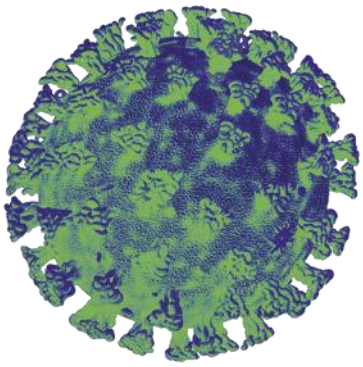
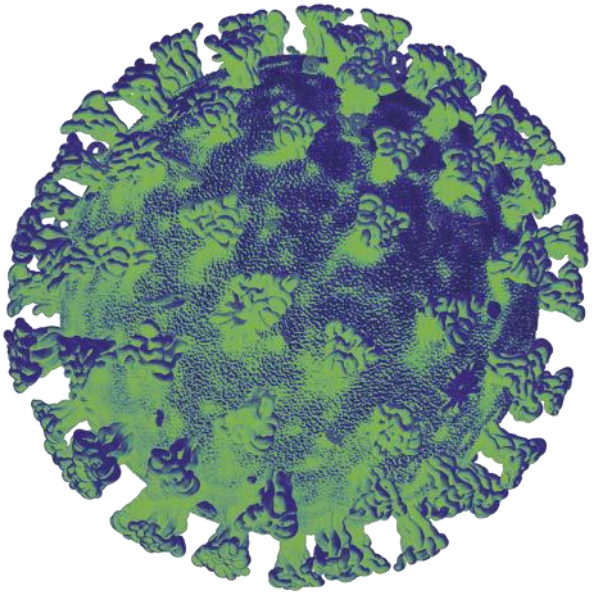
Llywodraeth Cymru
Welsh Government

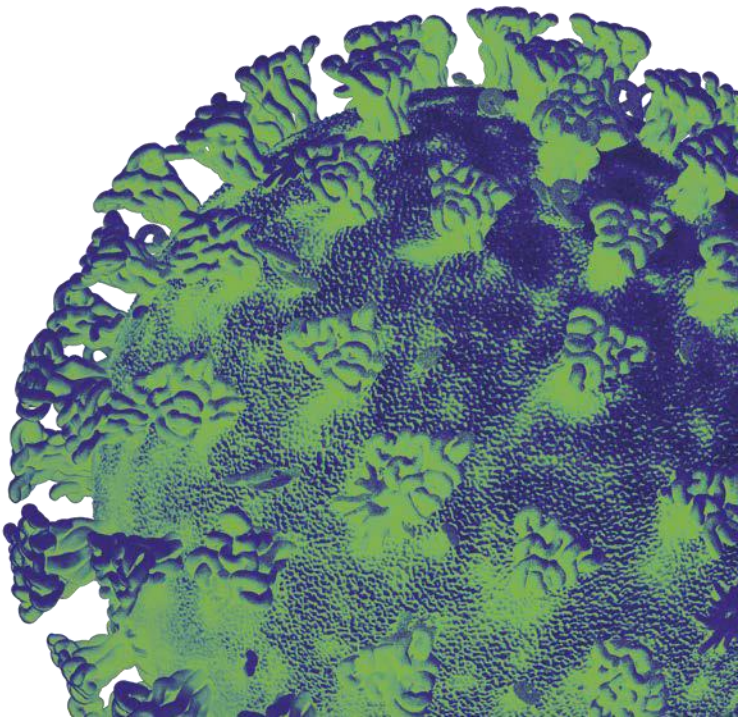
Technical Advisory Cell

Summary of advice

11th December 2020







Technical Advisory Cell: Summary Brief

11th December 2020

Top-line summary

- As reported by SAGE, the R_t value in Wales is estimated to be between 0.9 and 1.2 (increased since last week) and the epidemic is estimated to be either shrinking by -1% or growing by 4% per day.
- As of 10th December, incidence has shown an increase in all age groups, with incidence being highest in those aged 18-44 years. Cases of COVID-19 per 100,000 of the population in Wales, have increased by 54% since our last report.
- As of 9th December, test positivity for COVID-19 (the proportion of total tests that were returned positive) is above the red circuit breaker indicator threshold, at 19.4%.
- As of 11th December, the number of people with confirmed COVID-19 in hospital, has increased by 9% since last week, remaining higher than the April peak and above the red circuit breaker indicator threshold. Overall ICU occupancy (COVID-19 and non-COVID-19 patients) also remains above the red circuit breaker indicator threshold, with data indicating that a 1:1 staffing ratio for ICU patients is not possible across most health boards in Wales.
- The number of ambulance calls possibly related to COVID-19 have increased.
- Deaths reported to Public Health Wales (PHW) have shown a decrease from around 190 deaths per week to around 130 deaths per week, however as of 9th December, there are signs that deaths may be increasing again. For the week ending 4th December 2020, data from the Office for National Statistics (which lags slightly behind PHW data but is more complete) also shows signs that the number of deaths involving COVID-19 reduced slightly. Deaths from all causes remains above the five-year average in Wales.
- The ONS infection survey data shows that test positivity appears to have increased in the most recent week (29 November and 05 December), after falling from a peak at the end of October.
- Adherence shows reductions in some categories, such as people making non-essential trips compared to 2 weeks ago. There continues to be a reasonable percentage of people (around 20%) who report going into households outside of their own/their extended household – but it is consistent with previous weeks. (medium-high confidence).
- The latest mobility data mostly shows small reductions in Wales compared to the previous week, these reductions tie in with the introduction of the additional

restrictions on hospitality, the closure of entertainment venues and indoor tourist attractions from the 4 December. Whilst most show small reductions, the Google data for retail & recreation and workplaces show larger falls, but only covers up to the 7 December (medium confidence).

