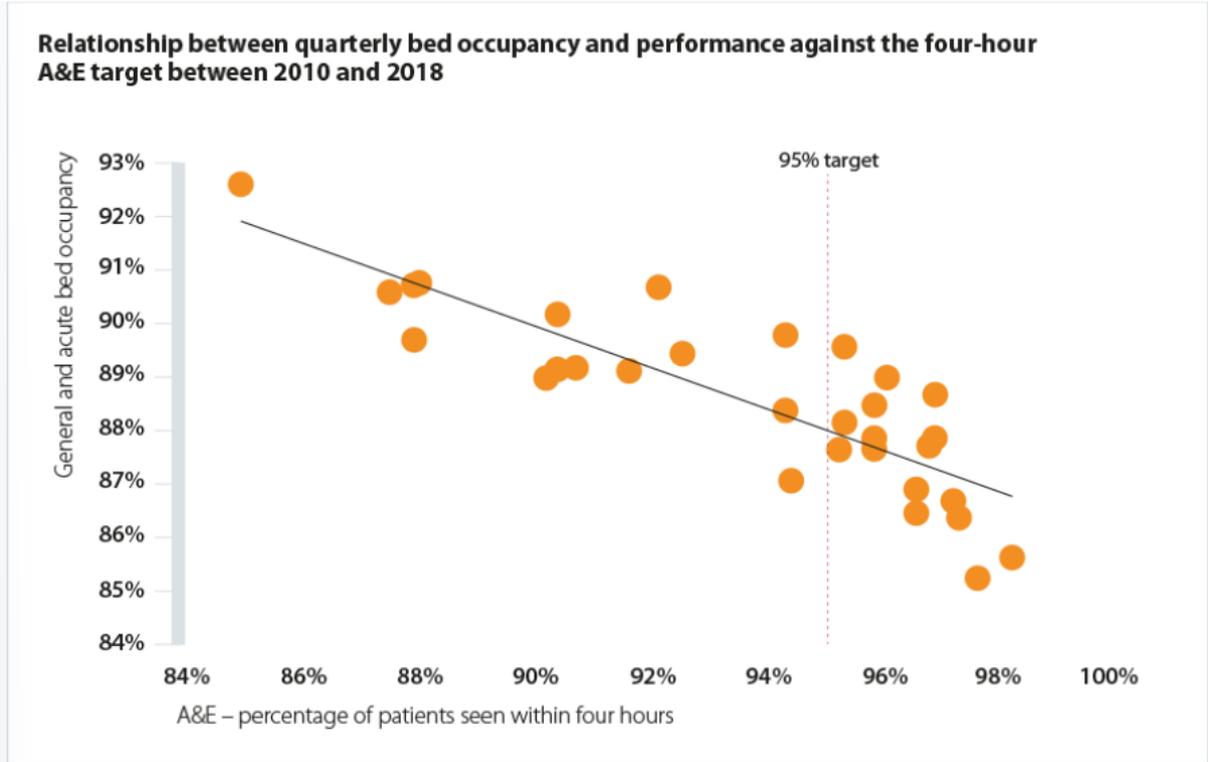
- Risks remain minimal as long as occupancy remains below 85%
  - At 85%, a hospital can expect to be short of beds for admissions on four days in a year
  - Above that level risks become substantial, and above 90% the system is regularly subject to bed crises. Gridlock and crowding at this level are almost always inevitable.
- A hospital that experiences a day on which no further admissions can be accommodated can expect to recover its long-term demand-capacity balance in a period approximately equal to twice the mean length of stay
  - Even a relatively low risk of failure can disrupt the operation of the hospital for a considerable time: at 85% mean occupancy, a hospital that runs out of beds for four days in a year may be disrupted for up to eight weeks in total (N.B. length of stay is considerably less now than it was when the study was conducted so this figure would be much lower)
- Risk increases as variability rises, seasonality being the most influential factor
  - Varying the size of the bed pool over a wide range affects risk only for capacities below about 150 beds, and even then, produces only modest increases in risk

There are several issues with the research; it was conducted over two decades ago, during which time the nature of secondary care has evolved. Additionally, the study took place at just two hospitals, raising questions about representativeness. Criticism also focuses on the fact that bed usage and need vary depending on the clinical context; a ward accommodating patients undergoing planned procedures will inevitably need less spare capacity than a ward accommodating patients undergoing unplanned, emergency treatment, so an 85% occupancy would probably not be appropriate for either.

