



Northern Periphery and
Arctic Programme
2014–2020



EUROPEAN UNION
Investing in your future
European Regional Development Fund

<https://core.interreg-npa.eu/>



UNIVERSITY OF
LIMERICK
OLLSCOIL LUIMNIGH

School of
Medicine

Professor Liam Glynn
liam.glynn@ul.ie

COVIDWATCHEU-NPA PROJECT #411 FINAL REPORT 7 - March, 2021

7 Policy implications and Recommendations

7.1 “Elimination” Versus “Suppression”

COVID-19 is a novel coronavirus disease that is having a global health and economic impact since it was first detected in the city of Wuhan, China in December 2019. As a result, every country and region is struggling to learn and adapt to the new environment to ensure an effective public health response and to protect their populations from the economic impacts. Most countries were quick to recognise the potential public health risks of this disease for their populations and economies.

The COVID-19 pandemic has had a varied impact on different NPA regions and countries. However, no region or community has remained untouched by the effects of the pandemic. As expected in areas of low population density and little travel by the population, low numbers of cases have been noted (e.g. Greenland, Faroe Islands). As population density increases and particularly in urban areas, the risk associated with COVID-19 appears to increase. But there have been notable exceptions to this with some rural and low density population areas disproportionately affected largely due to “super-spreader” events (e.g. Faroes mid-Summer festival).

In terms of management of this huge challenge, it is apparent that a “one-size-fits-all” solution is not appropriate particularly in the context of the emergence of additional waves of COVID-19. However, what has happened in China, Taiwan, Singapore and New Zealand and more in Iceland, the Faroe Islands, Greenland, Finland and Norway demonstrates that an effective and aggressive public health response including quarantine, social distancing, and isolation of infected people can contain the COVID-19 epidemic.

Our analysis of the countries involved in this project leads to an important conclusion. Pursuing an “elimination” strategy for COVID-19 is possible and leads to far less COVID-19 deaths than a “suppression” strategy. While this may be easier for smaller island nations, Norway and Finland provide evidence that with the correct strategy larger and more connected countries can achieve results of the same order as the countries whose geography and smaller size confer an advantage.

7.2 Advantages and Disadvantages specific to NPA Rural and Remote Regions

i) Low Population Density

On the whole, low population density appears to be an advantage when it comes to reducing transmission of COVID-19 which is dependent on person to person transmission. However, low population density also means reduced access to health care services and medical staff which makes managing COVID-19 morbidity and mortality more challenging. As a result, access to testing and medical care of an infected individual is more difficult than in high population density settings such as urban areas where medical care and staff tend to be concentrated according to the Inverse Care Law (“The availability of good medical care tends to vary inversely with the need for it in the population served”³⁹) which still is highly relevant to the NPA regions and countries today particularly in a time of a pandemic.

ii) Low accessibility

Low accessibility or rurality again appears to be advantageous in terms of reducing transmission of COVID-19 which is dependent on person to person transmission as not only is population density low in such areas but the overall movement of individuals in and out of such areas is also lower. There are of course exceptions to this seen when such regions are seasonal holiday destinations for large segments of the urban population. This movement of people over the summer period of 2020 has been associated with COVID-19 dispersion events across such regions (e.g. Ireland’s Wild Atlantic Way; Iceland’s Ring Road). However, as restrictions come into force, such communities become increasingly isolated and important economic activities such as tourism on which many such areas are dependent suffer disproportionately.

iii) Low Economic Diversity

NPA regions and countries are often dependent on a small number of forms of economic activity such as tourism or primary industries such as agriculture or fishing. Some of these activities do not permit a “work from home” option and have been given exemptions in most

cases in terms of COVID-19 restrictions (e.g. agricultural and fishing activities in all NPA regions and countries) and as a result economic activity in these sectors has not suffered significantly. However, certain sectors such as tourism on which these communities depend strongly have not received such exemptions and have suffered disproportionately.

iv) Community Spirit

Rural and remote communities by their nature display an increased connectedness, mutual dependence, often homogenous identity and sense of community. This may be viewed negatively by those who value privacy and the rights of the individual above all else. However, the inter-dependence of the COVID-19 pandemic is very evident and best summarised by the President of the European Commission, Ursula von der Leyen when she said “No one is safe until everyone is safe”. With interconnectedness as a cultural basis of many remote and rural communities, there is significant evidence of a higher engagement and self-regulation with public health advice and the behaviour change demands of the pandemic response. The importance of real community engagement, trust and acceptance have been highlighted time and again as key factors in a pandemic response.

