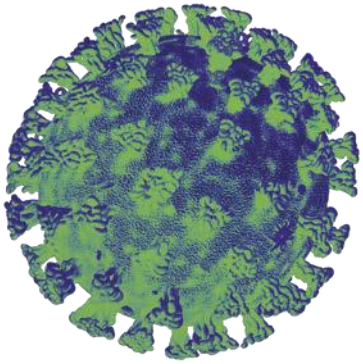
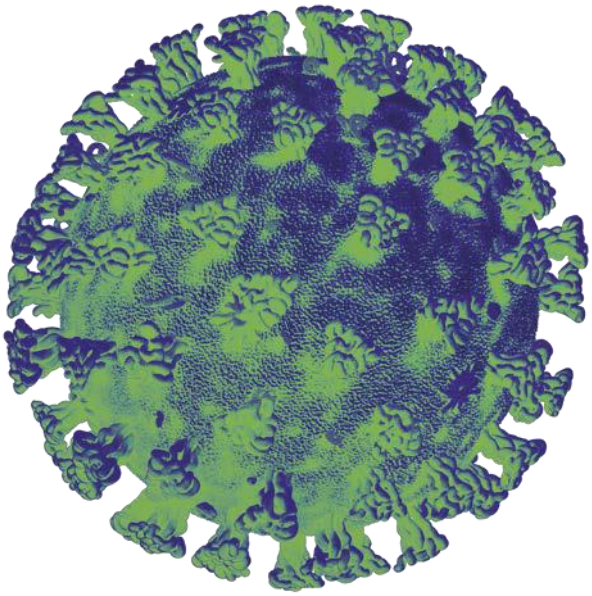
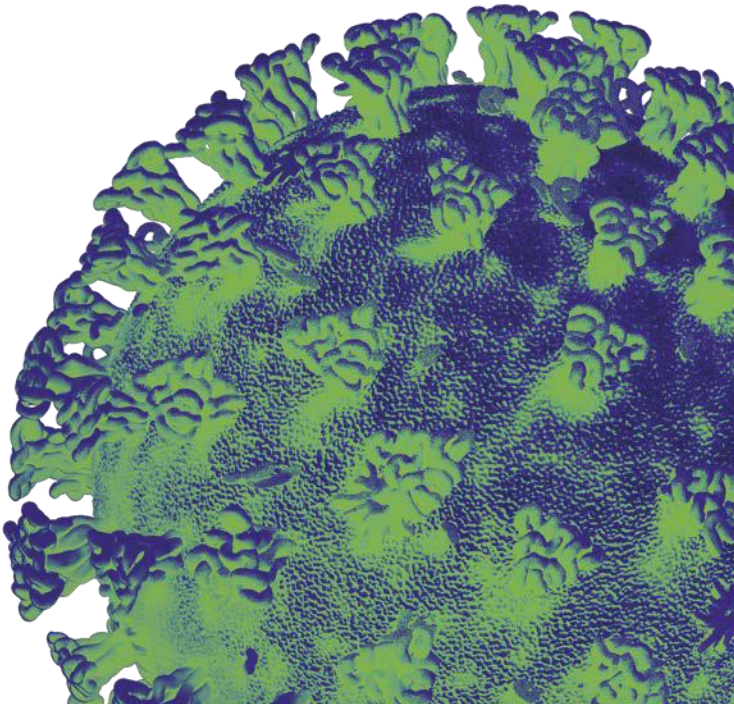
Llywodraeth Cymru
Welsh Government

Advice from the Technical Advisory Cell and Chief Scientific Advisory for Health: 21-Day Review

7 April 2022

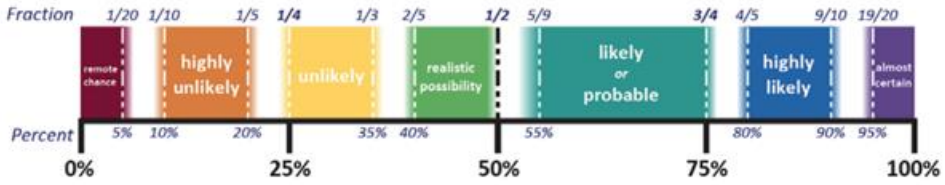






This advice has been drafted based on the available evidence at the time of writing and has been assembled to support policy colleagues and Welsh ministers. The purpose of scientific advice is to provide an overview of what we know from scientific and technical investigations, what we can infer indirectly from the evidence base or by a consensus of expert opinion. This is advice, not Welsh Government policy.

Where appropriate, TAC advice will express Likelihood or confidence in the advice provided using the PHIA probability yardstick to ensure consistency across the different elements of advice.