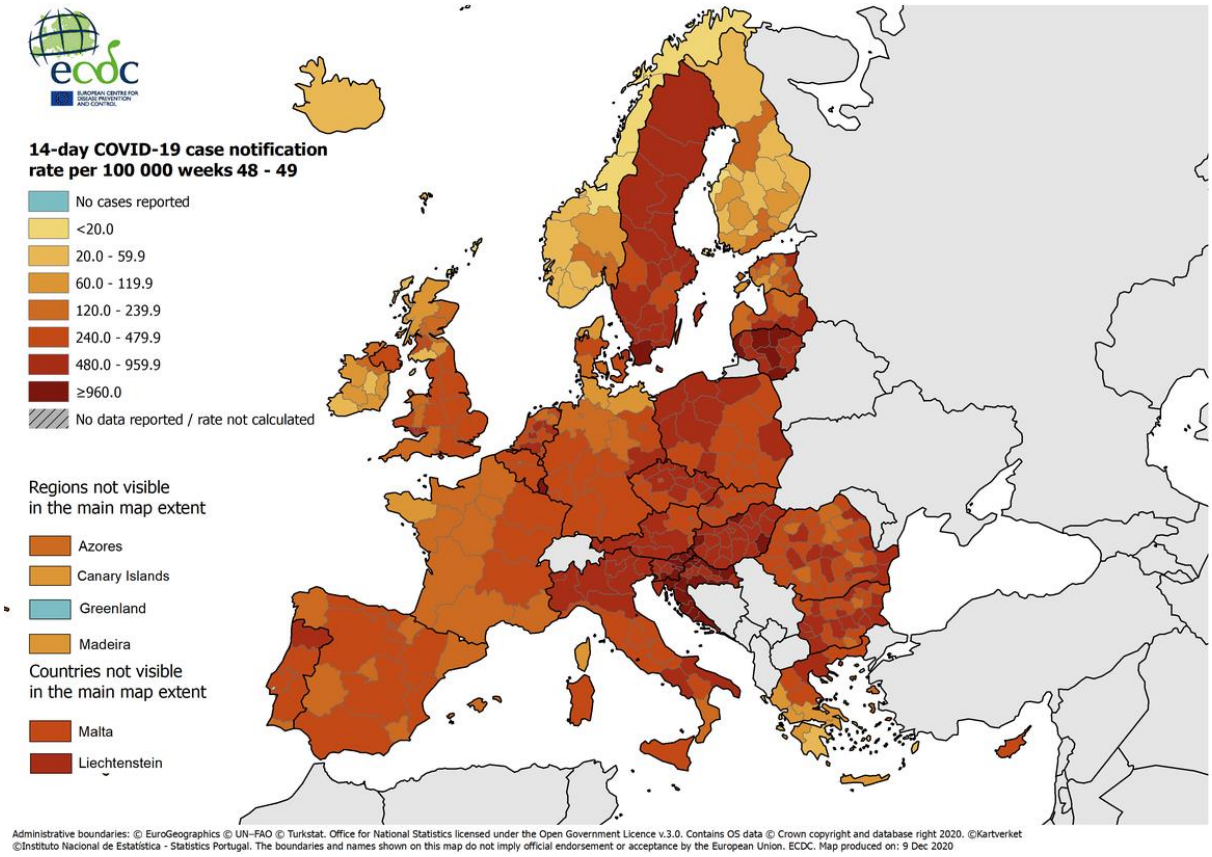
- A new variant of coronavirus has been identified. Public Health Wales and the Technical Advisory Group are joining the UK investigation.
- A briefing paper on the infectivity of COVID-19 was published by the Technical Advisory Group this week
- Papers from SAGE considered by the Technical Advisory Cell are published here.

Growth rate and Reproduction number

- The current daily growth rate is estimated by SAGE (9th December 2020) to be between -0.01 and 0.04 in Wales, indicating that infections could be shrinking/growing by between -1% and +4% per day.
- The most recent estimate of the Reproduction number (R_t) for Wales from SAGE (9th December 2020) 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 R_t 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 R_t and growth rate estimates for the UK, due to their inherently lagged nature, testing availability and, as these figures mask variation in the number of infections, how rates of transmission are changing in some parts of the country.
- A growth rate that is lower but still positive, or an R_t number above 1, indicates that the epidemic is growing exponentially.
- Estimates should be interpreted with caution and the confidence intervals taken into account.

International update

- The map below shows the 14-day average notification rate per 100,000 people in the EU for weeks 48-49.



Summary of Europe:

<u>Daily cases rising</u>

- The daily reported cases have started to rise again in Slovakia and Denmark after having fallen for several weeks. Daily cases continue to rise in Croatia, Latvia, Lithuania, Estonia, Finland, and Sweden.

- Denmark has reintroduced tighter controls and a partial lockdown in 38 municipalities by closing bars, restaurants and museums. Slovakia has reintroduced tighter controls as a result of their recent rises.

<u>Daily cases stable</u>

- Germany, Hungary and Slovenia have ‘top-of-peak’ stabilisation in daily cases although the daily death rate is still rising due to the natural lag in deaths. The total number of deaths in Germany has exceeded 20,000 and their second wave

has exceeded their first wave by about 50%, and rising. Within Germany's 412 districts, only 10 have cases less than 25 per 100,000 people, 303 districts have between 100 and 250 cases per 100,000, 37 districts have cases between 250 and 500, and 3 districts have over 500 cases per 100,000. There are many clusters generated by household gatherings, workplaces, care homes, community facilities and religious events. Extra control measures are being introduced in some districts, for example Saxony closed schools, childcare facilities and most shops on 9th December.