In summary, the NPA region is simultaneously benefitting from a unique advantage in terms of socio-economic make-up, culture and geography, and therefore reduced transmission but with the unfortunate side effect of fewer healthcare resources if the population does become ill.

7.3 Specific Lessons learned from Countries examined

While the above advantages and disadvantages are particularly pertinent for NPA regions within countries examined, for those with non-NPA regions it makes sense that overall control at the national level is critically important to keeping COVID activity to a minimum in all areas. To that end, some specific lessons learned include:

- I. Speed of Response: One of the most important aspects of the most successful responses seen is “Speed”. Whether this is in protecting the vulnerable or getting a comprehensive testing apparatus up and running (eg: the use of Salmon farming industry technology to create a population wide testing strategy in the Faroes), speed is essential. The Virus moves very quick and a countries response must be quicker and key weeks were wasted early in the pandemic in countries such as the UK and Ireland. As Dr Mike Ryan, the executive director of the World Health Organization's Health Emergencies Programme so memorably explained “Be fast. Have no regrets. You must be the first mover. The virus will always get you if you don’t move quickly. If you need to be right before you move, you will never win. Perfection is the enemy of the good when it comes to emergency management. Speed trumps perfection. And the problem in society we have at the moment is everyone is afraid of making a mistake, everyone is afraid of the consequence of error. But the greatest error is not to move”.

- II. **Politics:** Removing politics from the public health response can help the foundation of solid policies that hold up to scrutiny by citizens. Experience from the Faroes and from Norway demonstrates that medical experts, particularly those based locally, being involved at the highest levels of decision-making can lead to improved outcomes. In some territories it has been possible for the academic public health expertise to suggest adjustments in the strategy as the pandemic continued. This is not to say that public health expertise should go unchallenged by the public, particularly as this pandemic wages on. However, where citizens see that decisions are being made free from political interference and based on the latest experience and best evidence globally, the majority of population will stay the course in terms of each country's response.
- III. **Legislation:** Experience from countries that have based their prevention strategy on voluntary public cooperation and not on legislation show that this approach is possible if decision making is transparent and communicated clearly.
- IV. **Borders:** Experience from countries that do not establish new checks and controls at their borders, with a particular focus on countries with free movement between countries (i.e. Republic of Ireland and Northern Ireland, Scotland and Northern Ireland), demonstrates that border control remains a critical part of successful responses. This is important to consider in terms of a response to the disease which is based on the concept of an epidemiological unit. While undoubtedly a complex and difficult issue to resolve, free movement encourages importation of new virus. However, the key question remains does each country act as an independent epidemiological unit or could sufficient cross-border planning and cooperation facilitate a European continent wide approach.

7.4 Recommendations

1. **Priorities:** There are many in public health but those that should be considered first are effective communication to get the population onside at the same time as the vulnerable within the population are identified and protected such as those in hospital settings or long-stay residential units. A proper "Public Health" response values the health of the "population" over that of the "individual" which is the opposite of the traditional "medical" approach which focuses on the "individual". This is why a global pandemic requires these trade offs to be made and articulated such as in the case of vaccination. If there is a limited supply of vaccines, prioritisation of first vaccine doses to a wider population should be considered to confer some immunity on a larger population versus giving second doses to a smaller group of individuals.

2. **Crisis management:** A number of important principles to remember which come from Change Theory:
 - i. This is a high-anxiety, low-trust situation (the archetypal “Burning Platform”)
 - ii. It is vital early on in the crisis to create a clear “Vision” outlining the response to the pandemic with a clear pathway and signposts of progress.
 - iii. “What can we do tomorrow”: provide concrete advice and clear action(s) to take while asking people to take direct responsibility themselves for undertaking that action.

