Technical Advisory Cell

Summary of advice

13th November 2020
Technical Advisory Cell: Summary Brief

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Top-line summary

- SAGE have estimated the $R_t$ for Wales at 0.9 – 1.2 and the growth rate for Wales at between -3% and +2%.

- ICU occupancy for 1:1 care of NHS patients (Covid-19 and non Covid-19) remains over 100% of capacity, at 108% (a rise of 1% since last week’s brief).

- Incidence of confirmed cases in Wales across all age groups has decreased compared to the previous week and positivity rates have fallen. These early indications are encouraging but should be treated with caution as positivity rates still remain high and hospital occupancy is similar to the April peak. The highest incidence has been seen in those aged 85 years and older.

- According to estimates from the Office for National Statistics COVID-19 Infection study, for the week of 31 October to 6 November 2020, it is estimated that an average of 1.16% of the community population had COVID-19. This equates to around 1 in 85 individuals, or an estimated 35,300 people in total. This has increased from 1 in 110 reported last week.

- Whilst the firebreak led to large reductions in mobility in the first week, the second week showed increased mobility – likely due to half term being in the first week with schools closed and people taking time off work (medium to high confidence).

- Data following the firebreak shows that mobility has returned to pre-firebreak levels.

- On 4 November 2020, Danish authorities reported the emergence of a variation (or mutation) of the SARS-CoV-2 virus found in mink, with a small number of associated human cases.

- Early investigations have indicated that antibodies that protect against infection are less effective against this variant form of the virus. Although these investigations are ongoing, the early findings raise concerns over the risk of this or other mutations arising in mink and related species (e.g. ferrets), which may potentially hamper COVID-19 intervention efforts, including vaccines and treatments.
In the UK, only ferrets are kept in high-density settings, by large-scale breeders, or as part of working animal collections or animal research sites. Ferrets kept in low-density domestic premises are not believed to present a significant risk.


Updated papers on transmission of COVID-19 in children have both published by TAG and SAGE.

A paper from the Technical Advisory Group setting out key behavioural considerations post-fire break was published on 9 November.

Papers from SAGE considered by the Technical Advisory Cell are published here.

**Growth rate and Reproduction number**

- The current daily growth rate is estimated by SAGE (12th November) to be between -0.03 and 0.02 in Wales, indicating that infections could be decreasing or increasing by between -3% and +2% per day.

- The most recent estimate of the Reproduction number (Rt) for Wales from SAGE (12th November) is predicted to be between 0.9 and 1.2. The estimate of Rt is shown as a range without a central estimate.

- The consensus Rt value from SAGE is based on a weighted average of models that use cases, hospital admissions, deaths, and contact survey data. Many of these indicators have a 1-3 week time lag from when they would pick up a change in infections.

- Care should still be taken when interpreting Rt and growth rate estimates for the UK, due to their inherently lagged nature, and as these figures mask variation in the number of infections, how rates of transmission are changing in some parts of the country and testing availability.

- A growth rate that is lower but still positive, or an Rt number above 1, continues to indicate that the epidemic is growing exponentially.

- Estimates should be interpreted with caution and the confidence intervals taken into account.
Doubling time

- SAGE estimates doubling times for new infections across the UK to be between 28 to 63 days in the UK.

- There are continued difficulties in interpreting testing data and so estimates of doubling times remain uncertain. There is significant heterogeneity across geographies and the potential for faster doubling or halving times in certain areas.

Age profile

- The Figure below shows the number of confirmed COVID-19 episodes per 100,000 population, by week of sample collection and age group. Cases have been decreasing in all age groups.

- Highest incidence was seen in those aged 90+, however there are indications incidence in this age group has decreased compared to previous weeks.

- Please note the colour scale has now been adapted so that the different levels of case numbers per 100k of the population are now more easily distinguishable from each other.

Source: Welsh Government dashboard, data from Public Health Wales as at 13/11/2020

Deaths

- According to provisional death certificate data provided by the Office for National Statistics, there were 121 COVID-19 deaths in Welsh residents registered with
COVID-19 mentioned on the death certificate during week 44 (ending 30 October). This has increased by 56 from the previous week.

