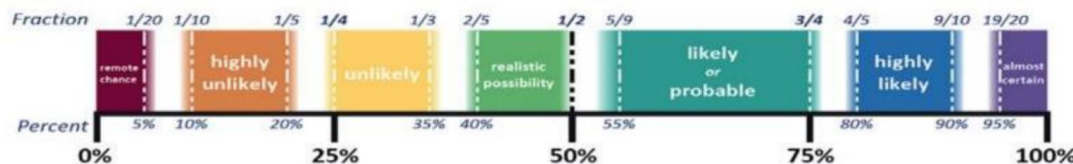


The Joint Biosecurity Centre concludes that: a COVID-19 epidemic is in general circulation; transmission is rising exponentially; it is almost certain that across much of the UK the NHS will exceed its assumed COVID-19 contingency capacity in the next 21 days; and there is a material risk of healthcare services being overwhelmed in England, Wales and Northern Ireland.

This report provides routine advice to UK Chief Medical Officers and the Medical Director for England on the COVID-19 Alert Level.

- The number of COVID-19 patients being treated in hospital is the highest since the start of the epidemic for the United Kingdom as a whole, in Wales, Northern Ireland and England, and in all English regions except the North West.
- The number of COVID-19 patients in hospital continues to grow in all nations. Although it has plateaued in Scotland and Northern Ireland, numbers grew by a third or more over the last 7 reported days in London, the East of England and the South East, and the rate of growth is increasing in neighbouring regions.
- Cases continue to rise, even in areas of England that have been subject to Tier 4 restrictions since 20 December. SPI-M-O (22 Dec) considered that it was *“highly unlikely that measures with stringency in line with November’s England measures (i.e. with schools open) and adherence would be sufficient to maintain R below 1 in the presence of the new variant”* VUI-202012/01.
- The resulting pressure on NHS capacity and staff, as a result of increased numbers of patients in hospital, is highly likely to compromise quality and safety of care, leading to higher mortality and excess deaths.



Current Alert Level (Alert Level 4): A COVID-19 epidemic is in general circulation; transmission is high or rising exponentially

Alert Level 5 Indicators

Indicator 4 – Will the NHS exceed its assumed COVID-19 contingency capacity: in the next 21 days?	Almost Certain
beyond the next 21 days?	Almost Certain
Indicator 1a – Are there more than 10,000 estimated new infections per day?	Yes (Slide 3)
Indicator 1b – Is the weekly case rate greater than 50 per 100,000 population?	Yes (Slide 3)
Indicator 2a – Is ‘R’ greater than 1?	Almost Certain (Slide 3)
Indicator 2b – Is the doubling time of confirmed new infections less than seven days?	No

Alert Level 5 Definition

COVID-19 Alert Level 5: A COVID-19 epidemic is in general circulation; transmission is high or rising exponentially and there is material risk of healthcare services being overwhelmed

CONFIDENCE STATEMENT - We have high confidence in our assessment of the next 21 days due to the number of patients currently in hospital and the rate of growth of the epidemic across much of the UK, evidenced by the Weekly Case Rate.

HIGH

This information is supplied in confidence and must not be disclosed other than to the agreed readership, unless that is with the prior consent of the JBC. This information and the data it contains must be kept securely and appropriate measures must be taken to prevent the unlawful or unauthorised processing of the data it contains. The relevant information management standards must be applied to the storage of and access to this information. This information shall not be shared outside the UK other than with the prior consent of the JBC.

Will the NHS exceed its assumed COVID-19 contingency capacity in the next 21 days? **Almost Certain**

Hospitals are under severe pressure across the UK with sustained high occupancy and continuing steep increases in COVID-19 patients.

The number of COVID-19 patients in hospital is rising steeply in **Wales** ■ and **England** ■. Occupancy continues to plateau in **Northern Ireland** ■. In **Scotland** ■, COVID-19 patient numbers are rising again, but are at lower levels relative to the other nations. (Figure 1)

COVID-19 hospital occupancy rates are above 30 per 100,000 population in **Wales** and **all of England** except the **South-West** ■ (Figure 2). Occupancy rates are rising slowly in **Scotland** from lower levels. (Figure 1)

As a comparison, COVID-19 hospital occupancy has exceeded its Spring Peak across all parts of the **United Kingdom** except **Scotland** (72%) and **North West England** ■ (85%). (Table 1, Slide 3)

Weekly Case Rates near or above 400 per 100,000 population across **Wales**, **England** and **Northern Ireland** will continue to drive increases in patients in hospital over the next 21 days⁵. (Table 2, Slide 3)

For **Northern Ireland**, the UK and NI dashboards have not been consistent, with the UK dashboard showing a reduction, but the NI dashboard showing numbers plateauing. However, hospitals continue to exceed Spring Peak levels by at least 40% and remain under sustained pressure. (30 Dec)

