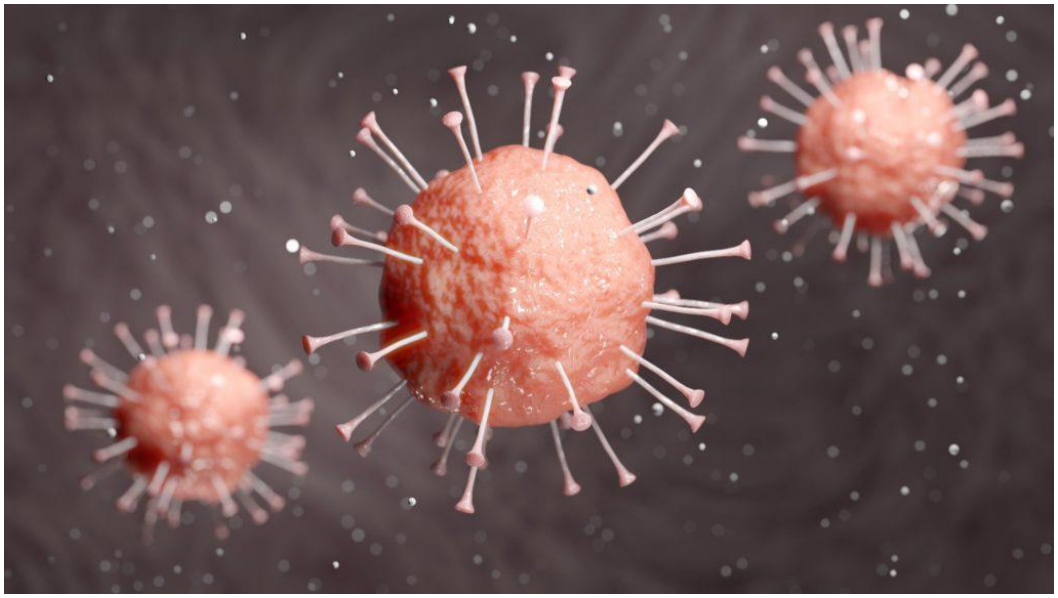

Health Security Considerations to Improve the Efficiency and Cost-Effectiveness of Ireland's Future Infectious Disease and Epidemic Control Efforts

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Retrospect is easy, and Ireland's successes in epidemic control should not be understated: the shape of the country's mortality curve without interventions compared to what has been achieved would make for interesting viewing, were it possible to hypothesize such a counterfactual. But there nonetheless perhaps has to be a series of lessons learned from Ireland's mistakes — if they could be called that — in response to the epidemic threat. Like almost every other

initially affected country (and far less than some), Ireland was unprepared in critical ways for onset.

Yet in future, such situations will inevitably occur under different circumstances; the world has changed dramatically since February of this year, in an unprecedentedly short space of time. Thus, what Ireland "should" have done then is no longer relevant – rather, Ireland's future health security may be determined by the application and implementation of a separate set of significantly more streamlined, controlled, and focused interventions that will ensure all the hard work (on both national and individual levels) so far is not undone.

Unfortunately, or fortunately, it is not just about stockpiling: while Ireland, as with much of the global north, was caught out in terms of medical supply preparedness, there is no way that this particular manifestation of an epidemic could have been realistically predicted in the public health procurement context. Future epidemics may also not necessarily be pulmonary or respiratory; while stockpiling is important — face mask and ICU preparedness, as well as the rapid conversion of other facilities to medical uses, should all be encouraged — such strategies are not enough in themselves, nor are they necessarily the most cost-effective options.

Borders and Travel

Closing Air and Sea Ports: In terms of fast and effective — as well as cost-effective — responses, the immediate closure, or at least limitation on use, of air and sea ports, particularly from affected areas, might be a priority (within EU constructs). In retrospect this step, combined with enforced and monitored quarantine for repatriated citizens, would unquestionably have caused a significant reduction in infection rates. Of note, such efforts might also be combined with specific travel policies related to sporting events — as the disastrous consequences of the Cheltenham festival on Irish public health have illustrated.