3. **Communication:** Many successful countries and regions have demonstrated the following key principles in communication with the populations: Tell the unadulterated truth; don’t sidestep questions as often happens in political arenas but instead answer questions directly; do not be afraid to describe the statistics as the public can follow them but at the same time keep the human element and cost of the pandemic front and centre.

In particular, the metrics described in Section 2.2 (rate of cases and deaths, positivity rate and case fatality proportion) can tell citizens a lot about how this pandemic is controlled, and can be easily explained and graphed. It is important to remember these metrics are only valuable if the testing system is fit-for-purpose. We should encourage people to remember that the vast majority of people are compliant with measures and it is dangerous to bombard people with pessimistic, negative or critical messages particularly around the behaviour of particular cohorts (e.g. younger people).

An additional area to focus on in future communications is numbers vaccinated - vaccination campaigns seem to be making a difference in countries who have received vaccines early on, and this is a source of great hope for many so should be part of any communication strategy.

4. **Public health measures (individual):** Covid-19 has an overdispersed model of spread and hence the conditions that drive its spread have been variously described as the 5Ps (**P**eople in **P**rolonged **P**oorly-ventilated **P**roximity without **P**rotection). Hence, the need to focus on the individual behaviours that will prevent transmission including hand hygiene, physical distancing and the use of masks in crowded places.

5. **Public health measures (societal):** While the mantras of “Test, Test, Test” and “Test, Trace, Treat” were to the fore early in the pandemic, countries with strong Testing and Tracing systems have managed the pandemic better than others. While Testing is a relatively fixed intervention that has seen huge expansion since the beginning of the pandemic in all countries, it can still be overwhelmed relatively quickly, as seen in Ireland when a significant surge in infections occurred following the Christmas period.

Tracing is something that seems to be organised very differently from country to country. Contact tracing as a task varies hugely from case to case, and thus may be harder for policy makers to measure, assess and prioritise it as an intervention worth investing in. Particularly early on, due consideration was not given to establishing Tracing capacity in many countries, and dealing with subsequent waves has been much more difficult as a result. While we appreciate the time needed to teach such public health skills, in many countries capacity for Tracing was not built up to the same degree as Testing was during the relatively quiet summer period.

If countries are to pursue “near-elimination” strategies, they will need to again give priority to developing contact tracing capacity so smaller outbreaks can be controlled very early on. The “over-dispersion model” of COVID-19 transmission means that approximately 80% of the infections are caused by 20% of those infected hence the need to close down these “over-dispersion” events as early as possible in the chain of transmission. While it is interesting to consider additional advancements that may aid with this, such as reliable antigen testing⁴⁰ and contact tracing Apps⁴¹, it is likely that basic public health approaches will be the foundation of all efforts to limit the damage caused by COVID-19. Regional public health expertise must be central to this process.

Finally, while perhaps an obvious area to target, border control to prevent importation of new cases and viral strains also needs to be given a renewed focus. Indeed, the Faroes has given a good blueprint for other countries to follow - by insisting on PCR testing of all incoming travellers, followed by a week in quarantine and retesting 6 days later before people can once again return to community life.

6. **Opportunities:** While COVID-19 has severely impacted national economies, generating a new crisis, there are opportunities emerging in the post-COVID context especially linked with digitisation, new workplace practices and re-skilling. With the population in isolation it becomes increasingly important to connect and prioritising the diffusion of fast broadband in peripheral areas can provide alternative work and social opportunities. Remote work, or re-skilling of employees or unemployed individuals during lockdown, and even the organisation of online cultural events are examples of such. It is also a way to rethink current businesses and sectors to adapt to the new demands. In a successful example, the Faroe Islands have developed virtual tours that enable users to use a computer game-like tool to explore the island in the comfort of their home. The promotion of local products and activities is also a growing trend with the pandemic. Increasing numbers of consumers are now preferring local grocery shops to big commercial facilities, and local products from producers they trust, there is an emergence of new practices in tourism (e.g. staycation, mobile homes) and a prevalence of outdoor, social-distancing abiding activities (e.g. hiking). Peripheral and remote areas in the NPA area are uniquely privileged because of their abundance of natural landscapes and their remoteness to be able to attract tourism in this new context. With the proper safety

measures in place, there are new opportunities and new markets (particularly domestic) to be exploited.

