Effectiveness of NPIs in the Local Health Protection Zones and the Firebreak in Wales

Key messages

- The NPIs used for the local interventions appear to have less impact than national interventions (medium confidence)
- The population interventions used in Wales appear to wane over time and become less impactful (medium confidence)
- Further work is required to analyse the impact of local and national interventions to support the response to Covid-19 in Wales (high confidence)

Summary

The purpose of this paper was a rudimentary evaluation of the effects of the local and national control measures for Covid-19 in Wales in September and October 2020, in order to support ongoing policy discussions.

Local interventions designed to suppress the growth of the Covid-19 pandemic in Wales were brought into local authorities at different times in September and October 2020. Whilst further time and data sets will show a more complete picture, our current evidence shows that there have been mixed and limited effectiveness from these non-pharmaceutical interventions (NPIs) which is consistent with SAGE and international findings[1][2]. In no Local Authority (LA) were the restrictions alone effective enough to bring the incidence and positivity of Covid-19 low enough to warrant removing the restrictions.

Where there is an effect, the local NPI packages seem to hold their effect for no more than 21-28 days (high confidence). There may be several reasons why the effectiveness of NPIs lessen over time and they are likely to include "pandemic fatigue" in the population[3], confusion where there are competing messages or where the rules are too complex and uncertainty around how long measures will last.

The firebreak seems to have had a more significant national effect on the transmission of the virus in the population (high confidence), and it is possible that the benefits will pass across to the lagging indicators of hospital admissions, ICU admissions and deaths (low confidence). The high background incidence, high nosocomial transmission and presence of infection in many vulnerable of closed settings such as care homes mean that the benefit of the firebreak on these numbers may be lost before it becomes visible in the data.

[1] SAGE, Summary of the effectiveness and harms of different non-pharmaceutical interventions, 21 September 2020

SAGE, Non-pharmaceutical interventions (NPIs) table, 21 September 2020

[2] SAGE, Impact of Interventions TFG: The UK's 4 nations' autumn interventions (update), 26 November 2020

[3] World Health Organisation, Pandemic fatigue - Reinvigorating the public to prevent COVID-19, September 2020

Introduction

In order to offer the best advice based on the evidence available, there is a need to conduct a rapid analysis and review of the effectiveness of the local and national interventions that were introduced in September and October 2020 to reduce transmission of SAR-COV-2. As the 2 week firebreak comes to a close, evidence of what is and is not effective in reducing transmission of the virus in Wales will support decisions on interventions later in the year.

Wales developed a cautious approach to removing restrictions after the first lockdown, and continued to encourage people to work from home where they could, which may have had a suppressing effect on the progress of the pandemic in Wales.

The situation of the firebreak was not optimal. It was deployed as soon as was practically possible in Wales. Whilst a longer period would have been preferable, no central funding was made available until after the Welsh firebreak was underway and commitment to an endpoint had been announced. The modelling and advice that was used to consider the firebreak[4] suggested that a two-week firebreak would reduce the incidence of Covid-19 in Wales by around three weeks, whereas a three week firebreak would reduce the incidence by around five weeks. The most important part of this advice was that after any firebreak the R number should be held to a point as close to R=1 or below as possible.

Recommendations from previous advice have focussed on simplifying regulations, reducing variation at local level and encouraging sustainable behaviour changes that raise personal responsibility for personal and public health.

In some LAs, R may have been significantly higher than the national average as they entered the firebreak period. This could be demonstrated in the rapid growth in cases in the over 60s, hospitalisations and deaths in the associated health board areas.

In order to analyse the impact of the NPIs in local authorities and across Wales we need to find the appropriate set of indicators that can be analysed in order to show whether the interventions are having an effect. Indicators have value at different points in the progress of the epidemic, some leading and some lagging compared to the state of infection at any particular time. None of the indicators on their own is able to give a clear picture of the state or likely progress of the virus, but the following indicators and methods have been chosen for their availability and general value. There is a caveat that with the smaller populations and variety of geographic, demographic and economic factors across Local Authorities in Wales, caution should be taken not to read too much into individual results.

Indicator	Pros	Confounders
Cases per 100,000	Simple indicator Same time as actual infection	Change in number of tests/day Natural noise with low case incidence Small population will inflate data Lag between infection and onset of symptoms
Positivity	Simple indicator Same time as actual infection	Sample bias can be an issue Targeted testing will yield higher results than longitudinal

[4] Technical Advisory Group, Fire break advice, 19/10/2020