Immediate Border, Air, and Sea Port Testing: For those ingress and egress pathways that remain open during lock down periods, and preceding them, immediate port-of-entry testing should be prioritized. This might also be a consideration for the prioritization of roll-out of limited testing resources, with such locations taking precedence.

Priority Countries: A further international ingress and egress consideration might be the identification of priority countries based on the comprehensiveness of their response — though this may be complicated by stopover issues. Countries such as Belarus, for example, might be placed on highly limited ingress and egress policies, whereas those journeying from countries such as New Zealand or other non-affected countries might enjoy greater travel flexibility.

Closing Borders: Determining an effective way to manage the Northern Ireland border in the health security context is clearly a priority. It is unlikely that Irish legislative influence will extend to Northern Ireland in the immediate future, or even the medium term; yet a cross-border working group on epidemic preparedness and policy cohesion may go some way towards addressing this.

Pass System Consideration: While it was vital for health services that public transport continue to function, enabling health care workers to get to work, in many cases this leniency was abused by those making non-essential journeys. A pass system for essential staff to use on buses and trains might help to address this issue.

Adding Health Attaches to Embassy Staff: Many other countries, such as the United States and Norway, have made health attachés an integral part of international embassy staff. Their work — to transmit information on epidemic risks and assist with repatriation of epidemic-affected citizens, amongst many other day-to-day responsibilities including those related to aid programmes and HIV/AIDS efforts — helps the diplomatic corps to meaningfully contribute to public health efforts; Ireland may wish to consider initiating such a strategy forthwith.

Macro-Level Public Health Security Policies

Short-Term, Intensive Responses: Too few restrictions scare, leaving society with a sense of fatalism and lack of control; Swedish approaches in this regard have been questioned in just the same way as American and British policies. Conversely, too many regulations, particularly over long time periods, are unsustainable. The solution might be to balance sustainability and reassurance: the imposition of more Draconian, immediate and wide-ranging restrictions — but for proportionately shorter time periods. This might include giving the Irish Defense Forces a significant initial role, rather than their recent provision of late-in-the-day support to overstretched law enforcement resources.

Immediate Geographical Distance Restrictions — Despite their Shortcomings: Mobility restrictions formed a key and highly effective element of the national response; for these to work comprehensively, however, they also need to be accompanied by hard borders beyond which no movement, except for urgent or emergency purposes, can take place. Otherwise, even two-kilometer limits can, in theory, form a spatial chain linking the entire country.

A Focus on Health Care Worker and Vulnerable Population Safety: Future epidemics – should they resemble this one – will have the advantage of responses informed by previously-identified risk factors such as age, co-morbidity, and other considerations such as smoking or respiratory health issues. In all of those populations most affected in 2020, significant added protective measures should be allowed for – whether these are specifically for health care workers, or tailored to the case of old-age retirement homes.

Contact Tracing: Contact tracing strategies have been described as "chasing shadows", and are indeed highly unlikely, in the age of media saturation, to have any real effect during the peak of a widespread and out-of-control epidemic. However, the use of tech to guide contact tracing strategies, even with all of the manifold problems that they face (and the frequent failure of such strategies in recent months) will undoubtedly help to form a further basis for early-stage epidemic containment in future public health efforts.

Law Enforcement Authority: The uncertainly and vagueness with which law enforcement was equipped with public health and epidemic control policing powers has caused extensive confusion. Only with a specific legal mandate to prosecute behaviors that threaten public health can the Gardai and others be expected to perform their duties with efficiency and accountability, should such events repeat themselves at any point in the future.