The current NPA programme has already shown significant initiative, commitment and capacity to quickly respond to issues raised by COVID-19. The NPA COVID-19 Response Group, founded by the late Dr David Heaney and comprised of partners from across the NPA area working in a wide range of health, research, technology and public sector organisations, came together quickly drawing on their past cooperation experiences of working in the NPA⁴².

Examining excess mortality helps us to consider the broader healthcare system effects of COVID-19. However, the longer term effects on mortality and morbidity due to late presentations and consequent delayed diagnoses of other time-sensitive non-COVID conditions are as of yet unknown but are no doubt considerable. Ongoing analysis of excess mortality, through efforts such as the EuroMOMO project²⁶, will provide valuable insights into damage to health caused directly and indirectly by COVID-19.

7.5 Conclusions

- Open data can inform the general public and healthcare workers about their own regional and national response to the COVID-19 pandemic
- While being mindful of differences and nuances inherent in non-standardised testing, deaths in recording and reporting, Open Data can facilitate comparisons of countries' approaches to managing COVID-19 waves
- NPA designated-regions within larger countries experienced approximately half the COVID-19 deaths that more urbanised non-NPA regions within the same countries.
- Key strategies that influence the spread of COVID-19 are:
 - Early intervention and planning with protection of vulnerable populations in healthcare and long-term residential settings (eg: Nursing homes)
 - Consistent public health advice (handwashing, masks, social distancing, reducing travel and social contacts) and more recent advice around dispersion models such as improved ventilation, strict avoidance of mass gatherings etc.
 - Ongoing emphasis on the importance of investment in adequate, responsive and capacious Testing and Contact Tracing systems

- Lockdowns – widespread restrictions, while a blunt instrument, work to reduce viral spread. Near-elimination can be achieved when additional public health measures to reduce viral spread are given adequate attention and resourcing
- Clear, regular and transparent communication from those in public office, including information about disease trends, potential severity of illness, effects on other healthcare and benefits of vaccination.
- Border control (14-day quarantine or day 5 or 6 PCR test for newly arrived travellers)

References

1. Jones N R, Qureshi Z U, Temple R J, Larwood J P J, Greenhalgh T, Bourouiba L et al. Two metres or one: what is the evidence for physical distancing in covid-19? *BMJ* 2020; 370 :m3223 doi:10.1136/bmj.m3223
2. The Atlantic. America Is Trapped in a Pandemic Spiral. 09/09/2020. Available at: <https://www.theatlantic.com/health/archive/2020/09/pandemic-intuition-nightmare-spiral-winter/616204/> (accessed 20/03/21)
3. Cao C, Chen W, Zheng S, Zhao J, Wang J, Cao W. *Biomed Res Int.* Aug 2016. Analysis of spatiotemporal characteristics of Pandemic SARS spread in mainland China. 2016;2016:7247983. doi: 10.1155/2016/7247983. Epub 2016 Aug 15. PMID: 27597972; PMCID: PMC5002496. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5002496/>
4. World Health Organisation (WHO) Regional Office for Europe Website. Jan 2021. The WHO European Healthy Cities Network: a response to the COVID-19 pandemic close to the people <https://www.euro.who.int/en/health-topics/environment-and-health/urban-health/who-european-healthy-cities-network/the-who-european-healthy-cities-network-a-response-to-the-covid-19-pandemic-close-to-the-people>
5. Levin AT, Hanage WP, Owusu-Boaitey N. et al. Assessing the age specificity of infection fatality rates for COVID-19: systematic review, meta-analysis, and public policy implications. *Eur J Epidemiol* 35, 1123–1138 (2020). <https://link.springer.com/article/10.1007/s10654-020-00698-1>
6. Public Health England (PHE) Report. July 2020. Excess Weight and COVID-19: Insights from new evidence. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907966/PHE_insight_Excess_weight_and_COVID-19_FINAL.pdf
7. Popkin BM, Du S, Green WD, et al. *Obesity Reviews.* Aug 2020. Individuals with obesity and COVID-19: A global perspective on the epidemiology and biological relationships. <https://doi.org/10.1111/obr.13128>
8. Deeks JJ, Dinnes J, Takwoingi Y, Davenport C, Spijker R, Taylor-Phillips S, Adriano A, Beese S, Dretzke J, Ferrante di Ruffano L, Harris IM, Price MJ, Dittrich S, Emperador D, Hooft L, Leeflang MM, Van den Bruel A. *Cochrane Database Syst Rev.* Jun 2020. Cochrane COVID-19 Diagnostic Test Accuracy Group. Antibody tests for identification of current and past infection with SARS-CoV-2. 25;6(6):CD013652. doi: 10.1002/14651858.CD013652.
9. Department of Health (DOH) Ireland. Mar 2020. Press release- Statement from the National Public Health Emergency Team - Wednesday 11 March