- All cause deaths have not reached significant levels of excess for this time of year.

- The Figure below shows the weekly number of COVID-19 deaths (any mention on the death certificate) and 5-year average (2015-2019), week ending 3 January 2020 (Week 1) to week ending 30 October 2020 (Week 44).

![Weekly COVID-19 deaths](image)

**International update**

- By the end of week 45 (8 November 2020), the 14-day case notification rate for the EU/EEA and the UK, based on data collected by ECDC from official national sources from 31 countries, was 602.9 (country range: 49.5–1506.3) per 100 000 population. The rate has been increasing for 112 days.

- The 14-day COVID-19 death rate for the EU/EEA and the UK, based on data collected by ECDC from official national sources from 31 countries, was 64.0 (country range: 0.0–244.5) per million population. The rate has been increasing for 58 days.

- Based on data reported to the European Surveillance System (TESSy) from 25 countries, among people over 65 years of age, high levels (at least 60 per 100,000) or sustained increases in the 14-day COVID-19 case notification rates compared to last week have been observed in 24 countries (Austria, Belgium, Croatia, Cyprus, Czechia, Denmark, Estonia, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia and Spain).

- Pooled data from 18 countries for week 45 show that there were 1.7 patients per 100 000 population in ICU due to COVID-19, which is 76% of the peak ICU occupancy observed during the pandemic. Pooled weekly ICU admissions based
on data from 11 countries were 3.4 new admissions per 100 000, which is 87% of the peak rate to date.

- The map below shows the 13-day average incidence rate per 100,000 people for weeks 44-45. As last week, it is clear that in many regions, the incidence has risen to over 240 cases per 100,000 people.

- It is important to note that from this week onwards, additional categories have been added to identify and distinguish regions with cases numbers above 240, 480 and 960 cases per 100,000 of the population.

- Data on the picture across Europe, including caveats around data lags and variable testing policies is available here.

Effects of the firebreak – early indications

- The figure below gives an early indication that numbers of confirmed COVID-19 cases per day (7 day rolling average) are reducing.

- This reduction in case numbers is encouraging, but should be treated with caution as this could a result of many factors, including different testing patterns and behaviours due to current restrictions.

- Positivity rates have fallen but remain high across Wales, and hospital occupancy is similar to the April peak.
ONS infection study results

- For the week of 31 October to 6 November 2020 it is estimated that an average of 1.16% of the community population had COVID-19 (95% credible interval: 0.84% to 1.53%).

- This equates to around 1 in 85 individuals (95% credible interval: 1 in 120 to 1 in 65), or an estimated 35,300 people in total (credible interval: 25,500 to 46,600).

- The rate has increased in recent weeks. Since the estimates are based on a relatively low number of positive tests, there is a significant degree of uncertainty and the results should be interpreted with caution.

- The impact of the recent ‘firebreak’ lockdown has not yet been seen in the data. There may be a short lag before the effect is reflected in this survey.

- It is important to stress the uncertainty around these figures. Since the survey is still only picking up relatively few positive tests overall, the results can be sensitive to small changes in the number of these positive tests.

Adherence and understanding of current measures

- The most recent IPSOS MORI data for the period 6–9 November for Wales shows similar results to 2 weeks ago for a number of key mitigating behaviours. There were further increases in people reporting working from home, making essential trips only and avoiding non-essential travel. These data cover the final weekend of the firebreak. It should be noted that this is self-reported adherence.
and will be affected by individuals understanding of the rules and the circumstances that apply to them.

- The figure below represents data collected online by IPSOS MORI as part of a multi-country survey on the Global Advisor platform. Each of the waves has included c.600 respondents in Wales. The sample is broadly representative of the adult population aged 16-74. Data is weighted to reflect the age and gender profile of the Welsh population aged 16-74. All samples have a margin of error around them. For a sample of around 500, this is +/- 4.8 percentage points.