Daily cases falling

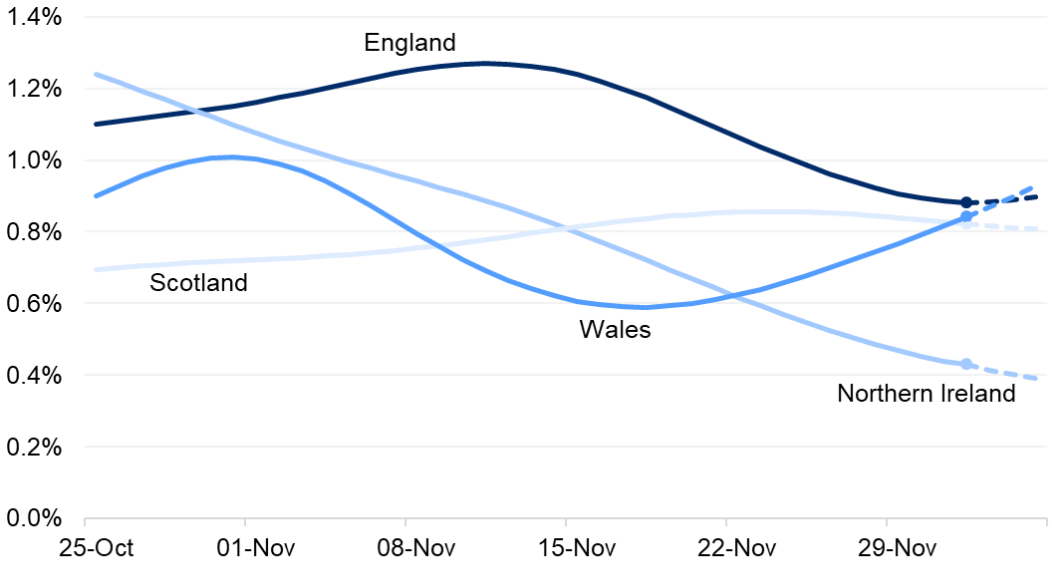
- Daily cases are falling in Austria, Bulgaria, Belgium, Czechia, France, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Poland, Romania, Spain and UK. However, in many of these countries, the daily death rate has yet to respond although several countries show signs that the peak has been reached and a few have falling death rates.

Elsewhere:

- South Korea is thought to be on the edge of a widespread rise in cases although at 700 per day, they are well below most European countries. In preparation for a worsening situation, hospital beds are being installed in shipping containers in order to create extra capacity.
- Japan is recording about 3000 cases per day currently and the number is rising rapidly as their third wave develops. However, most of their cases are centred around several hotspots in big cities such as Tokyo, Osaka and Sapporo where extra medical facilities are being created. In some cases, military medical personnel are being drafted in to help.
- The USA continues its third step increase (they are not 'waves' as in many other countries but steps upwards) and daily cases are record levels. Canada is continuing upwards on its second wave.
- Israel, after having suppressed its third wave by very stringent and lengthy lockdown controls is experiencing the start of its 4th wave as a result of the controls being relaxed about 1 month ago.
- Turkey is experiencing a sharp increase in daily cases and deaths but it is thought their situation is worse than is being reported. There is strong evidence that they have been under reporting case rates throughout most of the summer and into the autumn so their data is considered unreliable.
- Data on the picture across Europe, including caveats around data lags and variable testing policies is available here.

ONS infection study results

- The ONS infection survey data shows that test positivity appears to have increased in the most recent week (29 November and 05 December), after falling from a peak at the end of October.
- These data are helpful because they are the only estimates of infection covering asymptomatic as well as symptomatic cases, and they are not affected by other factors such as testing capacity or the number of people coming forward for testing. The results are for private households only – the 'community population' – and do not apply to those in hospitals, care homes or other institutional settings.
- The Figure below shows the latest estimates for positivity rates (%) since 25 October 2020 across the 4 UK Nations.

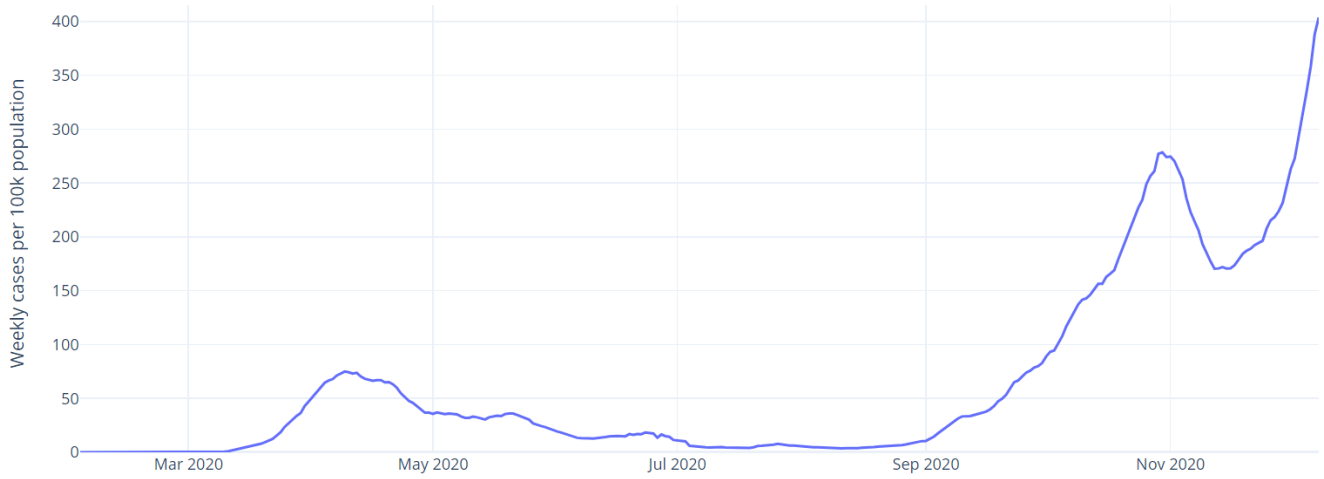


- For the week 29 November to 05 December, an average of 0.84% of the community population had COVID-19 (95% credible interval: 0.57% to 1.17%).
- This equates to approximately 1 person in every 120 (95% credible interval: 1 in 175 to 1 in 85), or 25,600 people during this time (95% credible interval: 17,300 to 35,600).
- The positivity rate appears to have increased in the most recent two weeks, after falling from a peak at the end of October.

- It is important to stress the uncertainty around these figures. Since the survey picks up relatively few positive tests overall, the results can be sensitive to small changes in the number of these positive tests.
- Full results are published here.