Varying Coping Capacity of Different Areas and Groups: For many population groups or other social demographics, recent months have amounted to inconvenience, fear, and frustration – but little more. Rather than blanket policies, far greater attention and support, in future, should perhaps be focused on those living in apartments or areas of high-density housing; those, also, who have been unable to access green spaces or beaches.

Virtual Schooling and Working: The speed with which Ireland successfully transitioned to home schooling and working could scarcely be improved upon; nonetheless, there exists an opportunity for more formalized contingency plans in this regard, covering supervision, curricula, and formal advice for parents and

employers. With luck, many elements of the new status quo in this regard will persist, marking a much-needed paradigm shift in commuting (and therefore pollution and congestion) patterns.

Not Looking to the UK: Ireland has been, for so long, used to looking to the United Kingdom for leadership in global matters. Perhaps the recent epidemic has, along with Brexit, brought down the curtain once and for all on this era. UK policies have proved to be highly fallible; the groupthink of the European union, while also often flawed, might prove to be a far more effective paradigm in future.

Distinguishing Decision-Making from Advisory Boards: While centralized and authoritative control of national responses is often unfortunately essential in epidemic situations, the distinction between advisory and decision-making bodies should be considered. In the panic of the early stages of epidemic onset, unelected bodies without a formal decision-making remit may inadvertently become highly influential; their future role should be analyzed, not least to ensure that they do not eclipse pre-existing national emergency response entities.

Media and Public Health Information

Immediate Release of Geographical Locations of Infections: Like so many other countries Ireland has discovered that, in public health emergencies, it risks becoming a victim of own bureaucracy. This consideration, linked to the loosening of restrictions on protected health information (PHI) in emergency situations, is of critical importance. Releasing locational information down to high levels of resolution and granularity — street level, if possible, but failing that district — will help the national effort on a number of levels: enabling those within this areas to take added care; enabling those outside those areas to avoid them; and enabling the government to focus both resources and restrictions on specific areas. Stigma risks are, perhaps, more than compensated for by reductions in fear, suspicion, and 'false stigma'.

Releasing PHI to Academics: One of the most problematic elements of the Irish response has been the dearth of analytical information (as opposed to the seemingly endless stream of commentary, expert or otherwise). For many epidemiologists, life in recent months has been business as usual, when their efforts might far more rewardingly, productively and valuably been focused on immediate initiation of research into risk factors, demographic data, and spatial epidemiology – to name but a few avenues of exploration. In future, it is perhaps

important that the government consider allowing much faster data mining by Irelands academic community, with associated assistance in cutting the red tape and bureaucracy involved.

Surveillance and Knowledge Transfer: In many Ebola-affected countries, surveillance and knowledge transfer from field to centralized areas has been of particular importance. Establishing a civilian as well as a medical surveillance system for epidemic outbreak reporting may further help to ensure that future Irish responses are conducted in a targeted and focused manner.

Preventing Panic Hoarding: As previously observed, the necessary suddenness of the government's initial lockdown announcement was accompanied by much unnecessary fear, not least the undignified and demeaning scenes of panic buying and conflict at supermarkets during March. Fortunately, Irish society soon came to its senses, and has avoided the allure of hoarding (and therefore shortages); nonetheless, government public health messaging should perhaps include a specific "non-hoarding" component as well.

Broadcasters, Journalists and Bloggers are not Epidemiologists: The question of how to control the plethora of false theories, fake news, fearmongering and paranoia generated by both the mainstream media and the internet is one that it almost impossible to address. Better, perhaps to advise society to direct its attention to a limited number of trustworthy news sources; over recent months, uninformed theories and speculation have abounded, leading to much unnecessary distress and fear. Too often, also, epidemic reporting has been conflated with political agendas: while many public figures have a role to play in terms of awareness building and messaging regarding the importance of adhering to government guidelines, they should also perhaps be asked to recognize that they are rarely qualified to make informed opinions on specialist medical subjects.