![Adherence to key mitigating behaviours, Wales](image)

- The latest results (new last week) from the Public Engagement Survey on Health and Wellbeing during Coronavirus Measures for the period 2-8 November show that 50% of people say they understand the current restrictions in Wales ‘very well’. A further 42% reported understanding the restrictions ‘fairly well’. The results also show that 45% of people said they were following coronavirus restrictions ‘completely’ and a further 45% reported majority compliance. This is similar to last two survey waves and is in line with results from the covid social study. 23% reported having people outside their household/permitted extended household come into their house, whilst 16% reported going into others people’s houses.

**Mobility**

- All the mobility data showed very large falls during the first week of the firebreak. Data for the second week of the firebreak showed increases in mobility compared to the first week (which coincided with half term). Since the firebreak ended
mobility has returned to levels seen before the firebreak started. Mobility in the UK shows large reductions, due to the lockdown in England that started on 5 November.

- Mobility of Facebook users in Wales shows movement was 16% below the baseline for the week to the 13 November (which includes some days during the firebreak). This is up from 28% the week before. The percentage of users staying put (near to home) was 28%, down from 33% the previous week. In the week before the firebreak it was 25%. The baseline is the average value, for the corresponding day of the week, during the 4-week period 2 February – 29 February 2020.

- Apple data for the week to the 13 November (which includes some days during the firebreak) shows that requests for driving directions in Wales are up from the previous week to 85% of the baseline (up from 68%). Requests for walking directions and requests for public transport directions also show increases. The baseline is the 13th of January 2020.

- The Google mobility data to the week of the 10 November (which includes 2 days after the firebreak) shows reductions in residential (i.e people spending more time at home) compared to the week before, 13% above the baseline down from 16%. All other categories show increases compared to the week before firebreak – most notably workplaces– 32% below the baseline, but up from 41% below the baseline the week before.

- The figure below shows the change in mobility in Wales using Google mobility data. The figures are based on the average of the local authorities that have data. The baseline is the median value, for the corresponding day of the week, during the 5-week period Jan 3–Feb 6, 2020. The data for several categories is not available for August 17th – September 10th due to the data not meeting quality thresholds.
- Anonymised and aggregated mobile phone data from O2 to the 6 November shows increases in trips compared to the week before (half term). Trips starting in Wales rose by 6 percentage points to 46% below the baseline. Trips in England were unchanged compared to the previous week (note that the data covers the first 2 days of lockdown in England). The baseline for the O2 data is the same day of the week in the first week of March.

- Whilst the firebreak led to large reductions in mobility in the first week, the second week showed increased mobility – likely due to half term being in the first week with schools closed and people taking time off work (as shown in the difference in the workplace mobility chart below). Data following the firebreak shows that mobility has returned to pre-firebreak levels. The first few days suggest that both people spending time at home (residential mobility) and people going to work (workplace) are similar to where they were before the firebreak started.

- The charts below show changes in mobility from when the local lockdowns or firebreak started. For example the local lockdown in Caerphilly started on the 8th of September whilst in Conwy it started on 1 October, these are considered as day 0 in the analysis – so 7 days in the charts would be the 8 October for Conwy or the 15 September for Caerphilly.
Research

- There are currently 6949 Welsh patients recruited to COVID-19 urgent public health studies, an increase of 317 in last 7 days.

COVID-19 weekly surveillance and epidemiological summary from Public Health Wales

As of 12th November:

- The proportion of calls to NHS 111 and NHS direct related to possible COVID-19 symptoms was stable compared to the previous week.

- GP consultations for Acute Respiratory Infection (ARI) and suspected COVID-19 decreased in week 45.

- Ambulance calls possibly related to COVID-19 are currently stable.

- The number of laboratory confirmed COVID-19 episodes decreased nationally compared to the previous week and testing positivity decreased.

- During week 45, incidence decreased across all age groups, incidence was highest in those aged 85 years and older.

- Confirmed case incidence and testing episode positivity has decreased in many health board regions of Wales.

- Confirmed case admissions to hospitals decreased compared to the previous week, however confirmed cases who are inpatients in hospital have continued to increase nationally, with numbers currently being highest in Cwm Taf Morgannwg UHB.