Case numbers

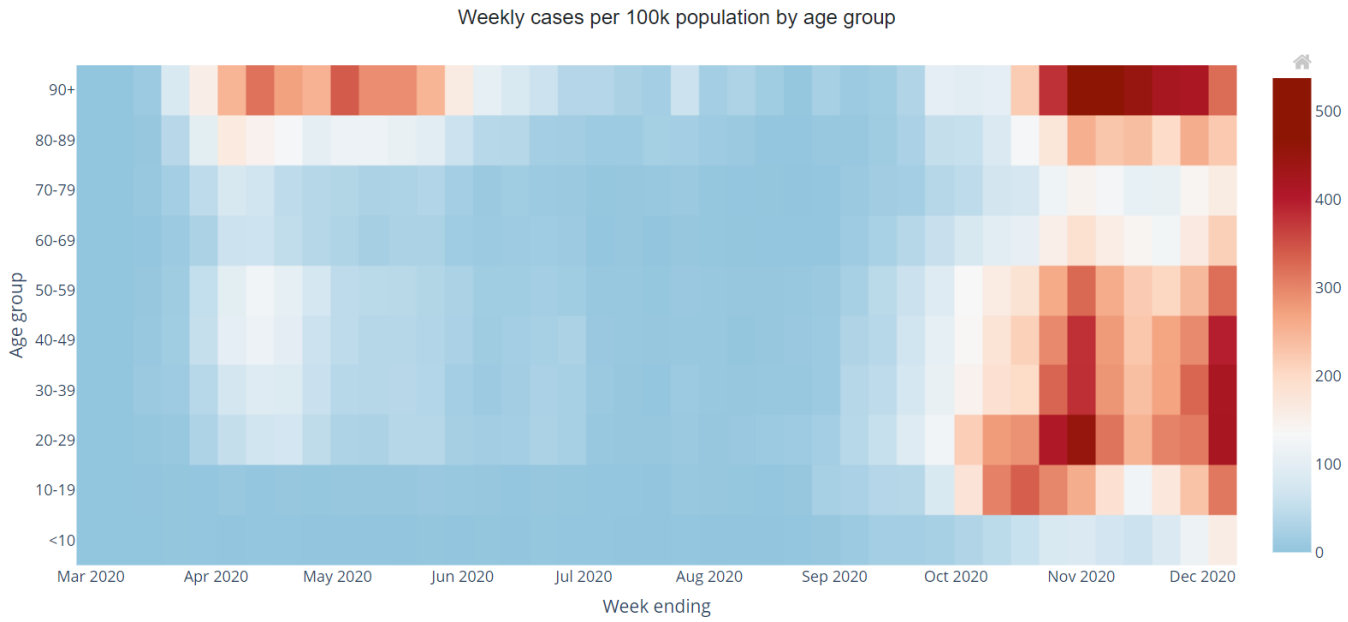
- The figure below shows that numbers of confirmed COVID-19 cases per day (7 day rolling sum, per 100,000 of the population) were reducing, however this has been followed by a subsequent increase in cases.
- Cases of COVID-19 per 100,000 of the population in Wales, have increased by 54% since our last report.



Source: Data from Public Health Wales as of 8th December 2020

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.



Source: Welsh Government dashboard, data from Public Health Wales as at 08/12/2020

- According to Public Health Wales, as at 10th December, incidence increased in all age groups, with incidence being highest in those ages 18-44 years.

Deaths

- The Figure below shows the 7 day rolling sum of deaths reported by Public Health Wales as at 9th December 2020, indicating that deaths have shown a decrease from around 190 deaths per week, followed by a reduction to around 130 deaths per week. However there are indications of an increase in deaths recently.

Source: Welsh Government dashboard, data from Public Health Wales as at 09/12/2020

- It is important to note that this data includes reports of a death of a hospitalised patients in Welsh hospitals or care homes where COVID-19 has been confirmed with a positive laboratory test and the clinician suspects COVID-19 was a factor that caused death. It does not include patients who may have died from COVID-19 but who were not confirmed by laboratory testing, those who died in other settings, or Welsh residents who died outside of Wales. The true number of deaths will be higher.

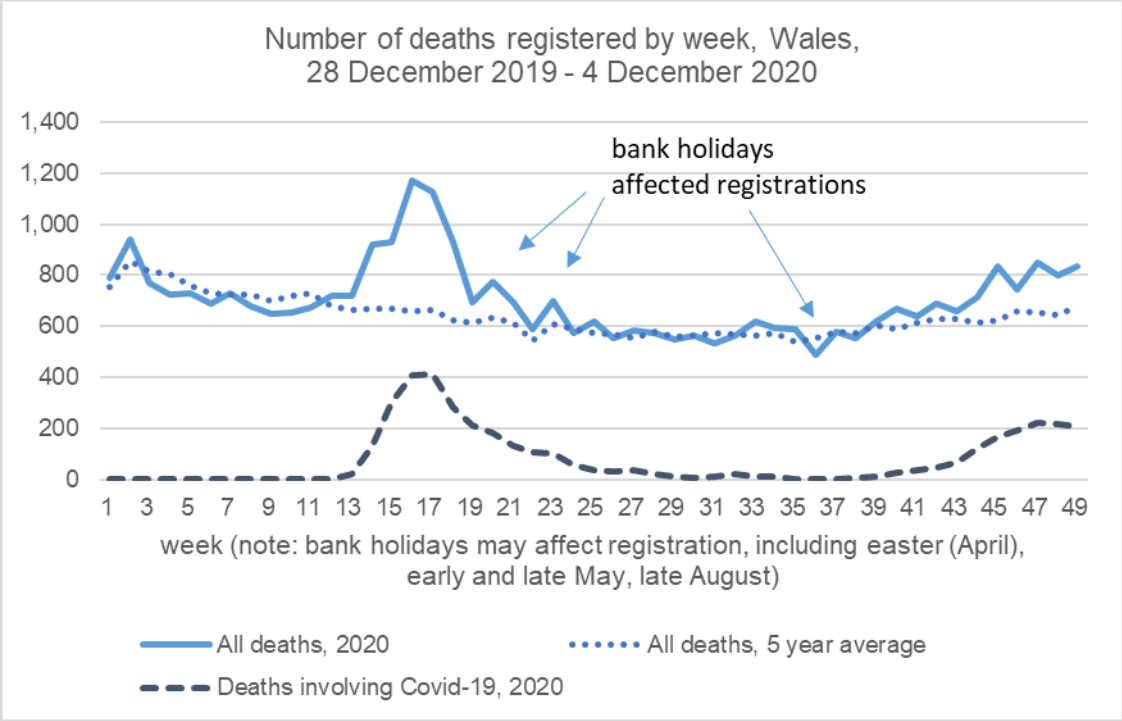
- The Office for National Statistics (ONS) reports on both suspected and confirmed COVID-19 deaths using data available on completion of the death registration process and whilst subject to a time lag, is more complete.