Top Line Summary

- Community transmission of the Omicron wave of COVID-19 continues at a very high level across Wales and the UK (**almost certain**). The current dominant variant in Wales is VOC-22JAN-01 (Omicron, BA.2) which accounted for 93% of sequenced cases in the last 14 days.
- The ONS community infection survey indicates that prevalence is higher in Wales than it has ever been, suggesting that **1 in 13** people have COVID (**likely**)
- The wastewater surveillance dated 7 April suggest that since last week, SARS-CoV-2 viral load has decreased across most of the country (excepting north-west Wales). Most collection sites have shown a downturn in the last week, indicating that the peak of this wave may have been passed in many areas of Wales (**likely**).
- The number of COVID-19 confirmed patients in hospitals in Wales seems to be plateauing and could be beginning to decrease (**likely**). However, the high demands and high levels of staff absence in healthcare and social care mean that the care system is still experiencing extreme pressure.
- Wales Intensive Care data shows that the length of stay for those admitted to critical care has decreased from a mean of 4.1 days between Sep 2020 and April 2021 to a mean of 2.5 days between May 2021 and February 2022.
- The most effective personal protective behaviours continue to be to meet outdoors where possible, to avoid poorly ventilated areas, to wash hands well and to wear a good quality, well-fitting face covering when indoors or in large crowds.
- Whilst the current wave of infection lies within the bounds of “COVID Stable”, there continues to be a risk of a successful variant that has a higher degree of avoidance to vaccine derived immunity. It is appropriate to continue to make plans for COVID Urgent in the future.

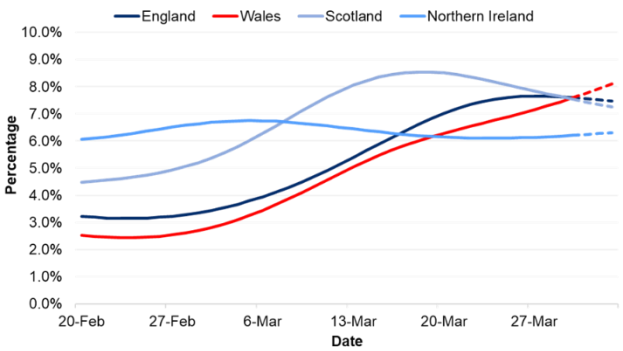
1. Wales situation

- The latest COVID-19 Situational Report dated 07 April 2022, containing the most recent data on epidemiological surveillance, NHS status, wastewater monitoring, education and children, international travel, mobility, vaccination and population immunity and forward projections for Wales is attached with this advice.

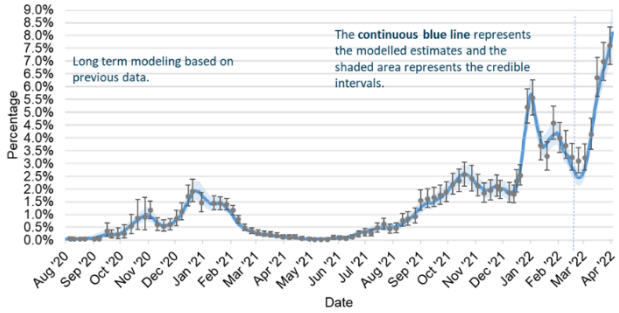
Case and infection surveillance

- **PHW case data will be heavily impacted by changes to testing behaviours and recent policy changes around test availability. As a result this data will be much less reliable than previously and so is not included in this situation report.**
- PHW are also not currently providing calculations of the reproduction number and doubling time for COVID-19 cases, as estimation of these values is not currently valid due to the quickly decreasing level of community testing following changes in testing policy.
- Recent estimates from the ONS COVID Infection Survey, which provides a relatively unbiased but lagged estimate of levels of infection, suggests in the week ending 2 April 2022 the percentage of people testing positive for COVID-19 in the community has continued to increase in Wales over the most recent week and is at the highest levels seen from the COVID-19 Infection Survey to date.
- Between 27 March 2022 and 2 April 2022, it is estimated that an average of 230,800 people in Wales had COVID-19 (95% credible interval: 208,900 to 253,100). This equates to 7.59% of the population who had COVID-19 (95% credible interval: 6.87% to 8.33%) or around 1 in 13 people.
- At a UK level the percentage of people testing positive increased in Wales and decreased in Scotland in the most recent week. England remains high in the most recent week but there are early signs that some regions may no longer be increasing. The trend is uncertain in Northern Ireland.
- In the most recent week, 1 in 13 of the community population in Wales had COVID-19. This compares to one in 20 people in England, and one in 14 people in Scotland and Northern Ireland (left chart below).

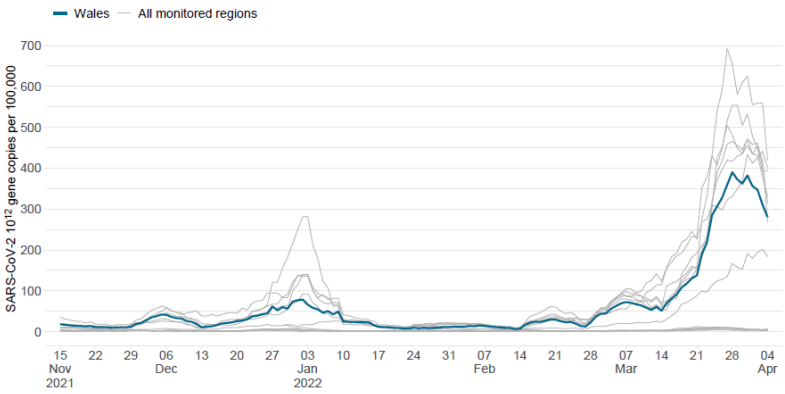
CIS: Positivity rates (%) across UK nations

