

RCEM Explains:



Hospital Beds

This parliamentary briefing explains the trends in hospital bed numbers over the past decade. It should be used to inform discussions of NHS capacity and waiting lists. We model what is required to improve hospital capacity this winter, so the NHS is equipped to manage surges in demand.

Insights

- The reduction in bed numbers in hospitals has contributed to crowding in Emergency Departments (EDs), resulting in patients receiving care in corridors.
- The pandemic has exacerbated this issue, which resulted in a loss of hospital beds across England to maintain social distancing.
- This briefing uses ratio of beds to admissions to model the number of beds required this winter based on three different scenarios.

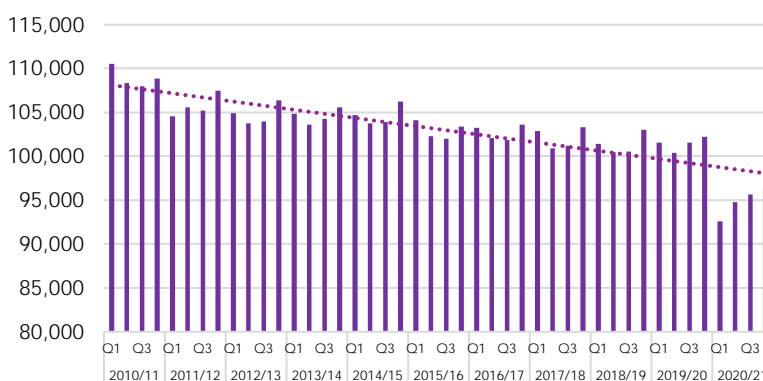
Background

From Q1 2010/11 to Q1 2019/2020, there was a loss of 9,000 general and acute overnight beds in NHS hospitals across England. In this same timeframe, bed occupancy percentages rose from 86% to 90%, considerably higher than the recommended limit of 85%. Moreover, during Q1 of 2020/21, which coincided with the first wave of the pandemic, the number of available beds decreased drastically by 10,000 in order to comply with Infection Prevention and Control measures.

While bed numbers have begun to slowly increase again, hospitals are short of 6,000 beds compared to pre-pandemic levels. Importantly, bed numbers prior to the pandemic should not be seen as the standard that we need to return to, as bed occupancy levels were higher than what is deemed safe and putting strain on hospitals, which in turn can decrease the quality of care that patients receive.

High levels of bed occupancy are an important indication that the health system is under pressure. Maintaining bed occupancy rates of 85% ensures that there's additional

Graph 1: General & Acute Bed Numbers over the Past Decade



capacity in the system to meet surges in demand and to enable patients to receive the care they need in a timely manner. Insufficient bed availability can lead to increased waiting times for patients, crowding and consequently corridor care in EDs, and it can increase the rate of hospital-acquired infections, which has become even more dangerous due to the pandemic.

Winter 2021/22

Winter typically represents the most fraught period in terms of pressures on EDs. However, as a consequence of the pandemic, winter 2020/21 saw significantly fewer emergency and elective admissions, and even with a decrease in the number of active beds in the system, bed occupancy dropped compared with earlier winters.

This year, rather than calculating the probable number of beds each trust would need to achieve the 85% occupancy threshold, we instead elected to look at the ratio of beds to emergency admissions across the NHS. This method allows us to capture the complexity of the hospital system as it directly accounts for the link between demand (admissions) and capacity (beds).

In the last five years, in England this figure has fluctuated between 11.07 admissions per bed (winter 2015/16) and 12.50 (winter 2018/19). Excluding the most recent winters (both of which saw demand and capacity fall due to the pandemic), we arrive at an average of 11.77 admissions per bed.

The number of beds needed to achieve a similar ratio in the 2021/22 winter is contingent on the number of admissions Trusts see. A range of possibilities exist which depend largely on the medium to long-term effects of Covid-19 on demand, staffing and bed numbers.

However, if we assume that demand this coming winter will broadly mirror one of the years between 2017/18 and 2019/20, we can propose a plausible range for the number of additional beds required.

If Comparable Level of Demand in 21/22	Total Number of Beds Needed	Beds Needed in Addition to Current Stock
17/18	129,900	7,588
18/19	138,100	15,788
19/20	127,300	4,988

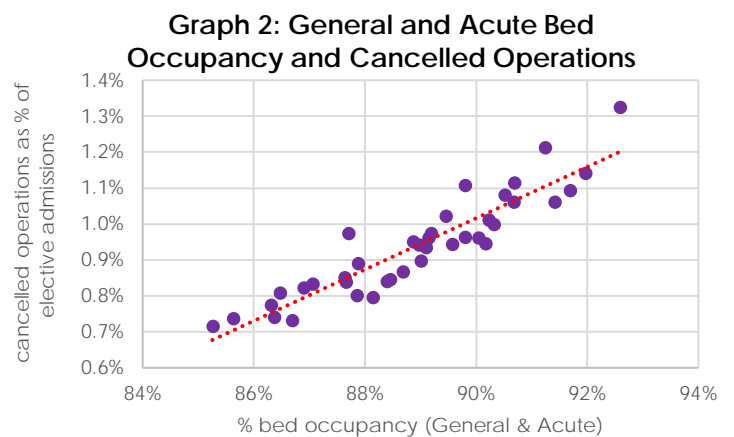
Per the table, with a similar number of admissions this winter as the winter of 2017/18, the NHS will need just over 7,500 additional beds. If demand broadly mirrors that of 2019/20 (which saw Covid-19 significantly diminish admissions), just under 5,000 more beds will be needed. If demand rises to the same levels as 2018/19 however, almost 16,000 more beds will be required to keep the bed to admission ratio broadly in line with recent years.

Thus far in Summer 2021, attendances, and admissions at type-1 EDs have mirrored the highly pressurised winters pre-Covid. If these pressures do not abate ahead of winter, the number of beds required to manage this level of demand is almost certainly going to be at the higher end of the range proposed above.

The wider system

In the short term, we're advocating for a safe restoration of bed capacity to pre-pandemic levels. However, we must see an expansion of the bed stock in line with our OECD peers. This cannot happen without addressing the staffing crisis in the NHS. As the Nightingale initiative during the pandemic revealed, we cannot expand capacity in the NHS if we do not have enough doctors, nurses, and clinicians. Additionally, EDs face the consequences of a failed social care system which does not allow for the timely discharge of vulnerable patients. This often results in patients being cared for in corridors. Any discussion of capacity in the NHS must take into account the challenges facing our social care system.

Elective Backlog



Justifiably, the focus in Spring and Summer 2021 has been on the burgeoning elective treatment waiting list. However, with a diminished bed base this winter, Trusts are liable to find that many (or even most) of their acute beds are occupied by patients receiving emergency rather than elective care. Graph 2 demonstrates the relationship between high bed occupancy and an increased rate of cancelled elective operations. There is a clear correlation that must not be ignored. As [studies](#) consistently [show](#), lack of beds is one of the top reasons for cancellation of surgeries – if the NHS is to avoid seeing its schedule of elective treatment derailed, it must increase its bed stock dramatically before this coming winter.

If you have any questions, please get in touch via policy@rcem.ac.uk