

# National Public Health Emergency Team

18<sup>th</sup> June 2020

## **Future Considerations for the National Research Response to COVID-19**

**Prepared by the Research Subgroup of the COVID-19 Expert Advisory Group**

Action required

- For noting
- For discussion
- For decision

## **Background**

The Expert Advisory Group (EAG) functions as an expert sub-group of the National Public Health Emergency Team (NPHE) and provides independent, evidence-based expert advice to inform the COVID-19 public health response. A Research Subgroup (REAG) was established by the Expert Advisory Group to assist in its work. The REAG subgroup is a multidisciplinary group with representatives from the Department of Health, Health Service Executive, Health Research Board, Science Foundation Ireland and leading experts from academia. The role of the group has been to interface with the EAG and NPHE to capture current and emerging priority health research topics, and to provide advice on potential collaborative opportunities to advance COVID-19 research, including opportunities at North-South, European and International levels. To this end the REAG identified five priority areas<sup>1</sup> for NPHE attention and action in order to assist in the public health response. Work is on-going in each of those areas.

As part of the broader research landscape, Ireland's National Action Plan in response to COVID-19, published on 16<sup>th</sup> March 2020, includes a series of key actions to accelerate research to support the immediate national response and to support the global body of knowledge on COVID-19. In recognition of the fact that in order to deliver these actions, a national, coordinated, collaborative response would be required, the Department of An Taoiseach has convened a forum, which includes representation from Government Departments, Agencies and Research Funders. The forum provides a platform for an exchange of views across Government on research programmes, priorities, opportunities and gaps.

## **Purpose**

The purpose of this paper is to contribute to that cross Government consideration of how Ireland can, through its present infrastructural support systems and funding partners, build on initial work to deliver a nationally coordinated research effort, drawing from all sections of the research landscape to take us through the next stages of the pandemic, support rapid social and economic recovery, respond to the social consequences of the pandemic and enhance our preparedness for future emergencies. In drafting the paper, the REAG has drawn on the expertise and insights offered by the Research Group convened by An Taoiseach, as well as by other subgroups of NPHE<sup>2</sup>.

## **Next Steps**

The paper will be submitted to the Dept. of An Taoiseach for review and consideration by the Senior Officials Group, with a view to informing a national coordinated research response to COVID-19.

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<sup>1</sup> Clinical Trials, Testing Strategy for COVID-19, Sero-epidemiology studies, COVID Biobank,

<sup>2</sup> NPHE subgroups: Acute Hospitals; Behavioural Change; Guidance and Evidence Synthesis; Irish Epidemiological Modelling Advisory Group, Health Legislation; Medicine and Medical Devices Criticality Group; Pandemic Ethics Advisory Group; Vulnerable Persons; Health Sector Workforce

## **Future Considerations for the National Research Response to COVID-19**

COVID-19 is an extraordinary event in our national development. The experience of, and the response to, the COVID-19 pandemic will shape Ireland for many decades to come. The national and global impact of COVID-19 has already been profound. The health threat is further complicated by the linked economic fragility. Research is critically required across all sectors of society and the economy to understand the implications and impacts of COVID-19 to date, to guide the planned transition from emergency restrictions and to ensure optimal recovery and preparedness for future threats. This will require the efforts of a broad array of actors across government, its agencies, the research community (including STEM disciplines, social sciences and humanities) and industry. Working together to achieve shared goals will enable us to translate research findings into viable solutions to our most pressing problems. A coordinated research response to COVID-19 will reduce duplication and waste and speed up the translation of research findings into improved clinical care, better health outcomes for the population as well as social and economic outcomes.

The research and innovation community in Ireland, in responding to the COVID-19 crisis have already contributed to national priorities through a diversity of mechanisms including growth of national testing capacity, participation in international drug trials and provision of expertise to Government in areas such as infectious disease epidemiology, mathematical modelling and behavioural science. Research agencies from across multiple Government departments re-allocated and prioritised existing funds, delivering 'rapid-response' funding calls with remarkable speed and agility and with a highly coordinated and solution-focused approach. The rapid response calls have been extremely valuable, and have established some important principles. The strength and range of the response from researchers show that there is a very substantial resource available to address the challenges of the pandemic across all domains, while the agility and efficiency of the funding agencies shows what can be achieved through a coordinated approach.