In 2018, NHS Providers analysed the relationship between occupancy and four-hour target performance. This provided empirical evidence that acute hospitals are unable to achieve the four-hour access standard with inpatient occupancy levels of over 90%.<sup>33</sup>

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<sup>33</sup> <https://nhsproviders.org/the-nhs-funding-settlement-recovering-lost-ground/performance>



ECIST (Emergency Care Intensive Support Team) also examined this question.<sup>34</sup> This provided a nuanced assessment that each hospital needed to determine its own maximum capacity depending on the size of the pool (large pools are able to absorb more demand surges) and different hospitals can provide different mitigations, but commented that hospitals, in general, should avoid going over 92% occupancy and most should aim to be lower. While a nuanced bespoke occupancy may be methodologically more correct, empirically few hospitals have the analytical capability to conduct and implement this. The table below is from ECIST and shows the risk of running out of beds at various occupancy thresholds. This does not include the various safety concerns (cancelled elective surgery, outlying on the wrong wards, and increased infection control problems) that are well documented with high occupancy. Clearly, 92% and 90% occupancy lead to a high risk of running out of beds.

<b>Risk of running out of beds</b>	<b>Bed occupancy</b>
30%	97%
20%	95%
10%	92%
5%	90%
1%	87%
0.5%	85%
0.1%	83%

<sup>34</sup> [https://gooroo.co.uk/wp-content/uploads/2019/08/Planning\\_beds\\_bed\\_occupancy\\_and\\_risk.pdf](https://gooroo.co.uk/wp-content/uploads/2019/08/Planning_beds_bed_occupancy_and_risk.pdf)

