Scottish Government
Riaghaltas na h-Alba
gov.scot

Covid-19 Indicators

This slide pack explains 5 indicators used to inform decisions on what Covid level applies to each local authority, from level 0 – 4

It then gives the indicators for 27 October 2020

Why use indicators?

- The levels set out in *Scotland's Strategic Framework* replace measures currently in place in Scotland to suppress the virus.
- Each local authority in Scotland needs to be placed at the appropriate level for its situation.
- This should consider the current and future levels of Covid-19, and how much this is affecting local health services.
- It must also consider social and economic harms and their impact on the local community.
- We have a process to take all these conditions into account working with partners to take account of local information and judgement.
- This slide pack focuses on the current and future levels of COVID. Further information will be published on the assessment of other harms.
- There is a lot of information available about the current state of Covid across Scotland.
- In order to compare all this information across different areas, as well as to make use of local judgement, the information is used to create 5 indicators.
- Each indicator has a "signal" – a number from 0 to 4 to match with the levels 0 to 4
- Each indicator has a set of thresholds. If the data goes above the first threshold, that indicator has a signal of 1. If it goes above the second, then the signal goes up to 2. These thresholds have been developed drawing on WHO advice, for example around positivity and our own experience, for example around bed capacity.
- These signals are an important input to the level setting process and are used by the National Incident Management Team, the 4 harms group and other partners to inform their discussions.
- Decisions on levels, however, are not automatically triggered by the signals. They are judgements taking account of all the relevant facts and circumstances at the time.

A) Number of new cases per 100,000 people

Why is this important?

- New cases help us understand the current state of the epidemic.
- If the number of new cases is high in an area compared with the population, it creates more risk of spreading and of some people becoming seriously ill.
- Actual cases are likely to be even higher than those reported since not everyone has symptoms and gets tested.

How is it calculated?

- We count the **number of people in an area who have tested positive for the first time** (new cases) over a 7 day period
- There is a reporting delay in testing results so this figure is drawn with a 3 day lag to allow results by specimen date to be available.
- This is divided by the population of the area (NRS mid-year estimate 2019) and multiply by 100,000 to get the rate per 100,000 people.
- The level 0-4 is where the rate is greater than or equal to the threshold for that level.

Where can I find the data for this indicator? These figures will be published daily at 2pm on the PHS dashboard

A) Number of cases per 100,000 people

On Tuesday 27 October, we use data for specimens up to Saturday 24 October. This is because data for the latest 3 days is not yet complete. This is what we mean by a 3 day lag. We use 7 days worth of data up to the 24 October, as testing rates vary across the week.

In **Scotland**, 9,081 **people newly tested positive** in the week 18-24 October.

The population of Scotland is 5,463,300 (which is 54.633 X 100,000).

Therefore the rate per 100,000 is 9,081/54.633 = **166.2**.

Level	Threshold
0	
1	20
2	75
3	150
4	300

To illustrate, the latest rate for Scotland would be **level 3** based on the thresholds above.

B) Test positivity rate

Why is this important?

- This indicator reflects both the amount of testing and the prevalence of the virus in an area.
- It is aligned with one of the WHO epidemiological criteria used to determine whether the epidemic is controlled in a country.

How is it calculated?

- The number of **positive tests*** in a 7 day period is divided by the **total number of tests** in the same period for people in the area to give the percentage.
- There is a reporting delay in testing results so this figure is drawn with a 3 day lag to allow results by specimen date to be available.
- The level 0-4 is where the percentage is greater than or equal to the threshold for that level.

*Note that the number of positive tests is higher than the number of new cases because of repeat tests

Where can I find the data for this indicator? These figures will be published daily at 2pm on the PHS dashboard

B) Test positivity rate

On Tuesday 27 October, we use data for specimens up to Saturday 24 October. This is because data for the latest 3 days is not yet complete. This is what we mean by a 3 day lag. We use 7 days worth of data up to the 24 October, as testing rate vary across the week.

Of all the **tests** carried out in week 18-24 October, 10,096* had a positive result.

There were 121,370 tests carried out in the week 18-24 October in Scotland

Therefore the test positivity rate is **8.3%**.

Level	Threshold
0	
1	1.5
2	3
3	5
4	10

To illustrate, the latest rate for Scotland would be **level 3** based on the thresholds above.

