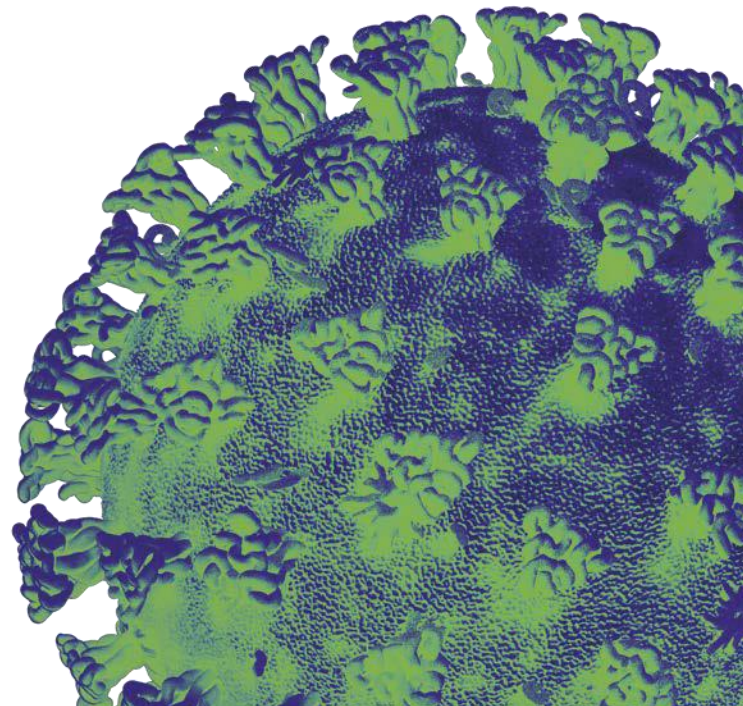
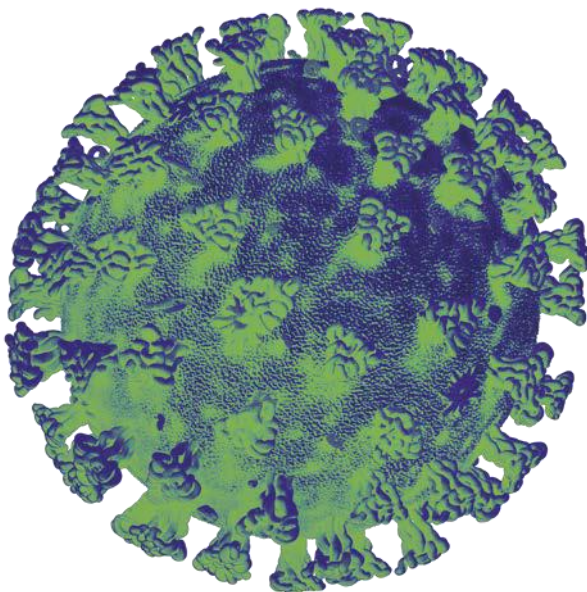
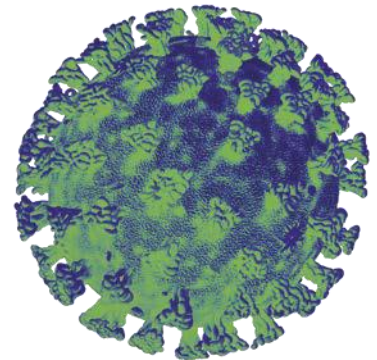




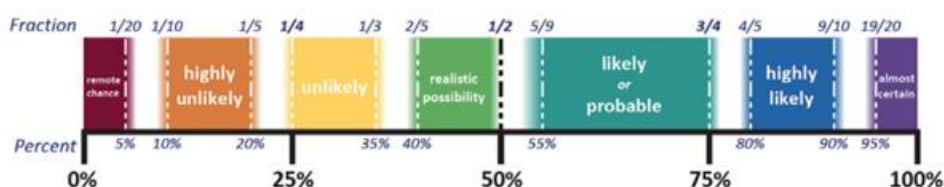
# Advice from the Technical Advisory Cell and Chief Scientific Advisory for Health: 21-Day Review

21 March 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.*



## Summary

In the most recent advice period several new trends have emerged in surveillance data:

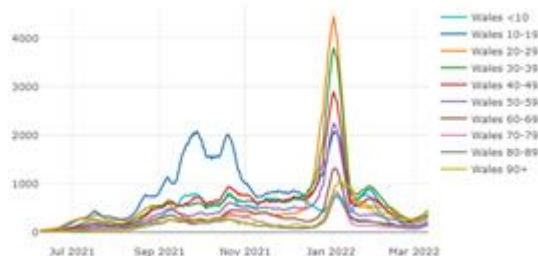
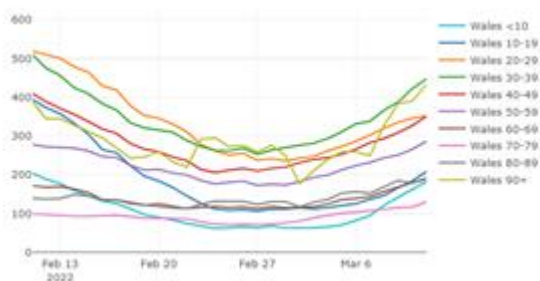
- Infection and case surveillance suggest that COVID-19 cases and test positivity in Wales are increasing (**high confidence**).
- COVID-19 admissions to hospitals in Wales have begun to increase, as has the number of hospital-acquired infections (**high confidence**).
- Hospital admissions and hospital occupancy with COVID-19 are **likely** to increase in Wales in the coming weeks. Hospital acquired cases are also **highly likely** to increase.
- ICU admissions as a result of COVID-19 are low and **likely to remain stable (moderate confidence)**.
- BA.2 is **almost certain** to be the dominant COVID-19 subtype in Wales, estimated to be at least 70% of new cases. It is **likely** the clinical severity of BA.2 is similar to BA.1.
- Due to changes in testing, hospitalisation data will become increasingly important to understanding the epidemic. Further analysis will be required to fully understand the cause of these trends, which may include changes in testing, relaxation of mitigations, behavioural change, changes in length of stay, impact of the more transmissible BA.2 variant or likely some combination of the above.
- TAC would continue to strongly advocate close surveillance of COVID-19 trends and clear messaging and support for the continuation of personal protective behaviours such as self-isolation on receipt of a positive test and correct use of face coverings in some settings.

## 1. Wales situation

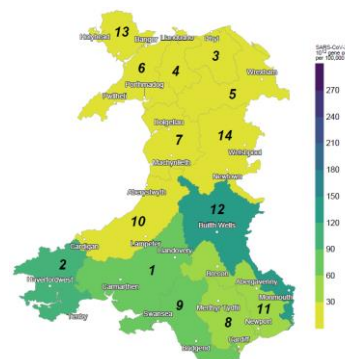
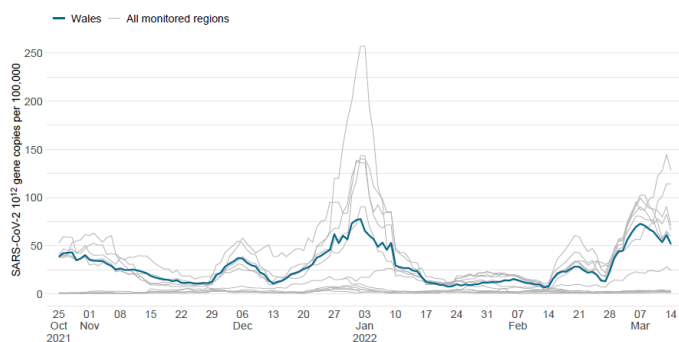
- The latest COVID-19 Situational Report dated 17 March 2022, containing the most recent data on epidemiological surveillance, NHS status, wastewater monitoring, education and children, international travel, mobility, vaccination and population immunity and forward projections for Wales is attached with this advice.