- The Figure below shows ONS data of the number of deaths registered by week in Wales from 28 December 2019 to 4 December 2020 and shows signs of a decrease. This Figure also shows the number of all cause deaths registered by week.

- In Wales, the number of deaths involving COVID-19 decreased for the second week in a row from 218 deaths (Week 48) to 207 deaths (Week 49), while the

total number of deaths in Week 49 was 157 deaths higher than the five-year average.

- Numbers will likely be subject to fluctuation and the very slight drop for the latest 2 weeks should not be over interpreted.

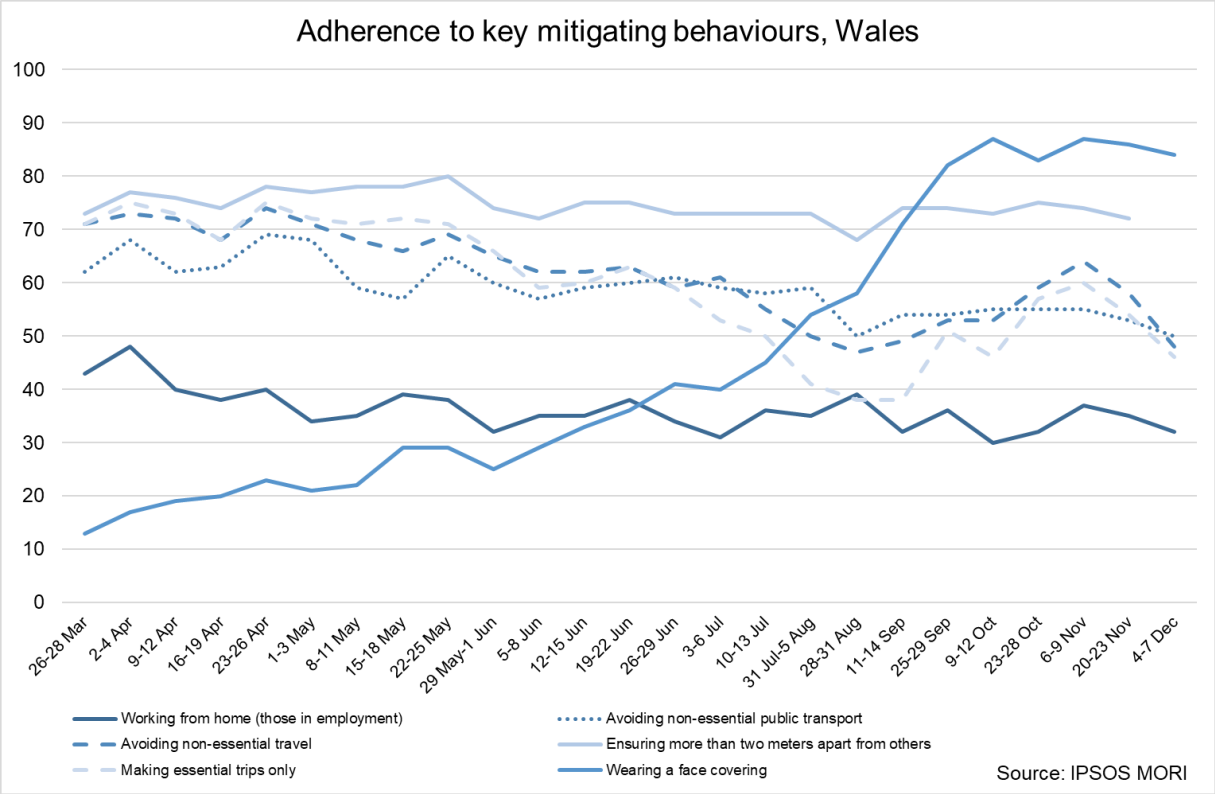


Source data: Office for National Statistics

Adherence and understanding of current measures

- The most recent IPSOS MORI data for the period 4-7 December for Wales shows further reductions in some categories from the last survey. There were reductions in people making essential trips only and avoiding non-essential travel compared to two weeks ago. 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.500 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.



- The latest results from the Public Engagement Survey on Health and Wellbeing during Coronavirus Measures for the period 30 November – 6 December show that 36% of people say they understand the current restrictions in Wales 'very well'. A further 50% reported understanding the restrictions 'fairly well'. The results also show that 39% of people said they were following coronavirus restrictions 'completely' and a further 50% reported majority compliance. The percentage reporting 'completely' is lower than the last survey (47%). 35% reported having people outside their household/permitted extended household come into their house, whilst 21% reported going into others people's houses.

Mobility

- The latest mobility data mostly shows small reductions in Wales compared to the previous week, these reductions tie in with the introduction of the additional restrictions on hospitality, the closure of entertainment venues and indoor tourist attractions from the 4 December (medium confidence). Whilst most show small reductions, the Google data for retail & recreation and workplaces show larger falls, but only cover up to the 7 December.