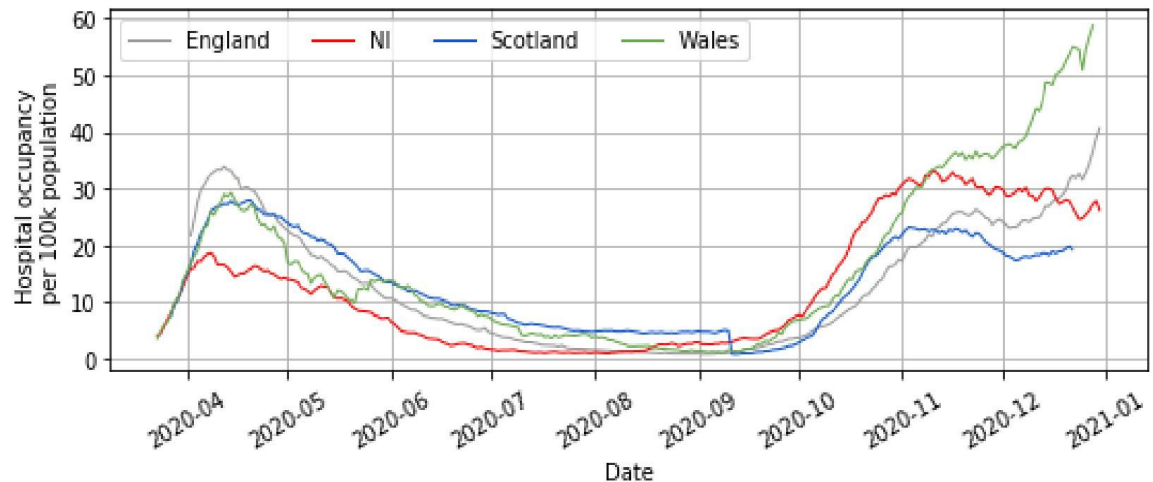


Figure 1: COVID-19 Patients in Hospital per 100k population by nation. Data source: Gov.uk/dashboard

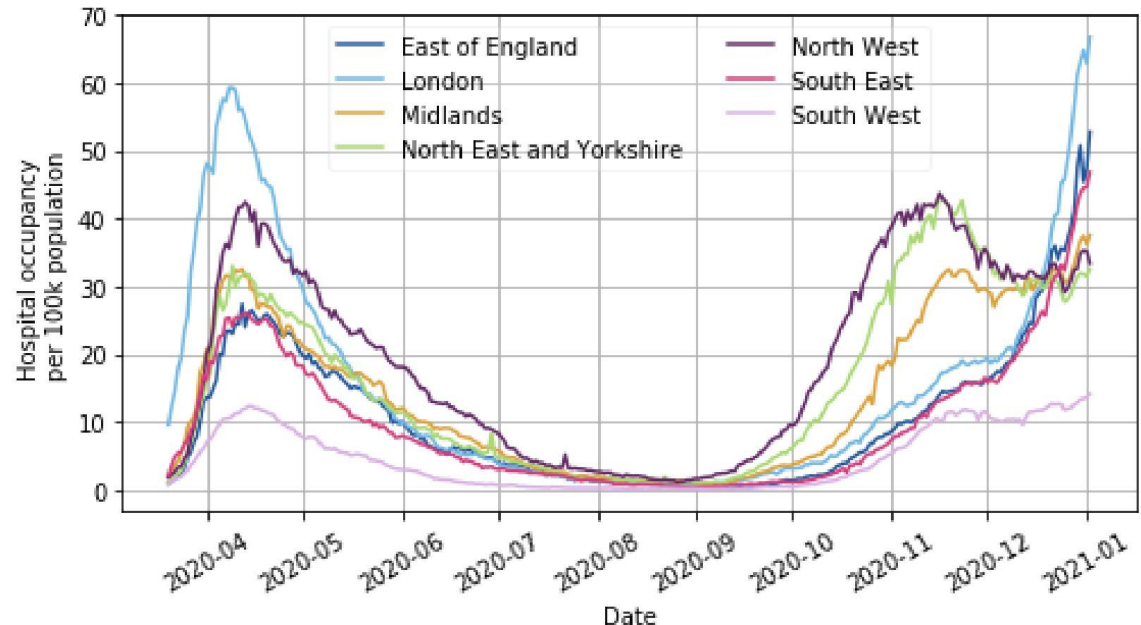


Figure 2: COVID-19 Patients in Hospital per 100k population by NHS England Region. Data source: Gov.uk/dashboard

What are the trends in the data and what can we say beyond 21 days?

The NHS is almost certain to exceed its COVID-19 contingency capacity, with the epidemic growing in all nations, and COVID-19 patients in hospital exceeding the Spring Peak.

The epidemic is growing in all nations despite restrictions in place from early December. The Weekly Case Rates calculated in late December (Table 2) suggest that the SPI-M consensus R estimates of 1.1 – 1.3 for the UK as a whole are still likely. (22 Dec, Table 3). SPI-M-O considered that it was *“highly unlikely that measures with stringency in line with November’s England measures (i.e. with schools open) and adherence would be sufficient to maintain R below 1 in the presence of the new variant [VUI-202012/01]”*.