### Case and infection surveillance

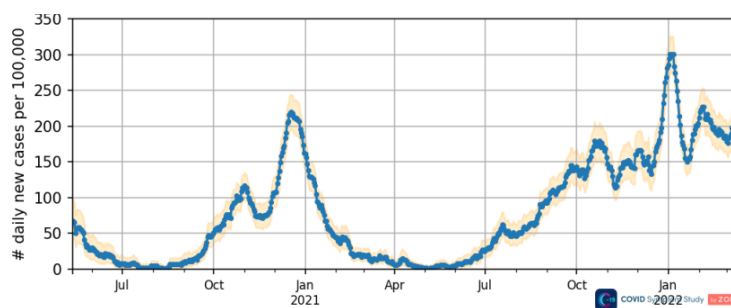
- Case numbers in Wales have begun to grow more rapidly, increasing 48% in the most recent week to 263 cases per 100,000, following a decrease from a high of  $\approx 550$  in mid-late January 2022. A similar trend is observed for test positivity, which has increased from a weekly rate of 23.2% to 29.9%
- PHW's most recent Lateral Flow Test (LFT) surveillance report dated 9 March 2022 suggests the number of LFTs reported increased from 180,245 in the previous week to 194,812. The number of positive testing episodes increased from 9,255 in the previous week to 12,288. The episode positivity rate increased from 8.49% in the previous week to 10.88%.
- Cases in Wales identified by PCR testing have begun to increase in all age groups in the most recent week. In absolute terms, numbers remain lowest in older age groups, although the weekly growth rates between age groups are heterogeneous. This data is extremely sensitive to changes in testing behaviours, so caution is advised with interpretation.



- As of 16 March 2022, UKHSA estimate the Reproduction number (R) for Wales to be between 1.0 to 1.3 with a doubling time of 12 to 31 days, while PHW's estimate of R for Wales, which is less lagged, has rapidly increased from 0.8 in the previous week to 1.3 (95%CI 1.28 to 1.33), with a doubling time of 10 days (95%CI 7 to 18 days).
- The most recent [Waste water surveillance report](#) dated 17 March 2022 suggests since last week, SARS-CoV-2 viral load has dropped, but this is not consistent across all regions.
- The wastewater signal could indicate that the rate in which people are becoming infected has fallen or that the number of new infections has stabilised.

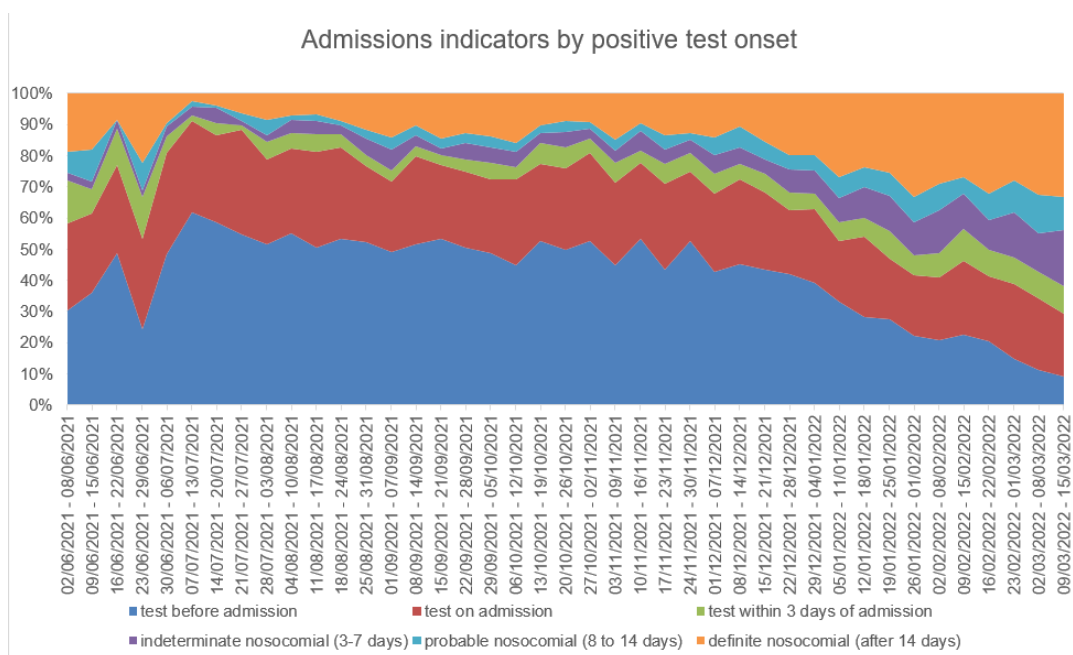


- Data from the [ZOE COVID-19 Symptom Study](#) suggests that daily incidence rates for Wales have rapidly increased to 315 cases per 100,000 as at 15 March 2022, with an Rt of 1.2 (1.1-1.4) (chart below)



### 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. Over the latest week, the number of beds occupied with COVID-19 related patients has increased. Welsh Government NHS Delivery leads report 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 15 March 2022, the number of COVID-19 related patients in hospital beds (confirmed, suspected and recovering) is 1059; 203 (24%) higher than the same day last week. Of these, 648 are confirmed COVID-19 patients; 169 (35%) higher than the same day last week.
- The number of occupied surge and normal beds in a critical care environment is 169; 8 lower than the same day last week and 17 higher than the pre-COVID-19 baseline of 152 critical care beds. Of these, 13 are COVID-19 related patients in critical care, 1 higher than the same day last week.
- There has also been an observed increase in hospital-acquired infections (see below chart), with PHW reporting 44% of hospital cases as probable or definite hospital onset (positive test 8-14 days and >14 days after admission, respectively) for the weekly period ending 15 March 2022. This likely reflects the difficulty of managing BA.2s increased transmissibility in a hospital setting and may increase length of stay times.



Data source: PHW ICNET

- New reporting from Digital Health and Care Wales suggests the number of hospital patients being primarily treated for COVID-19 ('for' as opposed to 'with') in Wales was around 19% as at 17 March 2022<sup>1</sup>. Patients not actively being treated for COVID-19 may still have complications because of COVID-19 and can still present challenges for infection prevention and control management. This contrasts with NHS England, who have reported that the proportion of admissions being actively treated for COVID-19 is around 50%<sup>2</sup>. However, the reliability of these figures is limited by the fact there is no standard definition for 'actively being treated for COVID-19', which may result in differences across Health Boards and settings. Care should be taken when interpreting these data.
- As at 10 March 2022, the number of weekly COVID-19 deaths reported by PHW had reduced by 50% to 16. Lagged [ONS death reporting](#) suggests there were 48 deaths involving COVID-19 in the week ending 4 March 2022 (6.4% of all deaths). The total number of deaths in Wales is 9.0% above the five-year average (62 more deaths). *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 (first chart below) suggest that the number of infections translating into admissions have generally decreased since June 2021. Infection to fatality ratios (second chart below) also decreased following the rise of Omicron.