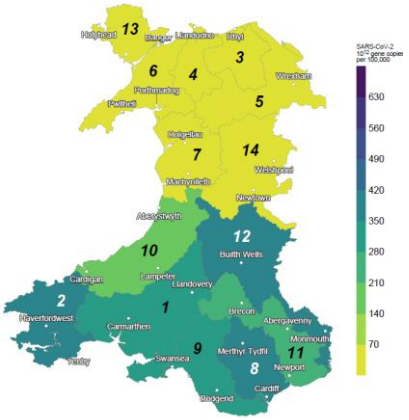


CIS: Wales long term trends, estimated % testing positive



- Waste-water surveillance dated 7 April suggest that since last week, SARS-CoV-2 viral load has decreased across most of the country (excepting north-west Wales). Trends in the national mean wastewater signal are somewhat unstable, but the overall direction appears to be turning to a decline following a period of marked increase in the last few weeks.





Vaccination and immunity

- More than 2m people have now received a booster or third vaccine in Wales. That is 87% of those eligible by 4 April. The average daily number of boosters given out has dropped below 800 in the last week, as this part of the programme is close to the end.

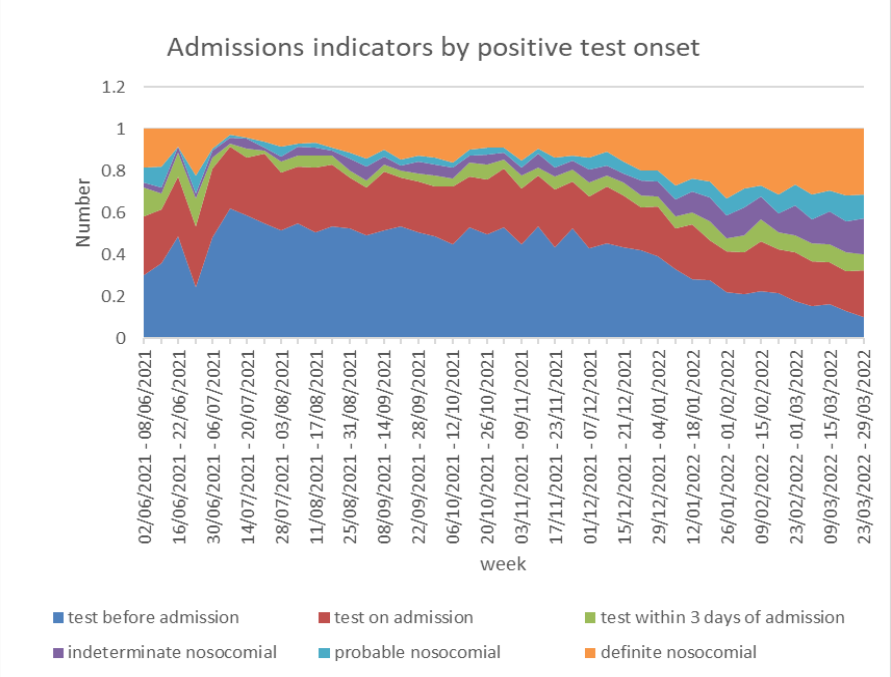
NHS capacity and mortality

- Non-COVID-19 urgent & emergency pressures continue to result in high levels of hospital bed occupancy and escalation across hospital sites, although the number of COVID-19 confirmed patients has decreased in the most recent week. There remains the potential for significant harm in the community (and hospitals) for people with non-COVID-19 illnesses or injuries, which exceed the direct harm from COVID-19.
- As of 5 April 2022, the number of COVID-19 related patients in hospital beds (confirmed, suspected and recovering) is 1,373; 95 (6%) higher than the same day last week. Of these, 860 are confirmed COVID-19 patients; 171 (18%) lower than the same day last week.
- The total number of occupied beds in a critical care environment is 196; 31 higher than the same day last week and 44 higher than the pre-COVID-19 baseline of 152 critical care beds. Of these, 17 are COVID-19 related patients in critical care, no change from than the same day last week but just under half the peak number observed in early January.
- Critical care data for Wales from ICNARC's most recent report[1], covering the period 1 May 2021 to 28 February 2022, suggests the mortality rate of a

[1] https://www.icnarc.org/DataServices/Attachments/Download/ed64fa72-e99b-ec11-913c-00505601089b

critical care COVID patient is around 36% (n=224), including those who died later in a general and acute ward (4.1%, n=19). Length of stay for those admitted to critical care has also decreased from a mean of 4.1 days between Sep 2020 and April 2021 to a mean of 2.5 days between May 2021 and February 2022. The average age is 55, almost two-thirds are men and those who are overweight are over-represented compared to the general population. The most socio-economically deprived 40% are also over-represented in ICU admissions and above average proportions were black or Asian. Just under a third are aged under 50. More than 81% were primarily in critical care to be treated for COVID.

- ICNARC analysis for England[2] (unavailable for Wales) for the same time period showed the percentage of patients admitted to critical care with confirmed COVID-19 that were unvaccinated decreased from 74% in May 2021 to 44% in January 2022, compared with a reduction from 35% to 8% among the general population.
- The number of hospital-acquired infections remains at a high level (see below chart), with PHW reporting 43% of hospital cases as probable or definite hospital onset (positive test 8-14 days and >14 days after admission, but just under half the peak number we saw in early January. respectively) for the 7 day period ending 29 March 2022, compared to 39% for the period ending 15/3/2022. This likely reflects the difficulty of managing BA.2s increased transmissibility in a hospital setting and may result in increased length of stay times.