As Ireland looks beyond the initial RESPONSE and to economic and societal recovery, a much broader research portfolio and a more diverse range of actors is required. We will need a national research effort to take us through the next stages of the pandemic, to support rapid social and economic RECOVERY, and to REIMAGINE and re-model our systems and infrastructure thereby enhancing our READINESS for the next pandemic and other public health emergencies.

A major programme of research will be required to better understand, mitigate and recover from the COVID-19 virus pandemic threat. Further funding beyond that already raised and committed will be required. In terms of international comparators, many other high-income countries are delivering major coordinated research programmes in response to COVID-19. Adjusting for population size and expressed in euros, France has committed approximately €50 per person, Denmark €28, and the UK and Canada approximately €20 per person over

the next 1-3 years, respectively. Coordinated additional investment will address the evolving and significant need for evidence to inform decision makers and practice, within and beyond the health arena. Large scale investment at a national level would also serve to leverage funding from national and international sources, particularly the EU, and position Ireland favourably for participation in European and international research initiatives.

In addition to more investment, Ireland also needs sustained collaboration and coordination, recognising that choices must be made regarding governance and co-ordination mechanisms in order to navigate a fluid and evolving situation. Investment in research structures and systems will inform healthcare service and health outcomes, educational systems and employment opportunities. A balance needs to be struck between investigator-led projects and the need for a national, coordinated and purposeful investment in high cost, shared infrastructures which can benefit and complement all.

Understandably, the initial research focus has been on understanding the pathways to infection and the biological consequences of the disease to enable the development of effective treatments and vaccines to mitigate the current threat. Over the next period of time as we learn more about the virus and as Ireland responds to COVID-19 with social, commercial and economic changes, it is expected new research priorities will present. In an effort to establish what research questions are considered most relevant to Ireland's response, recovery, readiness and reimagination efforts, the REAG reached out to the broader research system. Participants in the Forum convened by the Department of An Taoiseach as well as colleagues in other NPHET subgroups provided feedback, which the REAG has collated under seven broad thematic headings (Appendix 1). This is not intended as a "menu" of research priorities, but rather illustrates the nature and breadth of the research agenda confronting us in the short to medium term.

It is essential that Ireland delivers a high-profile, nationally coordinated research response similar to those which have been emerging internationally. Apart from the direct benefits of the research informing healthcare service provision for patients and the population at large, research would inform and impact employment, enterprise, education and government policy making, contributing to Ireland's image as an agile, knowledge economy and supporting the positive impression already generated internationally by the country's response to the crisis. It would support national participation in major international research programmes, particularly those within the EU, thereby leveraging both funding and research capacity. It would also enable all-island research initiatives. Action recommended here must be undertaken as a matter of urgency. The first wave of the disease appears to have peaked in Ireland, and we are much of the way through the first period of restrictions that has seen unprecedented changes in our way of life. Ireland needs to capture and understand the outcomes from this current period, and to develop national research assets, so that we can better inform and protect society in the future.