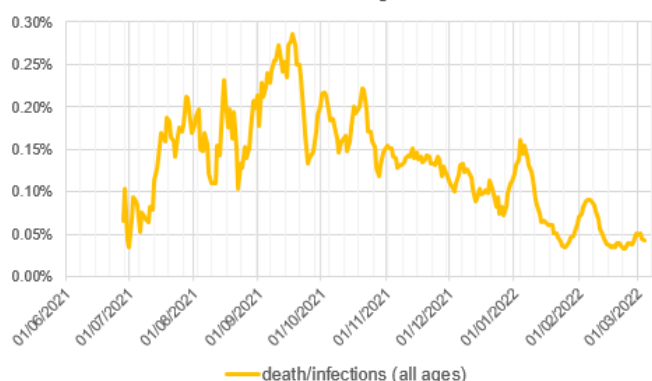
<sup>1</sup> [NHS activity and capacity during the coronavirus \(COVID-19\) pandemic: 17 March 2022 | GOV.WALES](#)

<sup>2</sup> [Statistics » COVID-19 Hospital Activity \(england.nhs.uk\)](#)

COVID-19 estimated infections to confirmed admission ratio (9 day lag), Wales, all ages



COVID-19 estimated infections to death ratio (22 day lag), Wales, all ages

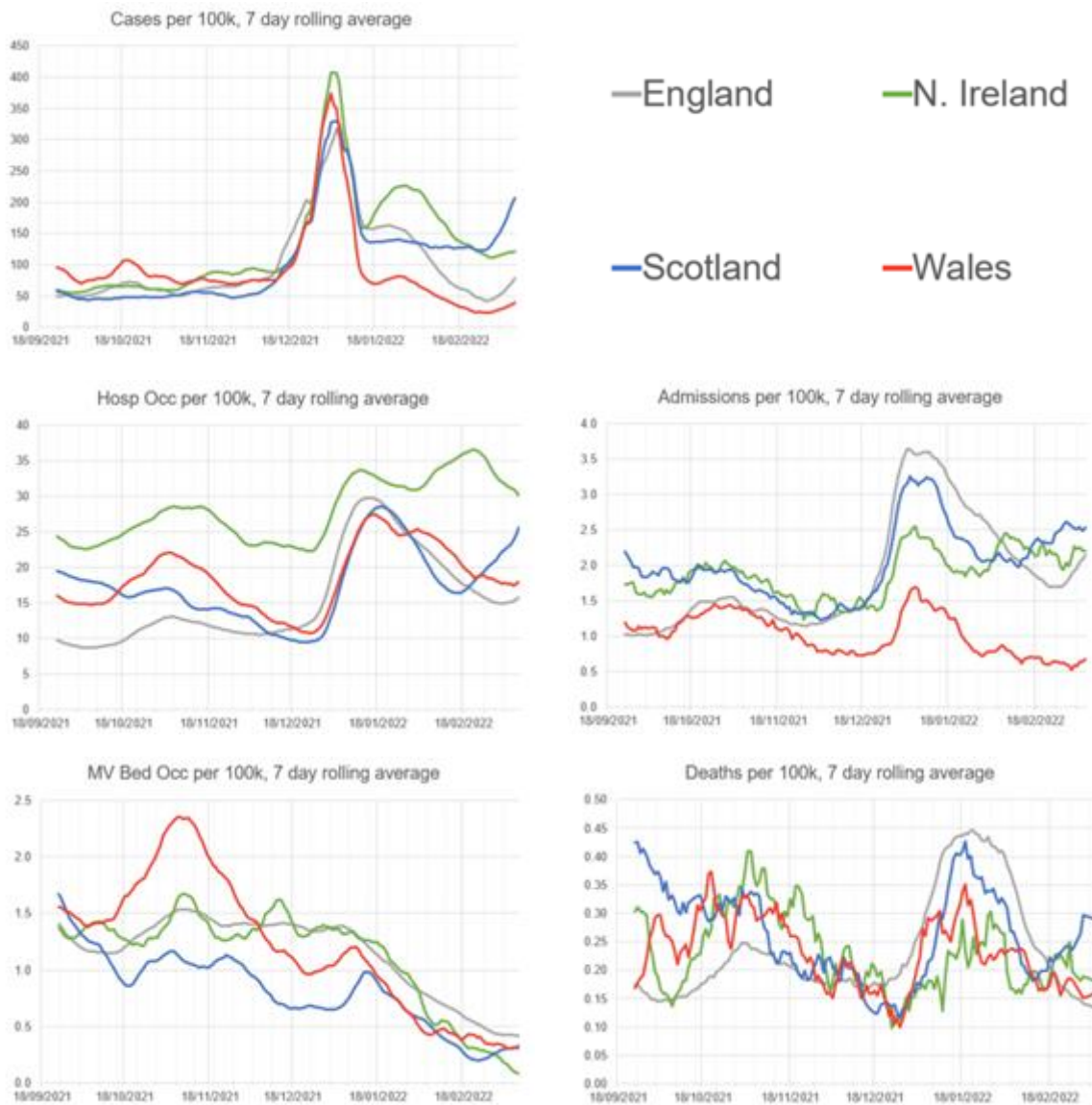


- In the most recent week BA.2 now represents almost 70% of sequenced samples in Wales and is the dominant strain in Wales at present, based on results from whole genome sequencing. Additional detail on this subvariant is discussed further below.

## 2. Situation in the UK and comparator regions

### UK Overview

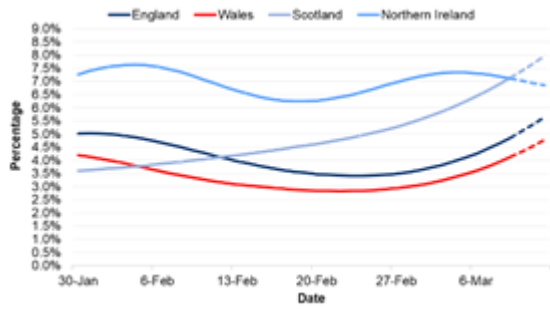
- Surveillance data has continued to show increases in cases in all ages across the four nations, with Wales now also showing a clear upward trend (Data source: [UK Summary | Coronavirus \(data.gov.uk\)](https://data.gov.uk/collections/uk-summary-coronavirus)).
- The increase in cases is translating into an increase in admissions and occupancy across several regions of the UK. Scotland continues to show a rapid increase in hospital occupancy, while England has also begun to increase, with early signs of an increase in Wales. In contrast, data from Northern Ireland suggests a decrease. Admissions appear to be increasing rapidly in England and more slowly in Wales from a low level, while they are relatively stable at a high level in Scotland and Northern Ireland.
- These increases have not been reflected in increased use of mechanical ventilation and the number of COVID-19-positive hospital patients occupying ICU beds remains low across the four nations. However, the number of deaths has increased in Scotland and may be increasing in Wales, although this data is more noisy in the devolved administrations due to small numbers. Deaths in England and Northern Ireland appear to be decreasing.
- Further analysis is required to fully understand the cause of these trends, which may include waning immunity, changes in testing, relaxation of mitigations, behavioural change, impact of the more transmissible BA.2 variant or likely some combination of the above. It should be noted that booster rollout was staggered by age and this has not been observed in the recent increases in cases and hospitalisation, suggesting it is unlikely that waning immunity is the leading factor.