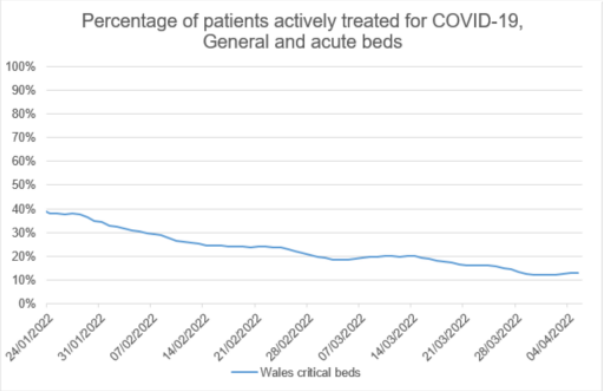
Data source: PHW ICNet data

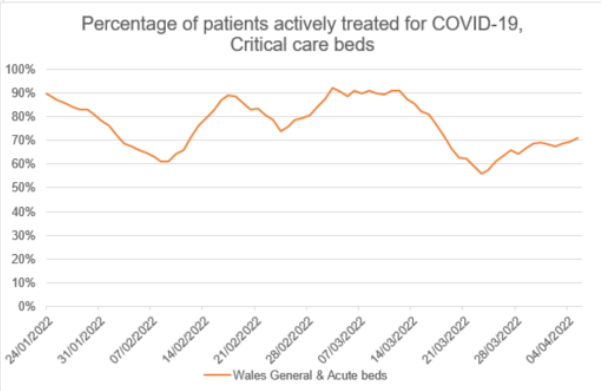
- Since reporting began on 17 January 2022, the number of patients with confirmed COVID-19 and the number of patients treated for COVID-19

[2] https://www.icnarc.org/DataServices/Attachments/Download/1030e662-e99b-ec11-913c-00505601089b

generally decreased until early March 2022. Over recent weeks there has been an increase in the number of patients with confirmed COVID-19. However, the percentage of patients treated for COVID-19 in acute and general beds has decreased since reporting began at the beginning of March.

- The percentage of patients treated for COVID-19 in critical care beds is markedly higher than the percentage treated for COVID-19 in general and acute beds. Since reporting began, the percentage of patients treated for COVID-19 in critical care beds has ranged between 46% and 100%, while for general and acute beds the percentage has ranged between 11% and 45%.
- As at 5 April 2022, 611 general and acute beds in hospital were occupied with patients with confirmed COVID-19 and 14.7% (90) of these patients were actively treated for COVID-19. 17 critical care beds in hospital were occupied with patients with confirmed COVID-19 of which 82.4% (14) of these patients were actively treated for COVID-19. *Note there is no standard definition for 'actively being treated for COVID-19' and there are some differences across Health Boards and settings in the methods used to make the decision, although these figures are considered suitable for providing a high level estimate.*
- A previous analysis from the SAIL databank to TAG for the period February 2020 to August 2021 estimated that, on average, during this period 71.2% to 88.5% of admissions of people to Welsh hospitals where COVID19 is mentioned anywhere in the discharge diagnoses were directly due to COVID-19[3]. Note that the methodology between these two analyses may differ and so should be interpreted with caution, although data from NHS England[4] supports that the number of people treated primarily for COVID has almost halved following the emergence of the Omicron variant.





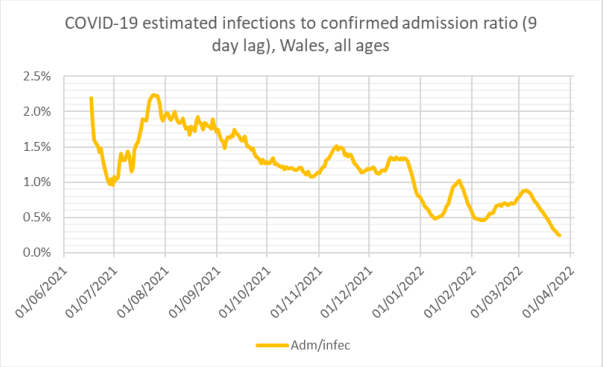
- As at 1 April 2022, the number of weekly COVID-19 deaths reported by PHW has reduced by 7.5% to 49 compared to the previous week, after increasing from a weekly sum of 18 three weeks ago on March 11.
- Lagged ONS death reporting as at 5 April suggests there were 45 deaths involving COVID-19 in the week ending 25 March 2022 (6.7% of all deaths).