Available at: <https://www.gov.ie/en/press-release/451b35-statement-from-the-national-public-health-emergency-team-wednesday-1/>

10. US Centre for Disease Control Website. New Variants of the Virus that Causes COVID-19 (updated 12-02-21). Available at <https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant.html> (accessed 19/03/2021).
11. Tang JW, Tambyah PA, Hui DSC. Journal of Infection. December 28, 2020
Emergence of a new SARS-CoV-2 variant in the UK
[https://www.journalofinfection.com/article/S0163-4453\(20\)30786-6/fulltext#articleInformation](https://www.journalofinfection.com/article/S0163-4453(20)30786-6/fulltext#articleInformation)
12. World Health Organisation (WHO). Apr 2020.
International Guidelines for Certification and Classification (CODING) of COVID-19 as Cause of Death. Available at -
https://www.who.int/classifications/icd/Guidelines_Cause_of_Death_COVID-19.pdf?ua=1 (accessed 20/03/2021)
13. Raleigh V. British Medical Journal (BMJ). June 2020.
Editorial. Tackling UK's mortality problem: Covid-19 and other causes.
<https://www.bmj.com/content/369/bmj.m2295.full>
14. World Health Organisation (WHO). Apr 2020. COVID-19-virtual press conference -30 March 2020. Available at: https://www.who.int/docs/default-source/coronaviruse/transcripts/who-audio-emergencies-coronavirus-press-conference-full-30mar2020.pdf?sfvrsn=6b68bc4a_2 (accessed 20/03/2021)
15. Oran DP, Topol EJ. Prevalence of Asymptomatic SARS-CoV-2 Infection: A Narrative Review. Ann Intern Med. 2020;173:362-367. [Epub ahead of print 3 June 2020]. doi:10.7326/M20-3012
16. Ioannidis JPA. Infection fatality rate of COVID-19. Bulletin of the World Health Organization. Oct 2020. Available at:
https://www.who.int/bulletin/online_first/BLT.20.265892.pdf (accessed 20/03/2021)
17. Eurostat. Excess Mortality Statistics. Available at:
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Excess_mortality_statistics#Excess_mortality_in_the_European_Union_between_January_2020_and_January_2021 (accessed 20/03/2021).
18. Central Statistics Office (CSO), Ireland. Measuring Mortality Using Public Data Sources 2019-2020. 2nd November 2020. Available at:
<https://www.cso.ie/en/releasesandpublications/fb/b-mpds/measuringmortalityusingpublicdatasources2019-2020/> (accessed 20/03/2021)
19. Scottish Government. Statistics.gov.scot website. Available at:
<https://statistics.gov.scot/data/deaths-involving-coronavirus-covid-19> (accessed 20/03/2021)