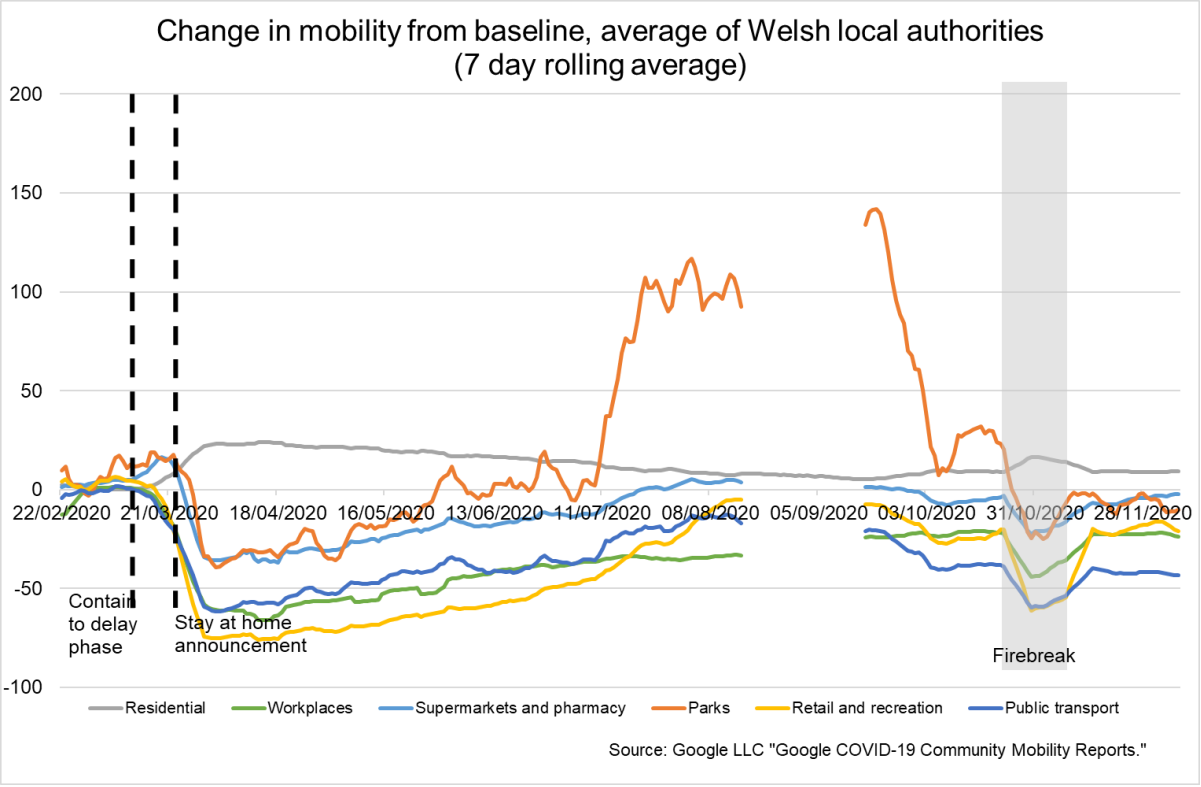
- Mobility of Facebook users in Wales shows movement was 11% below the baseline for the week to the 11 December. This is down from 10% the week before. The percentage of users staying put (near to home) was 27%, lower than the week before (26%). The 'staying put' figures are similar to before the

firebreak, but movement is a little higher (was around 13% in the week before the firebreak). 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 11 December shows that requests for driving directions in Wales are down from the previous week to 92% of the baseline (from 94%). Requests for driving directions are higher than before the firebreak (89%). Requests for walking directions are similar whilst requests for public transport directions are down relative to the baseline compared to last week. The baseline is the 13th of January 2020.

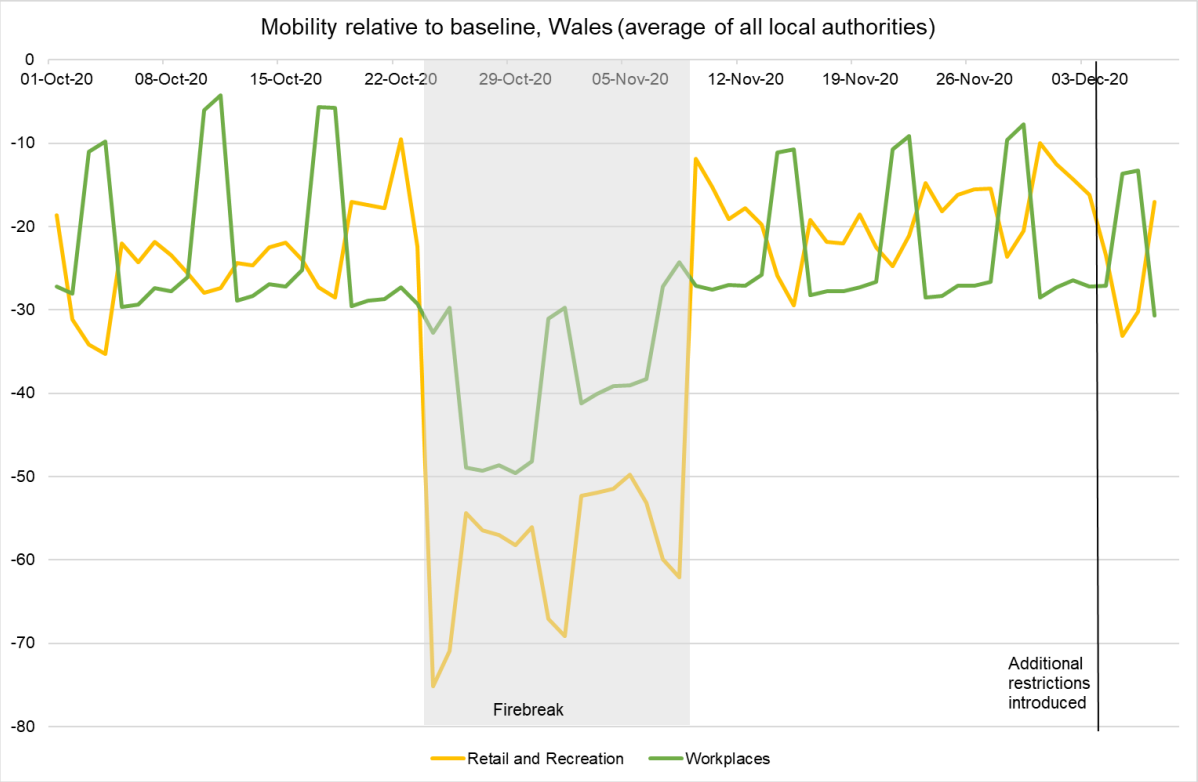
- The Google mobility data to the week of the 7 December shows no change in residential (i.e people spending time at home) compared to the week before at 9% above the baseline. This is similar to before the firebreak. Workplaces show a reduction (at 24% below the baseline, down from 22%), lower than before the firebreak (21% below). Retail & recreation shows a fall in the last week (21% below the baseline, down from 17% the week before) whilst supermarkets & pharmacy shows an increase (2% below the baseline, up from 4%). Public transport and parks also show reductions compared to the previous week.