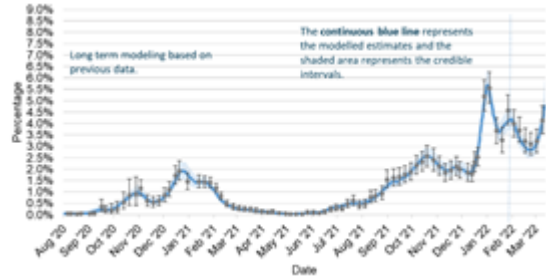
- The latest estimates from the ONS Coronavirus Infection Survey for the week 6 to 12 March 2022 show a continued increase in the positivity rate in Wales. In the most recent week, 4.13% of the community population in Wales had COVID-19 (95% credible interval: 3.56% to 4.77%); equivalent to approximately one person in every 25 or 125,400 people. This compares to one in 20 people in England, and one in 14 people in Scotland and Northern Ireland (chart below)<sup>3</sup>.

<sup>3</sup> [Coronavirus \(COVID-19\) Infection Survey, UK Statistical bulletins - Office for National Statistics](#)

### CIS: Positivity rates (%) across UK nations



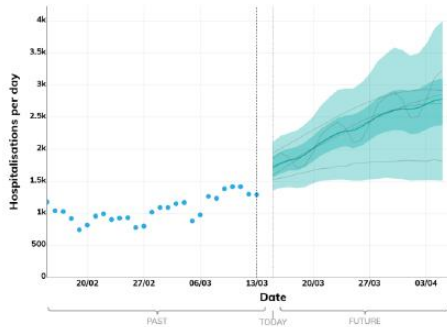
### CIS: Wales long term trends, estimated % testing positive



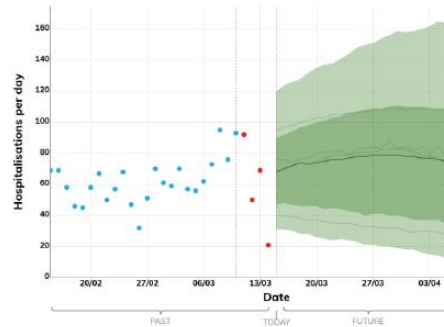
- Medium term projections (MTP) from SPI-M suggest that if current trends continue, admissions and deaths in Wales may increase slightly. Note these projections are highly sensitive to changes in data, particularly at an inflection point such as the rise of a new variant. More recent MTPs from Swansea University only suggest an increase in hospital occupancy in particular.

### Combined Model Projections New Hospital Admissions As of 15/03/2022, NATIONS

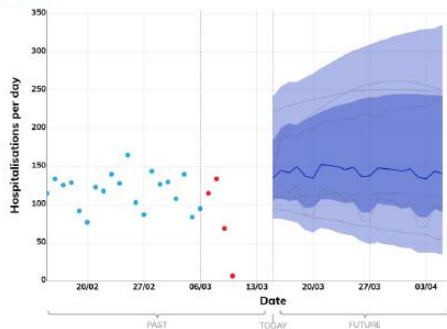
#### England



#### Wales

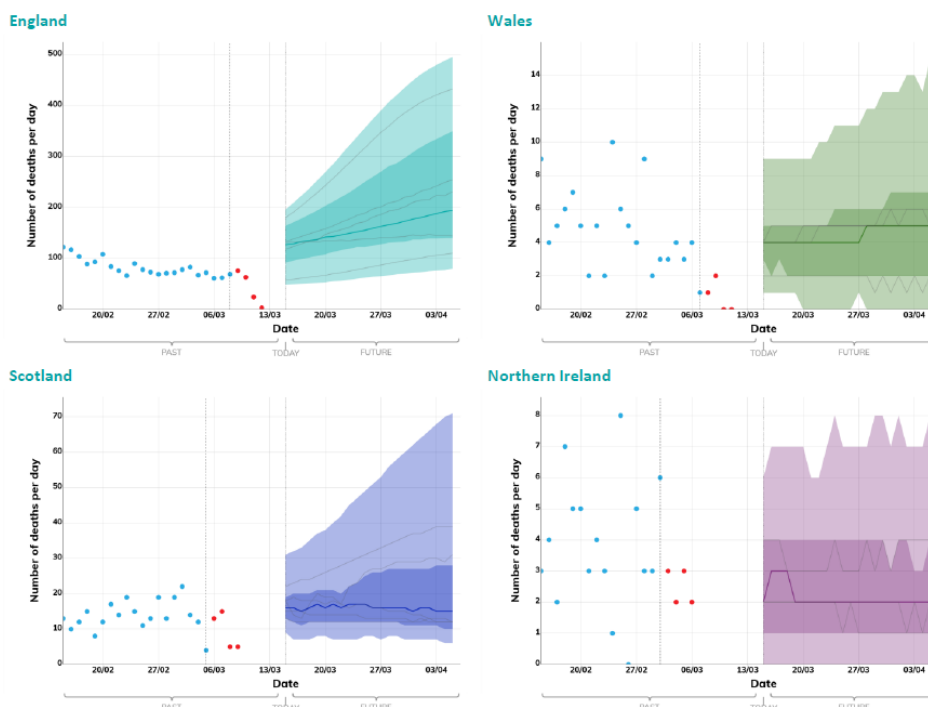


#### Scotland





## Combined Model Projections Total Deaths by Date of Death As of 15/03/2022, NATIONS



### 3. International overview

- According to the World Health Organisation's most recent weekly epidemiological report globally, during the week 28 February to 6 March 2022, the number of new COVID-19 cases and deaths continued to decline by 5% and 8% respectively, as compared to the previous week. Across the six WHO regions, more than 10 million new cases and 52,000 new deaths were reported. As of 6 March 2022, more than 433 million confirmed cases and 5.9 million deaths were reported globally.
- At the regional level, while the Western Pacific Region continue to report an increase (+46%) in the number of new weekly cases, all other regions reported decreases. The number of new weekly deaths increased in the Western Pacific (+29%) and the Eastern Mediterranean (+2%) Regions, while decreases were reported by the African Region (-39%), Europe Region (-15%), the Region of the Americas (-9%) and South-East Asia Region (-3%).
- Omicron remains the dominant variant. Among Omicron descendent lineages reported within the last 30 days, BA.1.1 is the predominant sub-variant, accounting for 187,058 sequences (41%); BA.2 accounts for 156,014 sequences (34.2%); BA.1 accounts for 112,655 sequences (24.7%); and BA.3 accounts for 101 sequences (<1%). To note, global Variant of Concern distribution should be interpreted with due consideration of surveillance limitations, including differences in sequencing capacities and sampling strategies between countries, as well as delays in reporting.<sup>4</sup>

<sup>4</sup> [Weekly epidemiological update on COVID-19 - 15 March 2022 \(who.int\)](https://www.who.int/news-room/feature-stories/2022/03/15-march-2022-covid-19)

- Of note are the recent trends in Hong Kong where it has been reported, accounting for the lag between infection & death, one in 20 cases in Hong Kong currently results in death<sup>5</sup>. This appears to be primarily driven by a low elderly vaccination rate, with more than two-thirds of the population aged 80 and above unvaccinated as of 8 February 2022 when cases began to rise<sup>6</sup>. This has resulted in a rapid, significant wave of mortality, with much of the impact in Hong Kong's care homes.