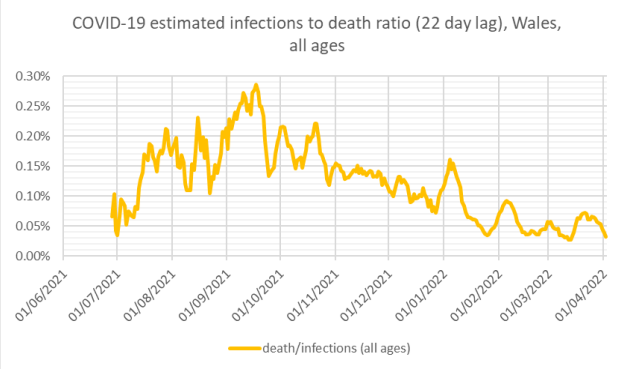
[3] technical-advisory-group-COVID-19-hospital-admissions.pdf (gov.wales)

[4] Catalogue (england.nhs.uk)

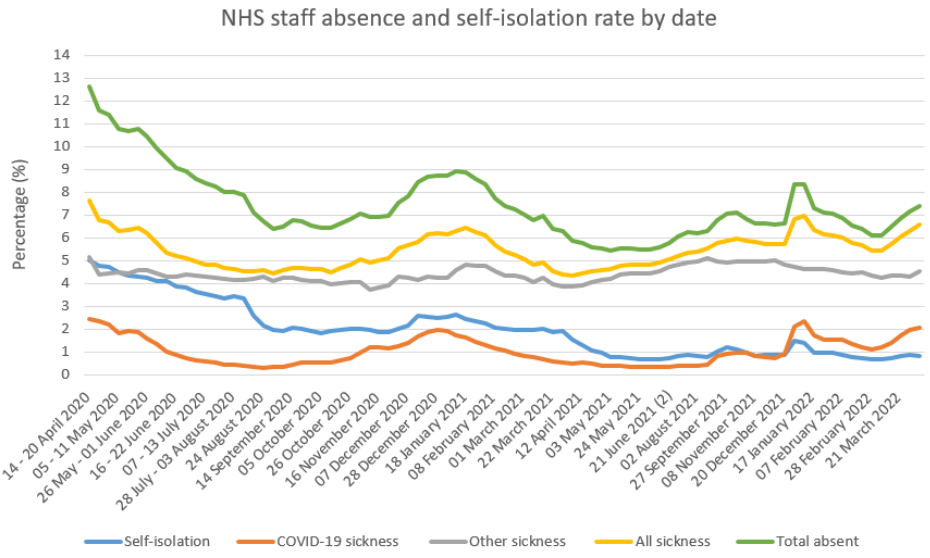
The total number of deaths in Wales is 0.1% above the five-year average (1 more death). *Note that PHW death reporting only includes deaths of a hospitalised patient in Welsh hospitals or care home residents where COVID-19 has been confirmed with a laboratory test and a clinician suspects this was a causative factor in death. As a result the true figure may be higher.*

- Infection to hospital admission ratios (left chart below) suggest that the number of infections translating into admissions continues to decrease. Infection to fatality ratios (right chart below) also decreased following the rise of Omicron and appear to currently be decreasing.





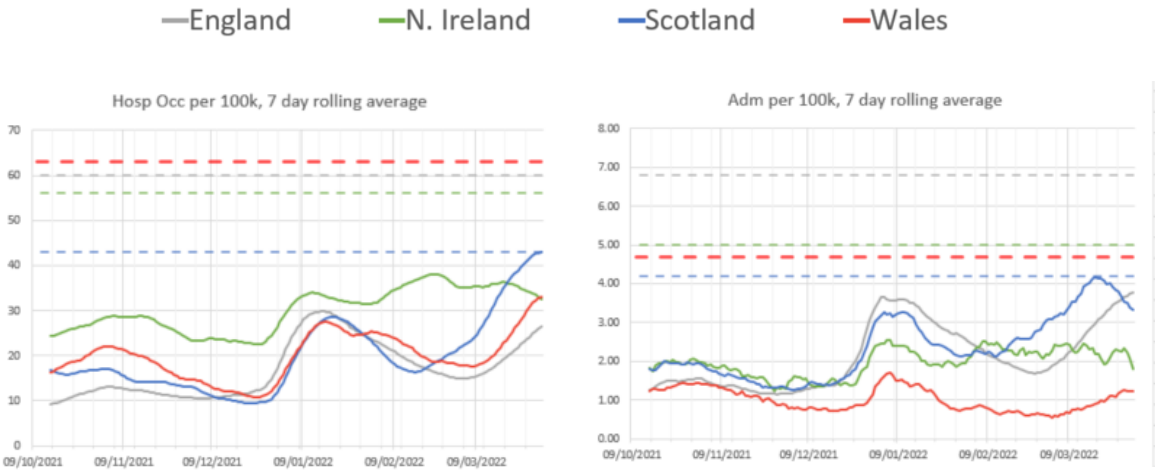
- Latest figures show NHS staff sickness related to COVID-19 in Wales has risen again slightly in the last week.
- NHS staff absence due to COVID-19 has increased since the beginning of March to 2.1% as at 4 April, comparable to levels in December 2020 and 2021 (1.9% and 2.3% respectively). The number of staff self-isolating has also increased by to a lesser extent and is at 0.8% as at 4 April. Overall NHS staff absence from isolation or any sickness has increased through March to 7.4%, slightly lower than levels reported in December 2020 and 2021 (8.7% and 8.3% respectively).