* This is the number of positive tests, so includes repeat positive results whereas the number in A is the number of individuals testing positive for the first time.

C) Future number of cases per 100,000 people

Why is this important?

- By identifying hotspots across Scotland where infections are likely to be high in two weeks' time we have early warning of where there will be increases, and can act to slow the rate of increase.
- Two weeks time is close enough for us to be relatively sure about what the number of people infected might be in each Local Authority.

How do we calculate this?

- We predict the rate of cases in two weeks time using modelling. This assumes no change to current interventions.
- The probability of an area exceeding 500, 300, 100 or 50 cases per 100,000 population is calculated.
- Areas are assigned the highest level that they have a 75% or higher probability of exceeding

Where can I find the results for this indicator? https://www.gov.scot/collections/coronavirus-covid-19-modelling-the-epidemic/ each week on a Thursday at 5.30pm
Source: *https://imperialcollegelondon.github.io/covid19local/#downloads*

C) Future number of cases per 100,000 people

The future number of cases per 100,000 people is estimated using a model. This model takes the positive test results on a given date and projects them forward for two weeks. This is used to estimate the probability that each area will be above the thresholds for each level.

Scotland is forecast to have a 75% chance of exceeding 100 cases per 100,000 people from 8-14 November.

Scotland is forecast to have a 41% chance of exceeding 300 cases per 100,000 people from 8-14 November.

Therefore, Scotland currently meets the criteria for level 2, but not for level 3.

Level	Threshold
0	
1	50
2	100
3	300
4	500

To illustrate, the latest rate for Scotland would be **level 2** based on the thresholds above.

D) Number of people likely to need acute hospital care in future weeks

Why is this important?

- This indicator highlights areas where there is a significant risk of exceeding local acute hospital capacity within the next six weeks or earlier.
- Across Scotland as a whole, around 3,000 beds can be made available to treat Covid patients. Delivery of this may be affected by other winter-related pressures, such as increasing emergency attendances, staff absences and enhanced infection control requirements
- Although the number of people currently in hospital with Covid is important, this can rise rapidly.

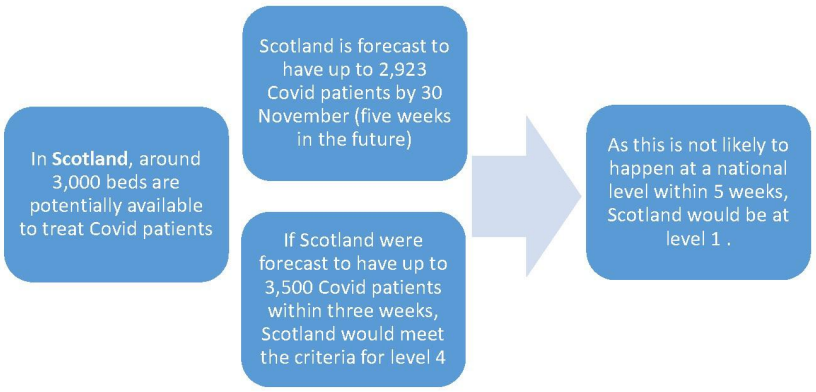
How is it calculated?

- The number of patients that will need to be in acute hospital care in each area is estimated for six weeks into the future using a model, and this is compared to the number of Covid beds available.
- This is calculated for a health board area and applied to the local authorities within it.
- The level is determined by how long it is estimated that there will be enough beds based on the current restrictions.

Where can I find the results for this indicator? https://www.gov.scot/collections/coronavirus-covid-19-modelling-the-epidemic/ each week on a Thursday at 5.30pm

D) Number of people likely to need acute hospital care in future weeks

The number of people that may need hospital care in the future is estimated using a model, and compared with the number of beds that will be available. The level is based on the number of weeks that it would be until all local available beds would be filled.



Level	Threshold
0	
1	6 weeks
2	5 weeks
3	4 weeks
4	3 weeks

To illustrate, the latest rate for Scotland would be **level 1** based on the thresholds above.

E) Number of people likely to need intensive care in future weeks

Why is this important?