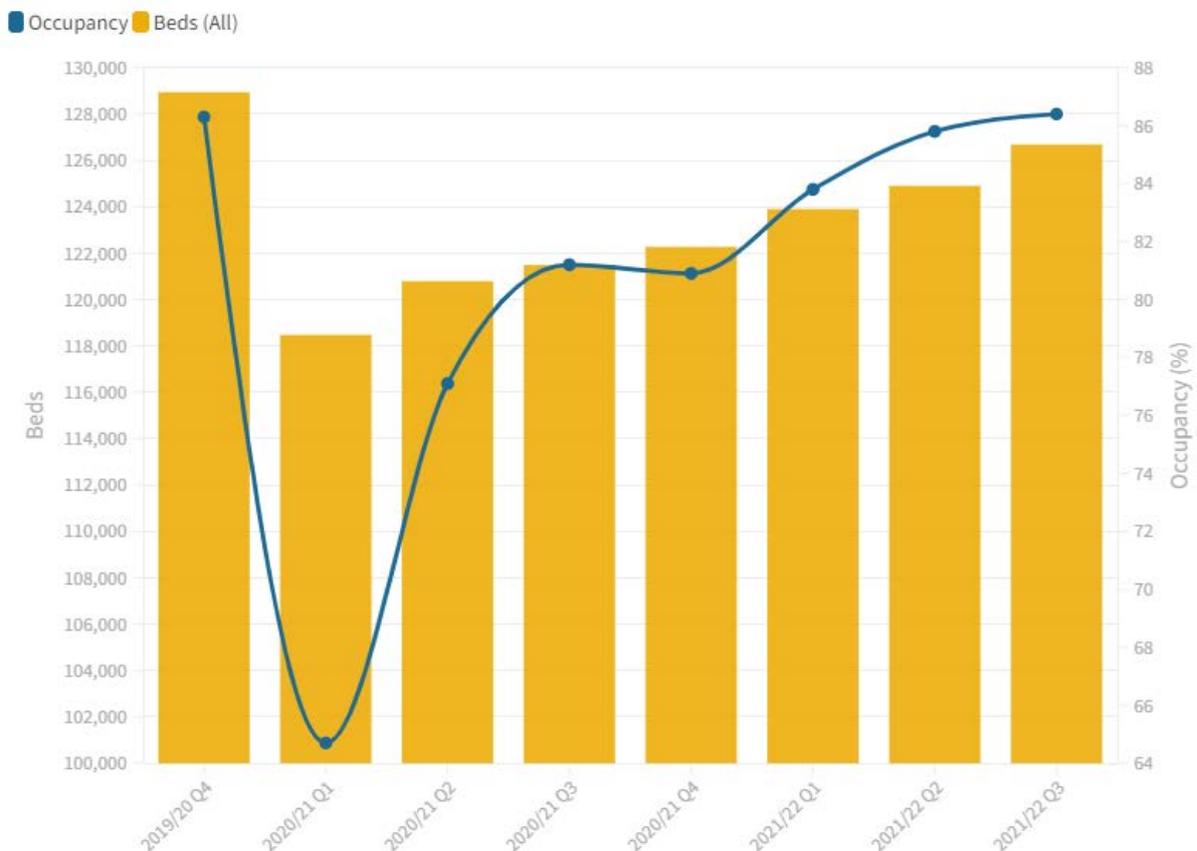
'NICE also examined this question with a detailed systematic review and commented that the quality of the evidence was very low This review recommended that occupancy should not exceed 90%.<sup>35</sup>

The College holds the view that hospitals should aim to have occupancy rates lower than the 85% threshold, but this may require local interpretation. Larger hospitals, with a higher proportion of side-rooms and flexible bed use may be able to tolerate higher bed occupancy rates.

### The Effect of Covid

During the pandemic, bed usage and availability in the NHS changed dramatically. This was due to a combination of factors, including: necessary distancing between beds; isolation rules revolving around nosocomial infections; additional IPC measures the cancellation of significant amounts of planned elective procedures; staff absences; fewer attendances at EDs. All of this meant that the number of beds in the system in England fell between Winter 2019/20 and the following spring by almost ten and a half thousand. Similar proportionate changes were seen in the devolved nations.

### Available Beds (all) and Occupancy - England



Concurrently, occupancy also fell, with just 65% of beds occupied during April, May and June of 2020. However, flexibility of bed use was markedly reduced. COVID cases required isolation, patients who did not have COVID could not be cared for on wards with active

<sup>35</sup> <https://www.nice.org.uk/guidance/ng94/evidence/39.bed-occupancy-pdf-172397464704>

COVID cases. Both these figures have increased steadily since then, with occupancy rising over 85% in the most recent available data for the first time since the pandemic began.

### How Many Beds Are Currently Needed?

With occupancy consistently below the 85% threshold for five of the last six quarters of bed data, the principal methodology underlying the traditional bed need calculations was rendered redundant, and thus a different methodology was required.

With that in mind, the College considered an alternative that focused on the ratio between admissions and bed numbers. Looking ahead to the next Autumn/Winter (Q3, 2022/23), if we assume that demand (as measured by the number of ordinary and emergency admission episodes) finally matches pre-pandemic levels (5.19m), then the NHS will need the same number of beds it had then to ensure that the admission to bed ratio remains the same.