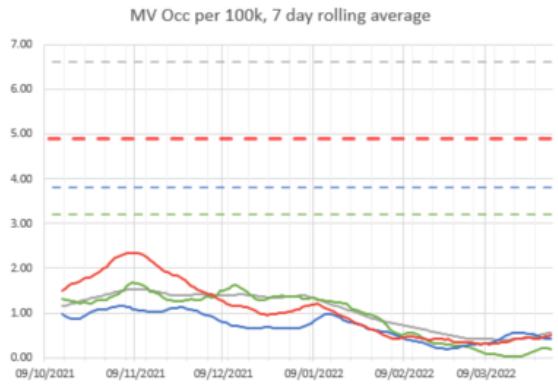


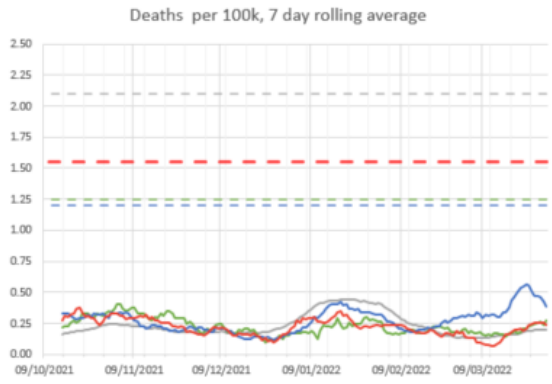
2. Situation in the UK and comparator regions

UK Overview

- Surveillance data for the four nations is summarised below. Note that peak levels for each nation are indicated by the dotted lines. (Data source: UK Summary | Coronavirus (data.gov.uk)).
- **Note that this data is classified as management information rather than official statistics and there may be differences in methodology between the nations**. As a result caution should be taken when interpreting this data. For example Wales admissions, unlike the other UK nations, does not include hospital acquired infections. Full documentation is available at Metrics documentation | Coronavirus in the UK (data.gov.uk). Case data is no longer included in this analysis due to the rapidly decreasing level of community testing reducing this data's reliability.
- Recent data suggests that admissions data may have peaked in Scotland, after reaching the highest levels recorded to date. England appears to be continuing to increase, while the trend for Northern Ireland and Wales remains uncertain.
- In terms of hospital occupancy, there may be early signs of a plateau in Scotland and Wales, while England continues to increase and Northern Ireland may be decreasing after a period of stable high levels.
- ICU/ Mechanically ventilated bed occupancy remains low in all 4 nations compared to previous waves, although this appears to be decreasing in Scotland after a recent peak, increasing in Wales and England and stable in Northern Ireland.
- The number of deaths has increased across the four nations but remains low compared to previous waves and appears to have peaked in Scotland.







3. International overview

- According to the World Health Organisation's most recent weekly epidemiological report[5], after the increase observed during the first half of March 2022 the number of new COVID-19 cases has decreased for a second consecutive week, with a 16% decline during the week of 28 March through 3 April 2022 as compared to the previous week.
- The number of new weekly deaths also decreased sharply (-43%) as compared to the previous week, during which an artificial spike in deaths was observed.
- Across the six WHO regions, over nine million new cases and over 26 000 new deaths were reported, and all the regions show decreasing trends both in the number of new weekly cases and new weekly deaths.
- As of 3 April 2022, just over 489 million cases and over 6 million deaths have been reported globally.
- The Omicron variant remains the dominant variant circulating globally, accounting for nearly all sequences recently reported to GISAID. Among the 417 147 sequences uploaded to GISAID with specimens collected in the last 30 days, 416 175 (99.8%) were Omicron, 141 (<0.1%) were Delta, and 562 sequences were not assigned to a Pango lineage (<0.2%). The total number of submitted Omicron sequences continues to decline, a trend observed for each of the Omicron descendent variants.
- These trends should be interpreted with due consideration of the limitations of surveillance systems, including differences in sequencing capacity and sampling strategies between countries, as well as laboratory turn-around times for sequencing and delays in reporting.

4. Omicron variant of concern – BA.2 (VUI-22JAN-01) update

- As discussed in the recent TAC Brief[6], based on growing evidence UKHSA have advised that although vaccine effectiveness against symptomatic disease with the Omicron variant is substantially lower than against the Delta variant, protection against hospitalisation remains high, particularly after 3 doses. High levels of protection (over 90%) are also seen against mortality

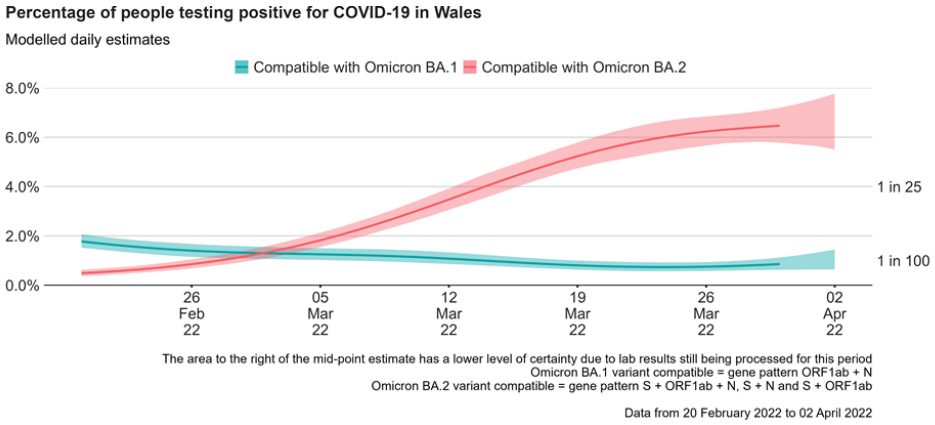
[5] Weekly epidemiological update on COVID-19 - 5 April 2022 (who.int)

[6] Technical Advisory Cell: summary of advice 1 April 2022 | GOV.WALES

with all 3 vaccines, with relatively limited waning. There is no evidence of an increase in hospital attendance or admission for BA.2 compared to BA.1 in England. Similar findings have been published from South Africa.