- This indicator highlights areas where there is a significant risk of exceeding local Covid intensive capacity (ICU) within the next five weeks or earlier.
- Across Scotland as a whole, around 360 ICU beds can initially be made available to treat Covid patients. Delivery of this may be affected by other over winter-related pressures, such as increasing emergency attendances, staff absences and enhanced infection control requirements.
- These ICU beds are available quickly for Covid patients, but in order to further increase the number available, ICU beds would need to be released from other uses, e.g. cancelling operations. Therefore the total number of ICU beds available in NHS Scotland could reach 700 if required.
- Although the number of people currently in ICU with Covid is important, this can rise rapidly.

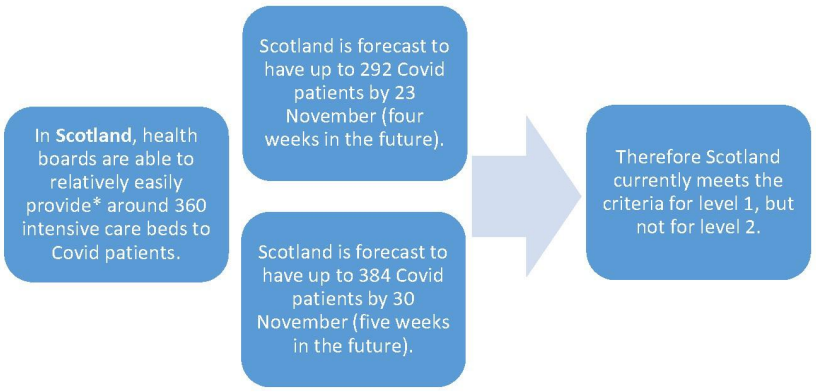
How is it calculated?

- The number of patients that will need to be in ICU in each area is estimated for five weeks into the future using a model, and this is compared to the number of ICU beds available for Covid patients.
- This is calculated for a health board area and applied to the local authorities within it.
- The level is determined by how long it is estimated that there will be enough beds based on the current restrictions.

Where can I find the results for this indicator? https://www.gov.scot/collections/coronavirus-covid-19-modelling-the-epidemic/ each week on a Thursday at 5.30pm

E) Number of people likely to need intensive care in future weeks

The number of people that may need intensive care in the future is estimated using a model, and compared with the number of beds that will be available. The level is based on the number of weeks that it would be until all local available beds would be filled.



Level	Threshold
0	
1	5 weeks
2	4 weeks
3	3 weeks
4	2 weeks

To illustrate, the latest rate for Scotland would be **level 1** based on the thresholds above.

*The total number of ICU beds available in NHS Scotland could reach 700 if care was cancelled e.g. planned surgeries

Indicator Result 28 October 2020

*Equivalent level to measures in place from 9 October to 2 November

Local authority**	Cases / 100k	Test Positivity	Cases / 100k forecast	Hospital forecast	ICU forecast	Present Level*
East Ayrshire	3	3	4	3	4	**3**
North Ayrshire	3	3	4	3	4	**3**
South Ayrshire	3	3	3	3	4	**3**
Scottish Borders	1	1	0	0	0	**2**
Dumfries and Galloway	1	2	2	0	0	**2**
Fife	2	3	2	0	0	**2**
Clackmannanshire	2	3	3	1	1	**3**
Falkirk	2	3	2	1	1	**3**
Stirling	2	2	2	1	1	**3**
Moray	0	0	0	0	0	**2**
Aberdeen City	1	1	0	0	0	**2**
Aberdeenshire	1	1	0	0	0	**2**
East Renfrewshire	3	4	4	1	2	**3**
Inverclyde	1	2	2	1	2	**3**
Renfrewshire	3	3	3	1	2	**3**
West Dunbartonshire	3	3	2	1	2	**3**
East Dunbartonshire	3	4	4	1	2	**3**
Glasgow City	4	4	3	1	2	**3**
Highland	0	0	0	0	0	**2**
Argyll and Bute	1	1	1	0	0	**2**
South Lanarkshire	4	4	4	4	4	**3**
North Lanarkshire	4	4	4	4	4	**3**
East Lothian	2	3	2	0	0	**3**
Midlothian	2	3	2	0	0	**3**
City of Edinburgh	2	3	0	0	0	**3**
West Lothian	3	4	4	0	0	**3**
Orkney Islands	1	1	0	0	0	**2**
Shetland Islands	0	0	0	0	0	**2**
Angus	1	1	1	1	0	**2**
Dundee City	3	3	3	1	0	**2**
Perth and Kinross	1	2	1	1	0	**2**
Na h-Eileanan Siar	1	0	0	0	0	**2**