The Christmas period saw 20-40% drops in testing rates across England but in many areas test positivity has risen to 20 – 25%.

The number of COVID-19 patients in hospital across the UK has now exceeded the Spring Peak, except for Scotland and North West England. The number of patients in hospital has increased by 16% or more in all NHS England Regions in the 7 days to 02 January. Wales, Scotland and Northern Ireland are experiencing slower growth, but from high levels of occupancy.

At the current levels of patient load, ICUs are operating at a capacity at or substantially above their formally commissioned capacity. This is almost certain to continue as cases and hospitalisations surge and is highly likely to compromise quality and safety of care leading to higher mortality and excess deaths.

As identified in previous updates, patient safety is highly likely to be at risk. Previous studies have shown high levels of psychological injury amongst healthcare staff correlate with patient load. These levels are known to cause functional impairment of the workforce and to impact patient safety.²

UK COVID-19 Patients in Hospital Compared to Last Week’s Data and Spring Peak

Patients in hospital (latest available dates by nation/region)			Spring Peak	
Geographic Area	Actual beds	Weekly Change (%)	Actual beds	Current level as %
Nations	UK (28 Dec)	+13%	21,683	Exceeded (110%)
	England (03 Jan)	+29%	18,974	Exceeded (132%)
	Northern Ireland (30 Dec)	+2%	352	Exceeded (140%)
	Scotland (29 Dec)	+4%	1,520	72%
	Wales (28 Dec)	+10%	919	Exceeded (201%)
NHS England Regions	North East & Yorkshire (02 Jan)	+16%	2,661	Exceeded (102%)
	North West (02 Jan)	+17%	3,065	85%
	Midlands (02 Jan)	+22%	3,430	Exceeded (119%)
	South West (02 Jan)	+25%	1,080	Exceeded (123%)
	East of England (02 Jan)	+43%	1,679	Exceeded (202%)
	South East (02 Jan)	+34%	2,347	Exceeded (192%)
	London (02 Jan)	+38%	5,201	Exceeded (122%)

Table 1: COVID-19 Hospital occupancy. Data source: gov.uk and NHS England dashboards

Weekly Case Rate Per 100,000 by Nation (29 Dec)

Nation	Current (29 Dec)	Previous (22 Dec)	Change ³
U.K	450.6	381.8	+18%
England	476.9	400.4	+19%
Northern Ireland	394.9	224.8	+76%
Scotland	188.3	130.4	+44%
Wales	469.4	579.9	-19%

Table 2: Weekly case rates per 100k. Data source: gov.uk dashboard.

SPI-M-O Consensus R Estimates (22 December)

Nation	R Value
U.K	1.1-1.3
England	1.1-1.4
Northern Ireland	1.1-1.3
Scotland	0.9-1.1
Wales	1.0-1.3

Table 3: R numbers. Data source: SPI-M consensus and devolved administration communication. 22 Dec.

INQ000276568_0003

Referencing Annex & Glossary of Terms

Reference	Data source
Figure 1	Gov.uk/dashboard (accessed 03 Jan 2021) https://coronavirus.data.gov.uk/details/healthcare
Figure 2	Gov.uk/dashboard (accessed 03 Jan 2021) https://coronavirus.data.gov.uk/details/healthcare
Table1	Gov.uk/dashboard (accessed 03 Jan 2021) https://coronavirus.data.gov.uk/details/healthcare NHS England COVID-19 Hospital Activity (accessed 03 Jan 2021) https://www.england.nhs.uk/statistics/statistical-work-areas/covid-19-hospital-activity/
Table 2	Gov.uk/dashboard (accessed 03 Jan 2021) https://coronavirus.data.gov.uk/details/healthcare
Table 3	SPI-M-O: Consensus Statement on COVID-19, Devolved administration communication (22 nd Dec 20)
Footnote 1 (slide 3)	SPI-M-O: Consensus Statement on COVID-19, Devolved administration communication (22 nd Dec 20)
Footnote 2 (slide 3)	Rona et al, The impact of posttraumatic stress disorder on impairment in the UK military at the time of the Iraq war. J Psychiatr Res. 2008 Oct 22.
Staffed Bed Capacity	Refers to beds that are fully staffed, funded and available for use by patients. (https://www.kingsfund.org.uk/publications/nhs-hospital-bed-numbers)
Psychological Injury	Psychological injuries are stress-related emotional conditions resulting from real or imagined threats or injuries. Such disorders include post-traumatic stress disorder (PTSD), acute stress disorder (ASD), major depressive episode (MDE), substance abuse disorders, and a myriad of other less-defined anxiety and depressive reactions. It is a concept that involves harm, though harm of a primarily nonphysical nature (acknowledging that many psychological conditions have biophysical correlates). The concept also involves not only harm, but enough harm to mean that it needs to be considered by legal mechanisms. (Koch, W.J., Douglas, K.S., Nicholls, T.L. and O'Neill, M.L., 2005. Psychological injuries: Forensic assessment, treatment, and law. Oxford University Press.)