### Admission to Beds Ratio (England)

Year (Q3)	Admissions per bed (all types)	Admissions per bed (general & acute)	Beds Required in 2022/23 (Q3) to achieve these ratios (all types)	Beds Required in 2022/23 (Q3) to Achieve These Ratios (general & acute)
2017/18	48.03	37.90	136,857	107,983
2018/19	50.57	39.86	130,123	102,547
2019/20	51.05	40.41	128,325	101,598

However, it could be argued that the ambition should be to improve on recent years, which have seen bed occupancy routinely reach dangerous levels in England. As we see from the table, to achieve the same ratio from the autumn/winter of 2018/19, the NHS would need just over 130,000 beds. To match the ratio from 2017/18 would require almost 137,000 beds. At the latest count, the NHS in England had approximately 126,700 beds, meaning that, assuming pre-pandemic demand next winter, around 3,500 additional beds will be needed across England to avoid a serious deterioration in the ratio of admissions to beds (or a 2.7% increase). A longer-term ambition might be to improve that ratio though, and a realistic goal might be to re-achieve the same figures as 2017/18. In that case, the NHS in England would need a little under 137,000 beds, or about 10,300 more than it has now (an 8.0% increase). The available bed data in the devolved nations is not as up-to-date as in England, but if bed requirements were broadly similar, then increases of 2.7% and 8.0% would look like this:

### Additional Beds Required (Devolved Nations)

	Beds (latest available figure, all specialties)	With additional 2.7%	With additional 8.0%
Northern Ireland	5,673	5,826	6,127
Scotland	20,193	20,738	21,808

Wales	10,564	10,849	11,409
Total	36,430	37,414	39,344

All told, this would suggest that the UK requires approximately 4,500 beds next winter to reach a pre-pandemic bed to admission ratio or about 13,000 beds to drive meaningful improvement in terms of the ratio (and by extension, bed occupancy levels).

### **Where have the beds gone?**

At the start of the pandemic, the NHS saw its bed stock reduced by just under 10,500 beds, in addition to the 14,000 that were removed in the decade prior. A significant proportion of those beds removed during the pandemic have been reintroduced to the system, but over 2,000 remain unavailable. What has happened to these beds? A significant number of inactive beds are still in situ in hospitals but are in wards or wings that have been mothballed.

Last year the Royal College of Emergency Medicine submitted an FOI request to trusts and health boards across the UK, requesting the number of active beds in service during the summer of 2021, in addition to the number of beds on site not in service for any reason over the same period.

The responses we received captured about 72,000 beds, or roughly 45% of the total bed stock across the four nations. The responding trusts and health boards told us that in addition to the 72,000 open beds, there 3,714 beds that were presently closed (i.e. mothballed). In other words, at that time 4.2% of the beds in hospitals were unavailable for use.

The principal reasons given were infection prevention measures and staffing issues, although others included:

- Ward refurbishment
- They were escalation beds (beds that can be opened during periods of high demand)
- Equipment problems
- Diarrhoea and vomiting outbreaks

The College also requested comparative figures from 2019, before the arrival of Covid. Responding hospitals told us that in the same period in 2019, just 1.9% of beds were closed, demonstrating the scale of the challenge posed by Covid and its associated issues.

### **Can these beds be reopened?**

Opening additional beds cannot be done without the staff to care for patients who then occupy them, and with a deepening workforce crisis afflicting the NHS, the staffing numbers are not there to meaningfully increase the bed stock right away.

The first step is to implement short, medium, and long-term solutions to address the staffing shortfalls.<sup>36,37</sup> As and when pressures associated with Covid begin to ease, and distancing

<sup>36</sup> <https://www.bmj.com/content/376/bmj.o23>

<sup>37</sup> <https://rcem.ac.uk/rcem-cares/>

becomes less of an imperative, beds that were removed for IPC reasons can also be reinserted to wards.

Sitting alongside a proactive workforce strategy should be a well-thought short and long-term bed strategy. Based on our analysis, RCEM would recommend the NHS have 130,000 beds in service across England as soon as possible to bring the NHS back up to pre-pandemic levels, with a longer-term strategy of opening up an additional 7,000 beds to meet growing demand.

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