- Recent surveillance data suggest that COVID-19 infections in Wales are geographically wide spread, however the majority of local authority (LA) areas are experiencing decreasing trends in confirmed case incidence and percentage of testing episodes positive for SARS-CoV2.

- High numbers of incidents continue to be reported, mainly in residential care homes and school settings.

- A Wales-wide ‘fire-break’ restriction on non-essential travel outside the home was in place between 23rd October and 9th November.

- A decrease in confirmed case incidence has been observed within the past week, particularly in young adults.
- All-cause deaths are at seasonally expected levels. Increases in the number of deaths in confirmed cases in hospital have been seen.

Hospital occupancy

- The Figure below shows the confirmed COVID-19 hospital occupancy over the first and second wave of the pandemic (7 day rolling average, as at 13th November). Total hospital bed occupancy for confirmed COVID-19 patients has been rising and has exceeded the agreed ‘circuit breaker’ of 500 patients.

- The Figure below shows the confirmed COVID-19 intensive care unit (ICU) occupancy over the first and second wave of the pandemic (7 day rolling average, as at 13th November). Covid-related ICU occupancy has not yet reached the ‘circuit breaker’ threshold, but is showing an upward trend. Total critical care bed occupancy (for COVID and non COVID patients) is above the agreed circuit breaker, and increasing slightly.

- The table below details the overall occupancy of ICU beds across health boards in Wales. The number of confirmed or suspected COVID-19 patients in ICU has increased since last week.
- The first column in the table indicates overall ICU occupancy (COVID-19 and non-COVID-19 patients) when additional possible capacity is considered.

- Occupancy figures are based on ICU capacity reported to us by local health boards (257 beds in total at reporting date). However, once we get beyond around 150 ICU total beds occupied, it means they cannot be staffed at the 1:1 nursing ratio that is required for Level 3, and patient care will be affected. Also this does not factor in regional variation; some ICUs are close to capacity and conveying critically ill COVID-19 patients by ambulance is not desirable unless absolutely necessary.

- The table below now includes overall ICU occupancy as a percentage of the number of beds that it is possible to staff at 1:1 ratio (based on there being 152 available across Wales).

- Hospital data updated as at 13/11/2020.

<table>
<thead>
<tr>
<th>Health Board</th>
<th>Level 3 ICU Occupancy %</th>
<th>Level 3 ICU occupancy (% of 1:1 ratio beds occupied)</th>
<th>COVID-19 Suspected Patients</th>
<th>COVID-19 Positive Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales</td>
<td>64%</td>
<td>108%</td>
<td>3</td>
<td>51</td>
</tr>
<tr>
<td>ABUHB</td>
<td>51%</td>
<td>78%</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>BCUHB</td>
<td>76%</td>
<td>123%</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>CTMUHB</td>
<td>70%</td>
<td>120%</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>CVUHB</td>
<td>51%</td>
<td>139%</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>HDUHB</td>
<td>53%</td>
<td>77%</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>SBUHB</td>
<td>97%</td>
<td>100%</td>
<td>1</td>
<td>12</td>
</tr>
</tbody>
</table>

- The Figure below shows the total number of people who have tested Covid-19 positive and are in ICU in hospitals across the different health boards in Wales.
• The Figure below shows the number of people admitted to hospital and are either suspected or confirmed as having Covid-19. The purple line represents the total number over a rolling 7 day average, whilst the fainter grey lines show the actual figures at that time.

![Daily COV+/SUS Hospital Admissions](image1)

- 7-day average

• The Figure below shows the number of hospital discharges of people who are either suspected or confirmed as having Covid-19. The purple line represents the total number over a rolling 7 day average, whilst the fainter grey lines show the actual figures at that time.

![Daily COV+/SUS Hospital Discharges](image2)

- 7-day average

• The Figure below shows patients admitted to the intensive care units and are either suspected or confirmed as having Covid-19. The purple line represents the total number over a rolling 7 day average, whilst the fainter grey lines show the actual figures at that time.
Professional Head of Intelligence Assessment (PHIA) probability yardstick

- 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.