- 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 4 December shows a small decrease in trips compared to the week before. Trips starting in Wales fell by 1 percentage point to 27% below the baseline. Trips are similar to levels seen prior to the firebreak. The baseline for the O2 data is the same day of the week in the first week of March.

- Following the introduction of the additional restrictions in hospitality, the closure of entertainment venues and indoor tourist attractions from the 4 December there has been a small reduction in mobility. It is most noticeable in the Google data for retail and recreation which covers places like restaurants, cafes, shopping centres, theme parks, museums, libraries, and movie theatres. It is not possible to determine which of the additional controls has had a greater effect. Similarly the reduction in workplaces could be due to establishments closing. The chart below shows the change in mobility for retail and recreation and workplaces by day.



Research

- There are currently 8079 Welsh patients recruited to COVID-19 urgent public health studies, an increase of 469 in last 7 days.

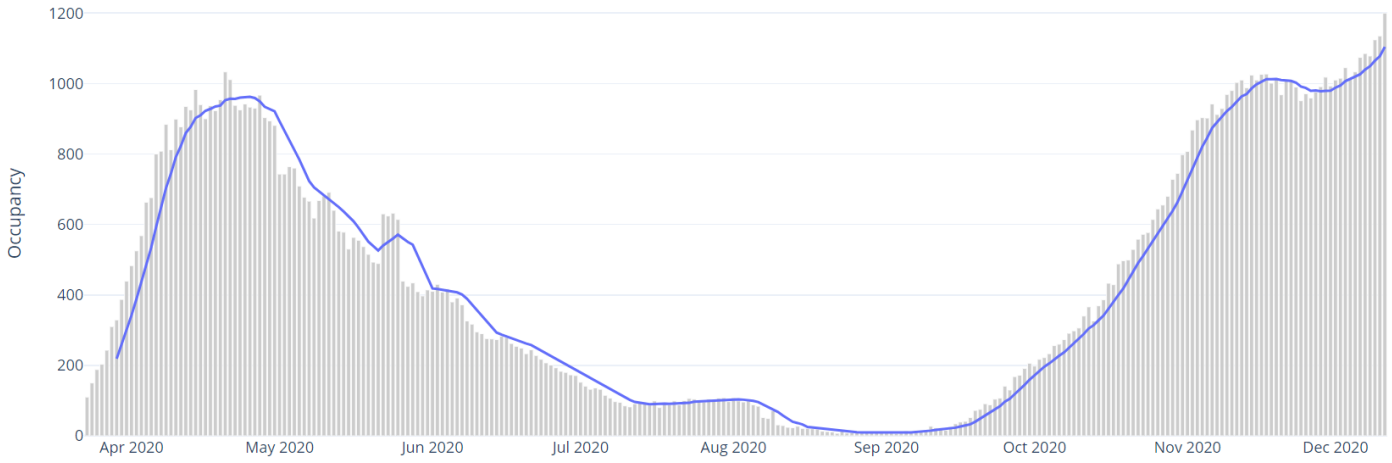
COVID-19 weekly surveillance and epidemiological summary from Public Health Wales

As at 10th December 2020

- The proportion of calls to NHS 111 and NHS direct related to possible COVID-19 symptoms increased compared to the previous week.
- Overall GP consultations for any Acute Respiratory Infection (ARI) and GP consultations for suspected COVID have increased compared to the previous week.
- The number of ambulance calls possibly related to COVID-19 have increased.
- The all-Wales number of laboratory confirmed COVID-19 episodes and testing positivity continue to increase.
- During week 49, incidence increased in all age groups, with incidence being highest in those ages 18-44 years.
- Confirmed case incidence and testing episode positivity has increased in many health board regions of Wales.
- At a national level, confirmed case admissions to hospitals increased compared to the previous week, confirmed cases who are inpatients in hospital and admissions to critical care wards also increased compared to the previous week.
- Recent surveillance data suggest that COVID-19 infections in Wales continue to increase and remain geographically wide spread, with the majority of local authority (LA) areas experiencing increasing overall trends in confirmed case incidence in the most recent weeks, following decreases between weeks 44 and 46.
- High numbers of incidents continue to be reported, mainly in residential care homes and school settings.
- A Wales-wide ‘fire-break’ restriction was in place between 23rd October and 9th November.
- A decrease in confirmed case incidence had been observed following the fire-break, however incidence has increased again this week compared to the previous week and is now at the highest ever level.
- All-cause deaths have increased compared to the 5 year average. Increases in the number of deaths in confirmed cases in hospital have been seen, however the number of deaths remains stable compared to the previous week.
- In deaths where information is available from PHW rapid mortality surveillance, chronic heart disease, diabetes and chronic respiratory disease are the most commonly reported risk factors (in 35%, 28% and 23% of deaths respectively).
- The Public Health Wales dashboard is available here and includes local authority analysis.

Hospital occupancy

- It is important to note that the total number of available ICU beds has fallen in recent weeks as Local Health Boards have made their reporting more consistent in terms of only reporting available ICU beds that can be staffed.
- 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 11th December).



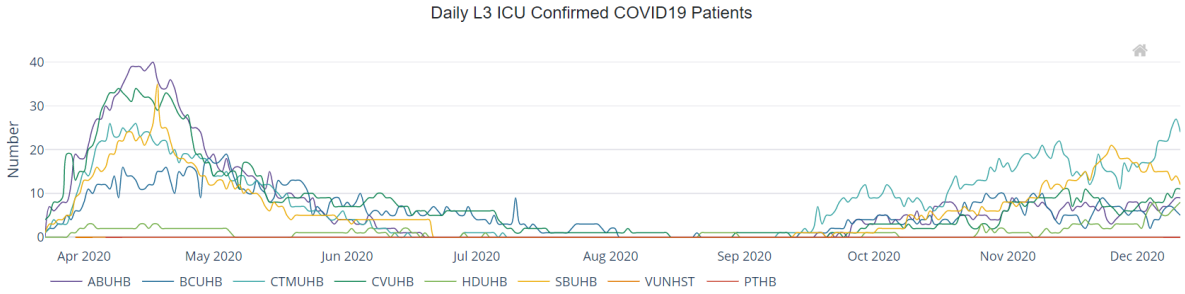
- The Figure below shows the confirmed COVID-19 intensive care unit (ICU) occupancy over the first and second wave of the pandemic (7 day rolling average, as at 11th December).