Avoiding Excessive Concern with Economic Consequences: In an epidemic situation, there appear to be two economic options, neither of which are attractive: allow businesses to continue operating, even though their trade will inevitably suffer, and face higher death and infection rates – or suspend businesses, invest more in public health, and face similar sets of economic consequences. The key point is that, in both scenarios, economic losses are inevitable and unavoidable: those demanding more *lassiez-faire* approaches, or documenting the economic opportunity costs of restrictions, would do well to temper their criticism of government actions in this context. Indeed, there is a

case to be made for suspending all such distracting and distressing economic impact analyses at such times.

A Health Benefit Focus: The closure of pubs may have led to many health benefits; similarly, two of the main risk factors associated with the epidemic are cigarettes and alcohol: the former because of behavior change and loosening inhibitions, as well as close confinements in small spaces; the latter because of effects on respiratory health. Perhaps the events of recent months may also serve to loosen the hold of the Licensed Vintners Association on Irish society, helping the country to move away from the absurdities and disadvantages of its heavy-drinking stereotype. Of added relevance is the evidence of the role of off-license sales during pub closures — inevitable contributors to the social disorder associated with public drinking.

Feasible and Enforceable Individual-Level Efforts

Blanket and Immediate Face Mask Policies: Where possible, this might be combined with publicity efforts to de-stigmatize face mask use. The lack of such policies in recent months should be attributed far more to a lack of national preparedness and fear of supply shortages than to any doubts about their effectiveness: even 50% reductions in transmission are well worth the investment, but only if face mask use can be enforced on a routine basis.

Investing in Tech: Contact tracing apps, which are likely to be essential in controlling future community-level outbreaks, should be made accessible to all. But, if adherence to public health guidelines is a government edict, so to should the necessary technology be made available to all: this need not involve the provision of smart phones to every member of the population, but could — in theory — include some kind of low-cost personal and portable alert or monitoring system that does not impinge on privacy. In the same way, efforts to allay fears about personal surveillance implications should, of course, accompany any such step.

Marshalling Volunteers, Businesses, and Communities: Volunteer organization involvement was, for many, inhibited or delayed at critical times in Ireland due to vetting procedures. While such safeguarding efforts are of course essential, their use during times of national public health emergencies should perhaps be reconsidered. In the same way, a mandatory emergency preparedness system for businesses, communities, and individuals – even extending to the pre-designation of community wardens – might help to alleviate much of the frustration and powerlessness that many felt.

The above inevitably excludes many other considerations, such as managing economic benefits — should automatic payments avoid the blanket reimbursements and assurances that so troubled the economy via banking guarantees in the past? There is thus a vast amount more that Ireland and many other countries have learned in these regards in recent months; the prospective issue is to ensure that the events of Spring 2020 not be dismissed as one-off anomalies. In an increasingly globalized world, only longer-term efforts to impose health security, ingress and egress polices can ensure that the mistakes of the past are not repeated.

The key distinction that may be easy to overlook in a time of summer weather and declining infection rates is also between epidemic elimination and eradication: while the former may have been achieved, the latter is a significantly different prospect – both in the current case, and for future epidemic preparedness from any infectious disease. Events such as annual lockdown preparedness mobilization and mock tests of national responses should therefore not be dismissed: it is only through rapid preparedness on the individual as well as the national level that future epidemic containment will depend.

Finally, timing may also be critical: as noted above, the immediate application of intense restrictions for shorter time periods, involving entities such as not only the defense forces but also the coast guard and civil defense will inevitably curtail the epidemic in a much more effective way — rather than the gradual phasing up of efforts, which allowed infection to spread in a manner that was, albeit briefly, beyond the control of the government.

Please note: The views expressed in this piece are the author's own and not those of the Irish Global Health Network.

Irish Aid
An Roinn Gnóthaí Eachtracha agus Trádála
Department of Foreign Affairs and Trade

The Irish Global Health Network gratefully acknowledges Irish Aid for their ongoing support.