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

- UKHSA has published a thirty-eighth new technical briefing, examining BA.2 and BA.1<sup>7</sup>.
- BA.2 has been found to have a higher growth rate compared to BA.1 (BA.1 = 82.7% of BA.2 growth; range: 54%-100%) and higher secondary attack rates for household (14.3%; vs. 11.4%) and non-household (6.1%; v s.4.6%) contacts.
- The most recent UKHSA variant surveillance reports that adjusted risk of hospitalisation does not appear higher following a BA.2 infection compared to BA.1 (hazard ratio for BA.1 relative to BA.2 0.87). Similarly, the odds of hospitalisation among SARS-CoV-2-infected patients did not differ between those with BA.1 and BA.2 in South Africa.
- UKHSA vaccine effectiveness data suggests 15 weeks after booster vaccination, protection against severe outcomes for Omicron remains high, with limited waning. The Week 10 vaccine surveillance report is available in full here
- Most recent UKHSA BA.2 Risk assessment is below – there is high confidence that BA.2 is now the dominant variant in England. It is likely that the clinical severity of BA.2 is similar to that of BA.1. Small numbers of BA.2 reinfections following BA.1 have been detected but these are uncommon:

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<sup>5</sup> [John Burn-Murdoch on Twitter https://t.co/1OI4HHs9kT](https://t.co/1OI4HHs9kT) / Twitter

<sup>6</sup> [Hong Kong Vaccination Dashboard \(COVID-19vaccine.gov.hk\)](https://www.hkva.gov.hk/)

<sup>7</sup> [Investigation of SARS-CoV-2 variants: technical briefings - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/investigation-of-sars-cov-2-variants-technical-briefings)

## 23 February 2022 Risk assessment for SARS-CoV-2 variant: VUI-22JAN-01 (BA.2) UK Health Security Agency

Indicator	Red, amber or green status*	Confidence level	Assessment and rationale
Overall growth advantage	Red	High	<p><b>As Omicron (BA.1) was the previous dominant variant in the United Kingdom (UK) this risk assessment uses the characteristics of BA.1 as the baseline (for example, amber indicates equivalence to BA.1).</b></p> <p><b>BA.2 is now dominant in England based on community testing data</b> The growth advantage of BA.2 compared to BA.1 is now visible in multiple countries with genomic surveillance. The growth advantage in England remains substantial. This growth advantage is also supported by the finding of increased household and non-household secondary attack rates for BA.2 compared to BA.1 (not adjusted for vaccination).</p>
Growth advantage 1: Transmissibility	Red	Moderate	<p><b>It is likely that the transmission characteristics of BA.2 are contributing to its growth advantage</b> Preliminary laboratory data suggests an increase in ACE2 binding affinity for the BA.2 receptor binding domain compared to BA.1, which may influence transmissibility. A shorter serial interval is also seen through analysis of contact tracing data. Viral load data require further assessment. Given the apparent lack of immune evasion, it is likely that altered transmission characteristics are significant contributors to the growth advantage.</p>
Growth advantage 2: Immune evasion	Amber	Moderate	<p><b>Immune evasion is unlikely to be a major contributor to the growth advantage</b> Neutralisation data from UK and international laboratories suggest a small antigenic distance between BA.1 and BA.2. However, sera from vaccinated and boosted individuals neutralise both variants similarly, although in some experiments a slight reduction in BA.2 neutralisation is seen. In preliminary data from the UK, hamsters previously infected with BA.1 are protected against subsequent BA.2 infection.</p> <p>There is no apparent reduction in vaccine effectiveness against symptomatic infection for BA.1 compared to BA.2 in the iterated test negative case control analysis using routine testing data in England. Small numbers of BA.2 reinfections occurring after BA.1 primary infections have been detected in the UK Office for National Statistics community survey and are also reported from Denmark. These events appear uncommon at present but many BA.1 infections are extremely recent. Population reinfection analysis will be iterated.</p>
Infection severity	Amber	Moderate	<p><b>It is likely that the clinical severity of BA.2 is similar to that of BA.1</b> In preliminary animal data from the UK using SARS-COV-2 BA.2 virus, there was no evidence of increased virulence for BA.2 compared to BA.1, although international data based on chimeric virus studies is noted.</p> <p>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.</p>

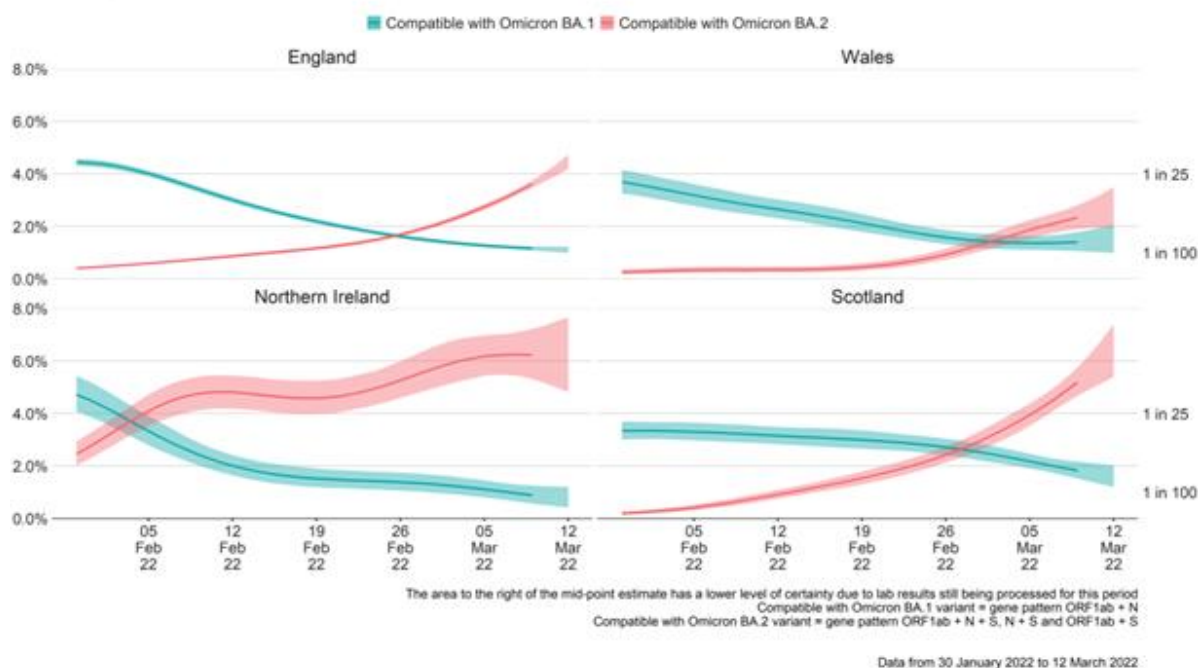
\* Refer to scale and confidence grading slide.