20. National Records of Scotland. Deaths involving coronavirus (COVID-19) in Scotland. Available at: <https://www.nrscotland.gov.uk/files/statistics/covid19/covid-deaths-data-week-53.xlsx> (accessed 12/03/2021)
21. Northern Ireland Statistics and Research Agency (NISRA). Excess Mortality & Covid-19 Related Deaths. Mar 4 Update. Available at: <https://www.nisra.gov.uk/publications/excess-mortality-covid-19-related-deaths> (accessed 20/03/2021)
22. UK Government. GOV.UK official website. Coronavirus (COVID-19) in the UK – Scotland figures. Available at: <https://coronavirus.data.gov.uk/details/deaths?areaType=nation&areaName=Scotland> (accessed 20/03/2021)
23. Northern Ireland Statistics and Research Agency (NISRA). Statistical bulletin- Excess Mortality and Covid-19 Related Deaths in Northern Ireland March to December 2020. Available at: <https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/Excess%20mortality%20%26%20Covid-19%20related%20deaths%20in%20Northern%20Ireland-Mar-Dec%202020.pdf> (accessed 20/03/2021)
24. UK Government. GOV.UK official website. Coronavirus (COVID-19) in the UK – Northern Ireland figures. Available at: <https://coronavirus.data.gov.uk/details/deaths?areaType=nation&areaName=Northern%20Ireland> (accessed 20/03/2021)
25. Kontis V, Bennett JE, Rashid T et al. Nature Med 26, 1919–1928. Oct 2020. Magnitude, demographics and dynamics of the effect of the first wave of the COVID-19 pandemic on all-cause mortality in 21 industrialized countries. <https://www.nature.com/articles/s41591-020-1112-0>
26. EuroMOMO project: European mortality monitoring. EuroMOMO Bulletin, Week 1, 2021. Available at- <https://www.euromomo.eu/> (accessed 20/03/2021)
27. World Health Organisation (WHO). Mink-strain of COVID-19 virus in Denmark. Nov 2020. Available at- <https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/11/mink-strain-of-covid-19-virus-in-denmark> (accessed 02/02/2021)
28. Government of Ireland, GOV.IE website. Mandatory Hotel Quarantine. Updated 11/03/2021. Available at: <https://www.gov.ie/en/publication/a6975-mandatory-hotel-quarantine/> (accessed 20/03/2021).
29. Department of Foreign Affairs (DFA), Ireland. Guidance on Travel to Korea, Republic of (South Korea). Updated 8th Jan 2021. <https://www.dfa.ie/travel/travel-advice/a-z-list-of-countries/republic-of-korea/> (accessed 20/03/2021)

30. Australian Government- Department of Home Affairs Website. COVID-19 and the border- Travel restrictions and exemptions. Updated 19/03/2021. Available at <https://covid19.homeaffairs.gov.au/travel-restrictions> (accessed 20/03/2021)
31. Ministry of Health, New Zealand. COVID-19: Border controls. Updated 15/03/2021. Available at: <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-response-planning/covid-19-border-controls> (accessed 20/03/2021)
32. Burton JK et al. Evolution and effects of COVID-19 outbreaks in care homes: a population analysis in 189 care homes in one geographical region of the UK. October 2020. The Lancet Healthy Longevity, Volume 1, Issue 1, e21 - e31.
33. Public Health Scotland. Vaccination Update Dashboard. Available at: https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview (accessed 20/03/2021)
34. International Monetary Fund (IMF). Reopening from the Great Lockdown: Uneven and Uncertain Recovery. June 2020. Available at: <https://blogs.imf.org/2020/06/24/reopening-from-the-great-lockdown-uneven-and-uncertain-recovery/> (accessed 20/03/2021)
35. Goolsbee A, Syverson C. Fear, lockdown, and diversion: Comparing drivers of pandemic economic decline 2020. Journal of Public Economics, Volume 193. November 2020. DOI: <https://doi.org/10.1016/j.jpubeco.2020.104311>.
36. Hart JT. The Inverse Care Law. Lancet, 1971(1): p. 405-412.
37. Pavelka M, Van-Zandvoort K, Abbott S, Sherratt K, Majdan M. The impact of population-wide rapid antigen testing on SARS-CoV-2 prevalence in Slovakia. Science. 23 Mar 2021. DOI: 10.1126/science.abf9648
38. Colizza, V., Grill, E., Mikolajczyk, R. et al. Time to evaluate COVID-19 contact-tracing apps. Nat Med 27, 361–362 (2021). <https://doi.org/10.1038/s41591-021-01236-6>
39. Fonseca L, McMaster I. Coronavirus and the NPA: EPRC Briefing paper. 2020, European Policies Research Centre.