- The table below details the overall occupancy of ICU beds across health boards in Wales, including 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). The number of confirmed or suspected COVID-19 patients in ICU has increased since last week.

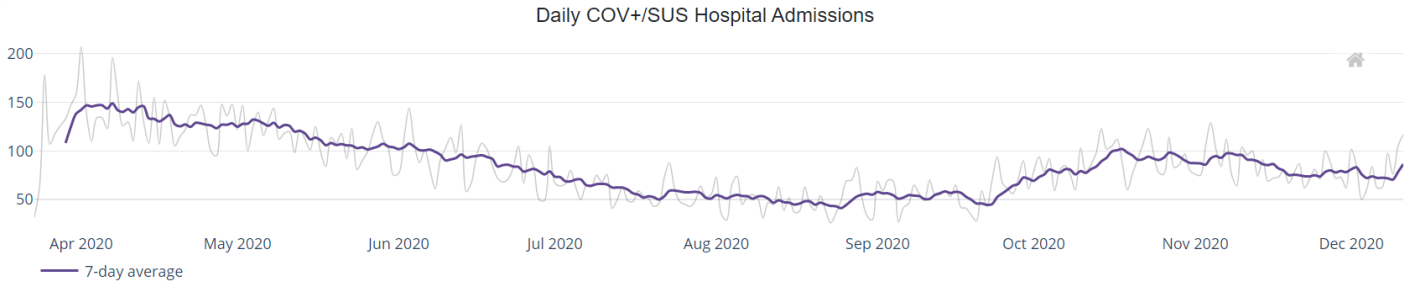
- Occupancy figures are based on ICU capacity reported to us by local health boards (185 beds in total at reporting date). However, once we get beyond around 150 ICU total beds occupied, it means they cannot be staffed at the 1:1 nursing ratio that is required for Level 3, and patient care will be affected.
- COVID-19 hospital and ICU occupancy have increased over recent weeks. As of 11th December 2020, 1:1 care for all patients in ICU was not possible in most health boards, with ICU 109% occupied for 1:1 care; see table below.

Health Board	Level 3 ICU occupancy (% of 1:1 ratio beds occupied)	Total L3 ICU Occupancy %	COVID19 Suspected patients	COVID19 Positive patients
ABUHB	82.6%	79.2%	2	9
BCUHB	130.8%	82.9%	0	5
CTMUHB	128.0%	97.0%	3	24
CVUHB	125.0%	100.0%	0	11
HDUHB	90.9%	83.3%	0	8
SBUHB	92.9%	92.9%	0	12
Wales	109.2%	89.7%	5	69

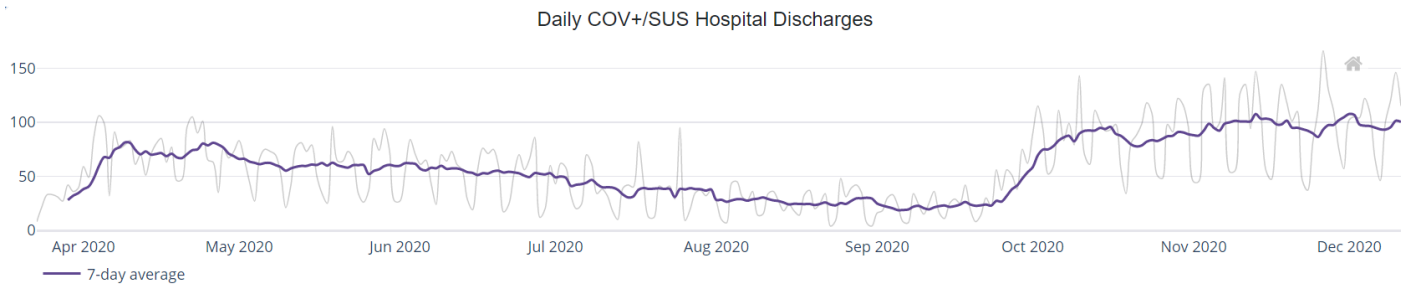
- The Figure below shows the total number of people who have tested Covid-19 positive and are in ICU in hospitals across the different health boards in Wales. Data as of 11th December 2020.



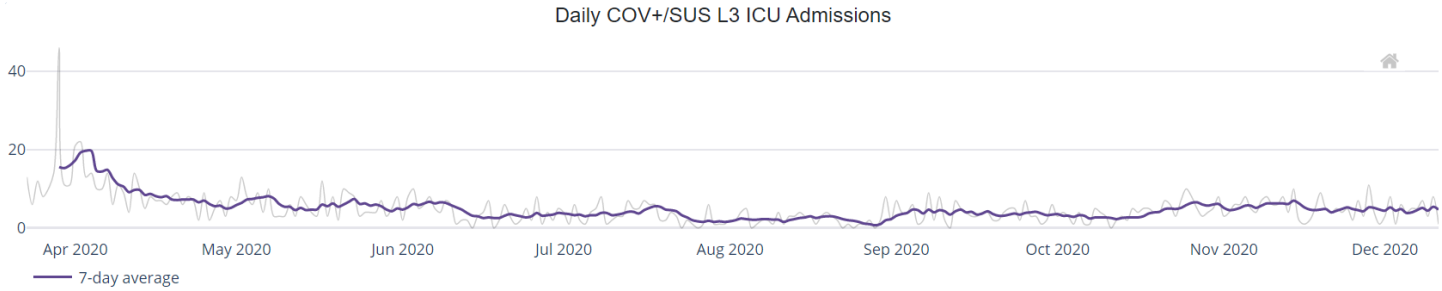
- The Figure below shows the number of people admitted to hospital and are either suspected or confirmed as having Covid-19. The purple line represents the total number over a rolling 7 day average, whilst the fainter grey lines show the actual figures at that time. Data as of 11th December 2020.



- 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.



- 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.