- UKHSA estimates of vaccine effectiveness against symptomatic disease for BA.2 relative to BA.1 suggest vaccine effectiveness is similar<sup>8</sup>. After 2 doses, effectiveness was 10% (95% CI: 9 to 11%) and 18% (5 to 29%) respectively for BA.1 and BA.2, after 25+ weeks. Note that confidence intervals for BA.2 are wide due to limited numbers. Vaccine effectiveness increased to 69% (68 to 69%) for BA.1 and 74% (69 to 77%) for BA.2 at 2 weeks following a booster vaccine before decreasing to 49% (48 to 50%) and 46% (37 to 53%) respectively after 10+ weeks. Protection against hospitalisation remains high, particularly after 3 doses. Vaccine effectiveness is generally slightly higher in younger compared to older age groups
- While BA.2 has been slow to take off in Wales, there is evidence of an increase from the [Coronavirus Infection Survey](#), suggesting the variant is now beginning to pick up. In all 4 nations the percentage of people testing positive for strains compatible with the Omicron variant BA.2 (red) has increased in the most recent week in Wales Scotland and England and over the most recent two weeks in Northern Ireland.

<sup>8</sup> [COVID-19 vaccine surveillance report - week 10 \(publishing.service.gov.uk\)](#)

## Percentage of people testing positive for COVID-19 in England

Modelled daily estimates



- As of 15 March 2022, in the most recent 7-day period Wales the number of weekly genomically confirmed **Omicron** cases reported to PHW has increased to **+6,325** (98,736 total to date), of which **+1,780** (54,164 total) were **BA.1**, **+3,595** (8,737 total) were **BA.2** and **950** (35,835 total) were '**Omicron not elsewhere classified**', requiring sequencing to determine their sublineage. There were also **+31** cases of **Delta** (106,176 total) detected. Note that this reporting also captures NEC samples from previous weeks that have since been sequenced and is therefore not a reliable estimate of weekly infections. *Note this reporting also captures samples from previous weeks that have since been sequenced and is therefore not a reliable estimate of weekly infections*<sup>9</sup>.
- Reporting of BA.2 prevalence to Welsh Government by PHW suggests that in the week ending 6 March 70% of cases were BA.2.

### Note on Viral Recombination

- When two related viruses infect the same cell (i.e. during a coinfection) the viral replication machinery can accidentally switch from one genome to the other, resulting in a mixed genome - this is viral recombination. This has occurred throughout the pandemic and is a key mechanism in seasonal/other coronaviruses. However, it is only easy to detect when the two parental viruses are distantly related and to date recombinant SARS-CoV-2 lineages have not resulted in a 'more fit' virus. The probability of this occurring is also dependent upon co-infection of different lineages – which requires co-circulation of multiple variants.

<sup>9</sup> [Rapid COVID-19 virology - Public | Tableau Public](#)

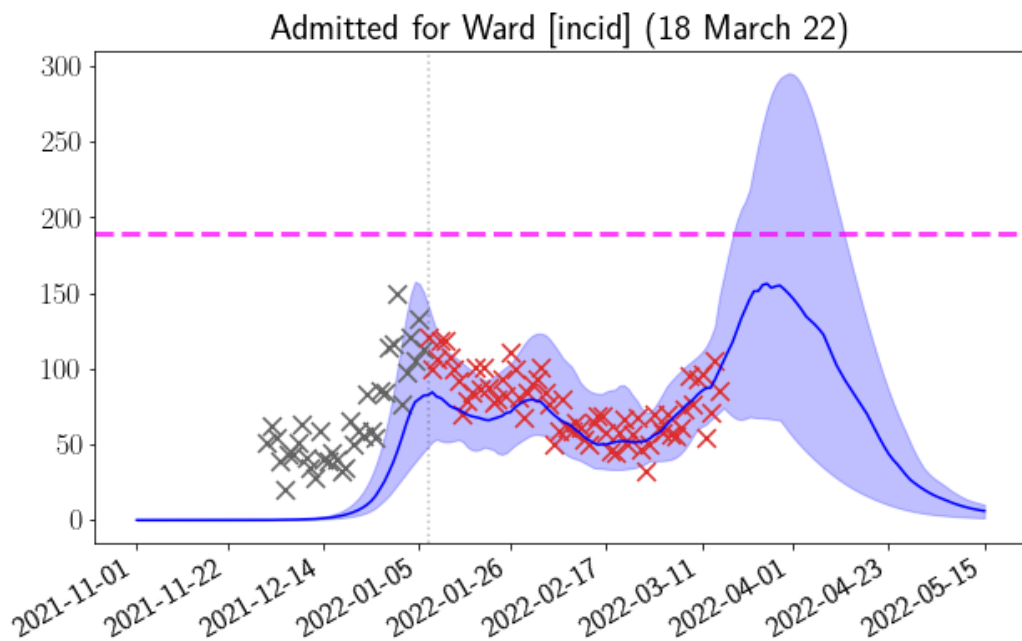
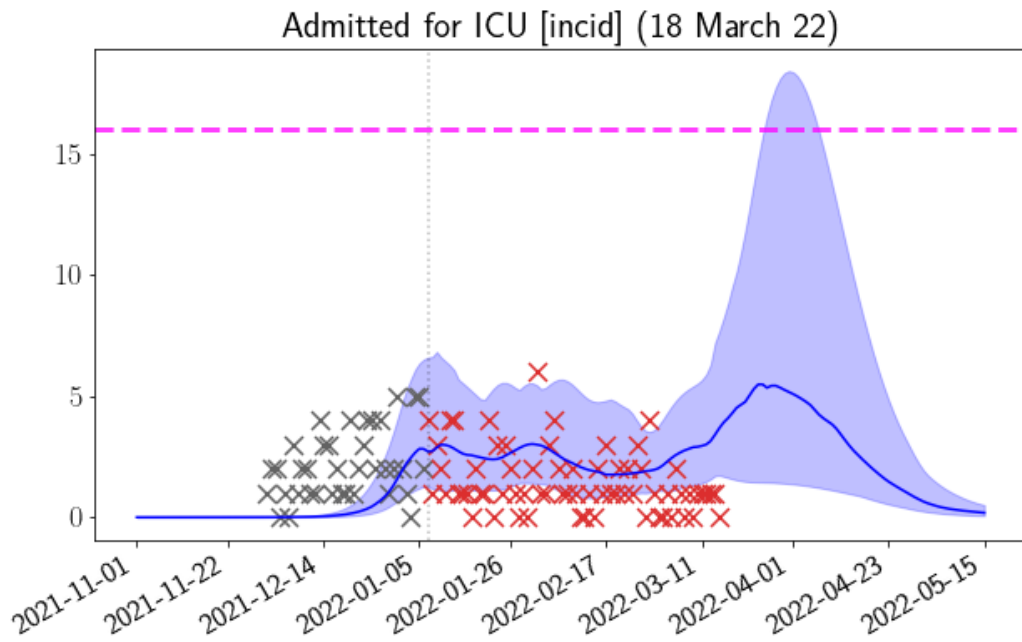
- It is possible that some closed environments (e.g. hospitals) may harbour multiple lineages because of their nature, therefore increasing the probability of a recombinant virus. PHW closely monitor potential recombinant events and they should be investigated as a matter of course.
- Two categories of recombinants have recently been detected: Delta x BA.1 (incorrectly referred to by some as 'Deltracron') and BA.1 x BA.2. Of these, there are 3 lineages:
  - XD is the new name for the French Delta x BA.1 lineage, which contains the Spike protein of BA.1 and the rest of the genome from Delta.
  - XE is a large UK BA.1 x BA.2 lineage, which has the Spike and structural proteins from BA.2 but the 5' part of its genome from BA.1.
  - XF is a UK Delta x BA.1 lineage, which has the Spike and structural proteins from BA.1 but the 5' part of its genome from Delta<sup>10</sup>.
- Recombinants that contain the Spike and structural proteins from a single virus (like XE or XF) are fairly likely to act similarly to their parental virus. XD is possibly more concerning as it contains the structural proteins from Delta and has been detected in Germany, Netherlands and Denmark at low levels. However, according to the WHO, no change in the virus' epidemiology or severity has yet been observed with this variant and additional studies are underway to monitor for signs of growth and isolate and characterise these lineages.