- The most recent UKHSA Risk assessment of the BA.2 variant of concern, dated 23 March, is shown below – since the previous assessment all indicators have been upgraded to **high confidence**. The overall growth advantage of BA.2 is supported by the finding of increased household and non-household secondary attack rates for BA.2 compared to BA.1, although this has not been adjusted for vaccination. Data around an increased viral load for BA.2 requires further assessment but is likely be a significant contributor to the growth advantage.
- Data suggests limited antigenic distance between BA.1 and BA.2, meaning that cross-protection will be maintained, although some experiments suggest a slight reduction in BA.2 neutralisation. The number of BA.2 reinfections been detected in the ONS Community survey has been small to date, but this number may increase with time after initial BA.1 infection.

- While BA.2 took longer to become dominant in Wales compared to the other UK nations, the ONS Community survey estimates the percentage of people testing positive for strains compatible with Omicron BA.1 (blue) and BA.2 (red) has continued to decrease (BA.1) and increase (BA.2) respectively in the most recent week. This trend is observed across the four nations.



- PHW reports that as of 5 April 2022 there have been 56,058 cases of VOC-21NOV-01 (Omicron, BA.1) and 21,905 cases of VOC-22JAN-01 (Omicron, BA.2) in Wales
- The current dominant variant in Wales is VOC-22JAN-01 (Omicron, BA.2) which accounted for 93% of sequenced cases in the last 14 days.

Note this reporting also captures samples from previous weeks that have since been sequenced and is therefore not a reliable estimate of weekly infections[7].

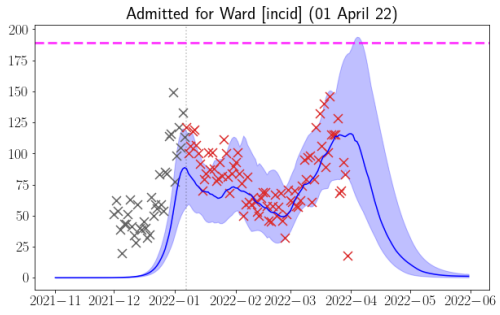
[7] Rapid COVID-19 virology - Public | Tableau Public

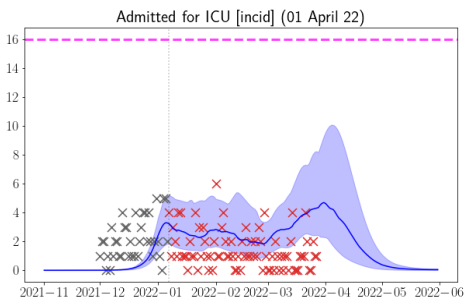
Previous advice from TAC included a note on viral recombination[8]. As at 6 April, the UK Variants Technical Advisory Group has recommended that 4 Recombinants under monitoring are designated variants: (OFF-SEN)

- **XE** - due to growth (Combination of BA.1 and BA.2, growth is 12.6% higher than BA.2 but has risen to 21.5% in the previous two weeks - data to 30/03/22. Over 1,000 XE sequences confirmed by UKHSA, case definition is currently being confirmed so we can run checks in Wales).
- **XD** - for its biological properties (Very similar to BA.1, only small number of samples sequenced globally and not detected in UK to date).
- **BA.4** - growth and international spread (Very similar to BA.2, lineage has been circulating for some time but recently seen an increase in samples. Majority of samples coming from South Africa).
- **BA.5** - in order to monitor it effectively and not include in BA.4 analyses as they are very similar (All samples so far from South Africa)