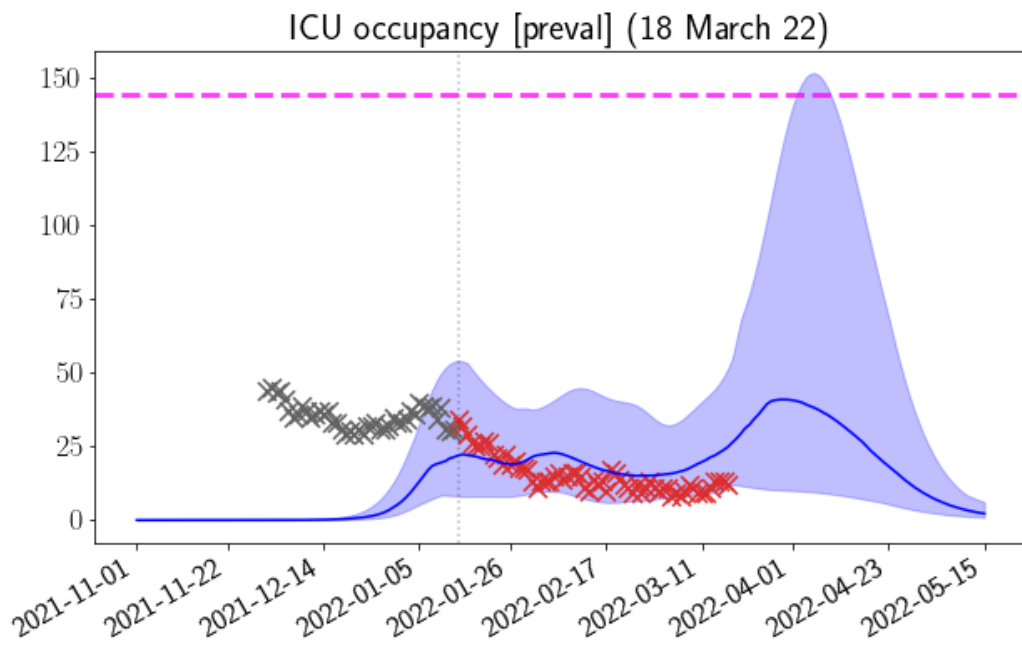
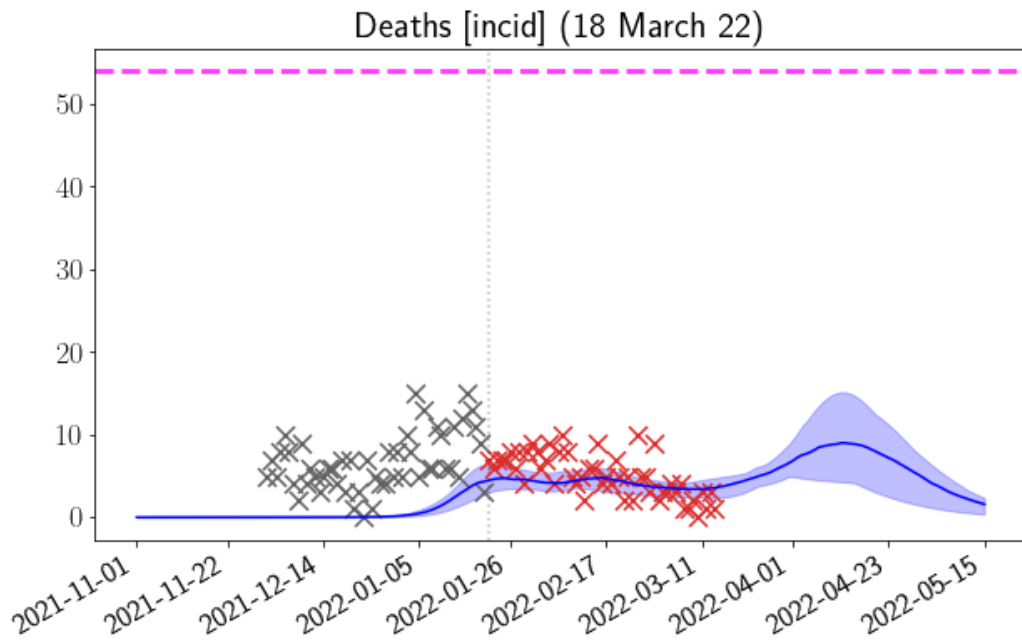
## 5. Swansea University COVID-19 Policy Modelling