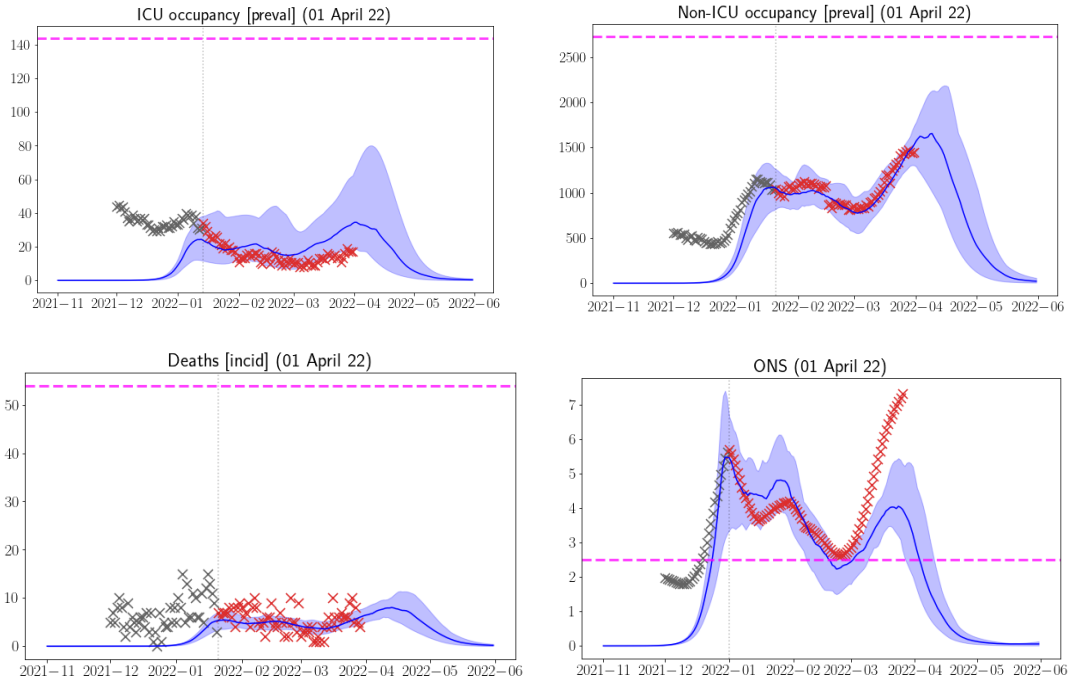
5. Swansea University COVID-19 Medium Term Projections - 1 April

- The most recent MTPs from Swansea University, dated 1 April, suggest a less challenging scenario, with up to 1700 beds occupied by COVID-19 patients (including recovering and suspected), compared to the 2000 figure projected last week.
- The pressures in ICU are lower than previous waves, however they may increase to around 30-40 ICU beds occupied. The projections still suggest that deaths may also slightly increase before peaking.
- The most recent data from ONS estimates that prevalence (percentage testing positive for COVID-19) in Wales is increasing, however the medium-term projections estimate a decrease over the next few weeks. This is because the model is jointly fitted to all the data and the decrease in hospitalisations leads to an overall decrease in the projected prevalence.
- These scenarios are recalibrated every week depending on what has happened the week before; during the last there has been slower growth in transmission so the scenarios are better than the week before.





[8] advice-technical-advisory-cell-and-chief-scientific-advisor-health-21-day-review-21-march-2022.pdf (gov.wales)



6. Adherence to protective measures/ Behavioural Response

- Previous advice[1] around the importance of personal protective behaviours remains relevant, particularly with the rise of the more transmissible BA.2 subvariant.

- The latest available data for Wales[2] (collected 1-4 April 2022) suggest that while the perceived threat (both personal and to the country) from COVID-19 has gradually fallen, this has remained stable in recent waves (20% and 29% report a high threat to self and country, respectively). There is still evidence of (self-reported) adherence some protective measures. For example, two in five (40%) report keeping their distance when out, three in five (62%) report regular hand washing and around one in four (27%) continue to report the use of lateral flow tests before meeting other people. However, the proportions reporting to wear a face covering or report working from home where feasible are 61% and 20% respectively (down from 72% and 30% in mid-March). Some seven in 10 continue to report Welsh Government doing a good job in its handling of the pandemic, remaining similar to the levels reported throughout the pandemic.

- The decline in (self-reported) protective measures since the removal of Plan B measures in England reported in previous advice[3] has continued according to the most recent ONS data at GB level from the Opinions and Lifestyle Survey[4]. These data suggest (self-reported) use of face coverings, maintaining distance and use of lateral flow tests is now lower, as is the proportion reporting to work from home. The proportion worried about the impact of COVID-19 on their lives is also at the lowest level recorded to date.

- Latest mobility data for Wales[5] indicate minimal change in the latest reporting period (mid-March), although levels still remain the early 2020 baseline for some categories (e.g. public transport, workplaces and retail and recreation).

7. NPI response

- In February 2022, SPI-M-O estimated that a combination of measures and behavioural change since before the pandemic (such as, but not limited to testing, self-isolation, mask wearing, increased home working and the avoidance of high-risk settings) were reducing transmission by approximately 20-45%. This estimate was equivalent to there being the potential for transmission to increase by between around 25%-80% if the population were to return to pre-pandemic behaviours and no mitigations[9].
- On that basis, if remaining regulations expire, the recommendation to follow protective behaviours where possible is both important and consistent with advice for COVID Stable (**highly likely**).
- Previous advice that messaging needs to be clear, with a supporting rationale and sense of what such behaviour can achieve (i.e. reduced infections and possible associated harms) is important[10].
- Measures can be proportionate, such as wearing a mask, working from home if feasible and ventilating the home.
- Previous advice regarding the evidence supporting use of face coverings and other protective behaviours remains relevant[11] [12].

[9] SPI-M-O: Consensus statement on COVID-19, 2 February 2022 - GOV.UK (www.gov.uk)

[10] S1514_SPI-B_note_on_lifting_restrictions.pdf (publishing.service.gov.uk)

[11] advice-technical-advisory-cell-and-chief-scientific-advisor-health-21-day-review-21-march-2022.pdf (gov.wales)

[12] advice-technical-advisory-cell-and-chief-scientific-advisor-health-21-day-review-21-march-2022.pdf (gov.wales)