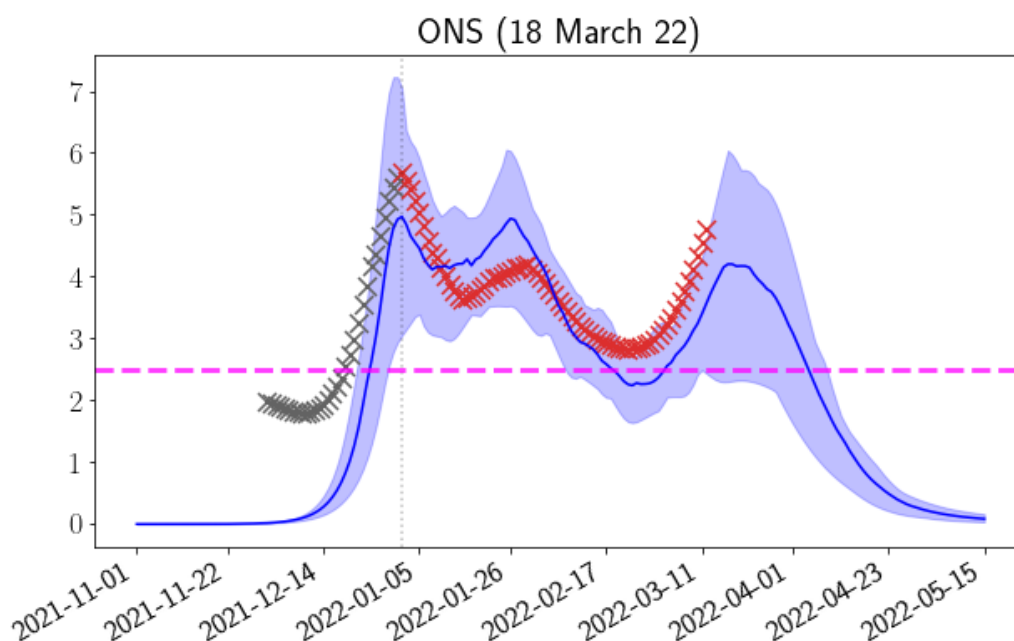
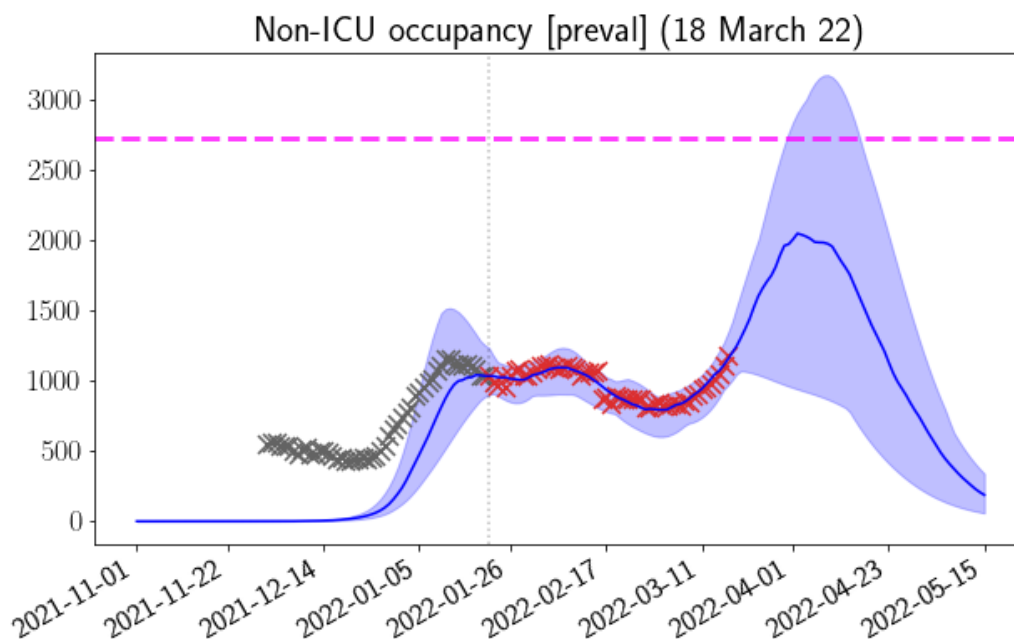
- Modelling to the end of June 2022 from Swansea University was updated on 4 February 2022 to fit to initial omicron BA.1 Rt rise more closely, faster booster rollout, and most recently to fit to the ONS prevalence data dated 26 January 2022 (since the testing policy change introduced in January 2022 affects the PCR case data previously fitted to).
- The most recent MTPs from Swansea University, dated 18th March, suggest that the hospital occupancy trend looks challenging at up to 2000 beds occupied by covid-19 patients (including recovering and suspected). The projections also suggest that deaths may also slightly increase. The pressures in ICU are lower than previous waves, however they may increase to around 40-50 ICU beds occupied. The chart from ONS illustrate that prevalence is increasing, however, data has followed a slightly narrower range than the modelled range. These scenarios are recalibrated every week depending on what has happened the week before; during the last there has been quite rapid growth in transmission so the scenarios are worse than the week before – if growth slows down this week, then next week's medium term projections will look more positive.

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<sup>10</sup> [Tom Peacock on Twitter / Twitter](#)







- Longer term scenarios to understand the possible outcomes that could occur, driven by seasonality, waning immunity and ongoing vaccinations are also currently being produced and should be available in the next few weeks. These are the uncertainties which are likely to heavily influence the trajectory of COVID-19 outcomes in the future. In practice, future prevalence will be also be driven by variant evolution. A set of potential future scenarios were outlined in a qualitative sense and published by SAGE in February 2022<sup>11</sup>.

<sup>11</sup> [Academics: Viral evolution scenarios, 10 February 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/academics-viral-evolution-scenarios)



## 6. Adherence to protective measures

- Previous advice<sup>12,13</sup> 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 suggests the perceived threat (both personal and to the country) from COVID-19 has gradually fallen but remained stable in recent waves (20% and 28% report a high threat to self and country, respectively). A high degree of (self-reported) adherence to a range of protective measures can still be seen. Ipsos MORI survey data<sup>14</sup> collected over the period 11-14 March 2022 suggest approximately seven in 10 (72%) continue to report wearing a face covering, slightly more than two in five (42%) report keeping their distance when out and three in five (62%) report regular hand washing. Furthermore, slightly fewer than three in 10 (28%) continue to report the use of lateral flow tests before meeting other people and of those in work, a similar proportion (30%) report working from home where feasible. With the exception of working from home, these proportions represent small decreases since the last wave of data collection (18-21 February 2022). Around seven in 10 (69%) continue to report Welsh Government doing a good job in its handling of the pandemic, 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<sup>15</sup>, has continued according to the most recent ONS data at GB level from the Opinions and Lifestyle Survey<sup>16</sup>. These data suggest (self-reported) use of face coverings, maintaining distance and use of lateral flow tests has fallen, as has 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. CoMix data<sup>17</sup> available up to 2 March 2022 suggest mean contact rates in the UK have been steady in recent weeks and confirm the drop in use of face coverings, particularly in England.
- The environmental sub-group (TAG-E) has recently submitted updated advice about how the public should use face masks<sup>18</sup>. Inhalation of virus particles aerosolised within respiratory secretions is a prominent mode of transmission. When worn correctly over mouth and nose, close-fitting face masks provide wearable filtration to physically impede the transmission of SARS-CoV-2 within these particles. Multiple lines of evidence concur that high-performance face masks (e.g., filtering face-piece (FFP2) respirators, or their equivalent, classed as N95) provide greater benefit than other options such as cloth face coverings.

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<sup>12</sup> [advice-from-the-technical--advisory-cell-and-chief-scientific-advisory-for-health-21-day-review-4-february-2022.pdf \(gov.wales\)](#)

<sup>13</sup> [Advice from the Technical Advisory Cell and Chief Scientific Advisor for Health: 21 day review 24 February 2022 | GOV.WALES](#)

<sup>14</sup> [Survey of public views on the coronavirus \(COVID-19\) | GOV.WALES](#)

<sup>15</sup> [Advice from the Technical Advisory Cell and Chief Scientific Advisor for Health: 21 day review 24 February 2022 | GOV.WALES](#)

<sup>16</sup> [Coronavirus and the social impacts on Great Britain - Office for National Statistics \(ons.gov.uk\)](#)

<sup>17</sup> [Comix Report Survey Week 101 \(cmmid.github.io\)](#)

- The potential environmental impacts of mask use are highly visible through littering and the limited opportunities for their recycling. More sustainable ways of using, re-using and disposing of masks are required, with a particular emphasis on effective messaging to the public about sustainable use of masks. Messaging should also emphasise that protective measures such as the use of face masks are a positive action which helps protect others and those doing so should be respected.
- Although the paper summarises a range of evidence supporting the use of masks as mitigation, further research based on robust trials on the effectiveness and utility of masks in different community settings would complement the existing evidence-base.