## Appendix 1

	Thematic Areas	Indicative examples of research activity that could be delivered
1	Stimulating and sustaining rapid economic recovery	<ul style="list-style-type: none"> <li>- Local, regional and national strategies to support economic recovery</li> <li>- Modelling of impact on income/expenditure of alternative policy scenarios (at macro and at household level)</li> <li>- Assessing impacts on domestic SME sector and the macro-economy</li> <li>- Innovative approaches to building supply chain resilience post-COVID</li> <li>- Maintaining employee engagement and productivity under pulse/remote conditions.</li> <li>- International relations, geopolitics and global coordination with supply chain fragmentation</li> <li>- Implications for insurance models/compensation systems</li> <li>- Strategies to support travel, airports and the aviation industry</li> <li>- Assessing which job-types, sectors, and industries are likely to be structurally affected after COVID</li> <li>- Restoration and recovery of the tourism sector.</li> <li>- Finding new approaches to accessing employment supports</li> <li>- Educational disadvantage, social exclusion, access to employment and non-COVID health impact</li> </ul>
2	Testing & Tracing: Testing will be central to allowing the economy recover, to facilitate people returning to work and to enabling the healthcare system to safely deliver COVID and non-COVID care	<ul style="list-style-type: none"> <li>- Co-ordinated development and evaluation of rapid, accurate, scalable, cost-effective and reliable testing capabilities with consideration of supply of critical reagents and end-user compliance.</li> <li>- Identification of cost-effective alternates to laboratory-based RT-PCR testing including use of validated Rapid near-patient testing (point-of-care) diagnostics for use at community level</li> <li>- Large scale cross-sectional and longitudinal cohort studies in the general population and specific occupational cohorts addressing the prevalence of neutralising antibodies to COVID-19</li> <li>- IT tools to aid identification of cases and contacts</li> </ul>
3	Understanding and managing infection, the development of diagnostics, therapies and vaccines and Ireland's participation in clinical trials	<ul style="list-style-type: none"> <li>- Studies to characterise the virus and understand transmission, infection and disease progression, including in asymptomatic individuals and across the life-course</li> <li>- The incidence and determinants of new and recurrent infection and the long-term sequelae of infection</li> <li>- Clinical trials of diagnostics, investigational therapeutics and vaccines, important that Ireland's healthcare system is resourced and positioned to partner in large, international multicentre clinical trials</li> <li>- Ability to strengthen Irish researchers' success in accessing international funding including H2020</li> <li>- Development and use of core clinical outcome measures across trials</li> <li>- Technological innovations to improve survival and recovery</li> </ul>

		<ul style="list-style-type: none"> <li>- Development of assays to evaluate vaccine immune response</li> </ul>
4	Research Infrastructure: including biobanks, registries, data curation/analysis	<ul style="list-style-type: none"> <li>- National public health systems, infection prevention and research infrastructure to enhance preparedness for future pandemics and other public health emergencies</li> <li>- Innovations to enhance joined up approaches with appropriately governed biobanks, data sharing, management and collaboration across settings</li> <li>- Infrastructure to facilitate access, sharing and linkage of population, health service and statistical data</li> <li>- Data governance, including privacy – the rights of the individual versus needs at a population level (public good) in the context of a crisis</li> </ul>
5	Epidemiology, modelling and behavioural science	<ul style="list-style-type: none"> <li>- Understanding transmission dynamics of the virus</li> <li>- The duration of natural and vaccine protection</li> <li>- The impact of social and environmental exposures and the role of immunogenetics across groups and individuals</li> <li>- Studies to support patient stratification</li> <li>- Strategies to sustain efficacy and uptake of public health measures such as infectious disease surveillance, infection control, social distancing and contact tracing</li> <li>- Consolidation of the modelling expertise currently provided on an ad hoc basis to Government as a coordinated research grouping</li> <li>-</li> <li>- Healthcare demand and capacity modelling of alternative policy scenarios</li> <li>- Studies into vaccine/technology hesitancy</li> <li>- Strategies to encourage utilisation of non-COVID-19 healthcare services and evaluate the broader health behaviours that will influence this</li> <li>- Interventions to investigate and respond to the mental health consequences of the COVID-19 pandemic</li> </ul>
6	Broader health, social and equality issues arising from the current crisis and restriction measures	<ul style="list-style-type: none"> <li>- Access, utilisation and performance of the health system during the pandemic including the need to address identified gaps in the system's knowledge and visibility with regard to medicine and medical device access, with a view to increasing our preparedness, ability and resilience to withstand future pandemics and crises</li> <li>- A need to align the needs of healthcare systems and patients with supporting innovation and pharma partners</li> <li>- The physical and psychosocial health burden on healthcare workers and strategies for support</li> <li>- Impact on physical and mental health and psychosocial recovery for families, communities and society</li> <li>- Impact of diet, exercise and other health behaviours</li> <li>- Impact of the pandemic and economic sequelae on deprived, vulnerable and minority groups</li> <li>- The burden on informal care givers</li> <li>- Analysis of impacts and learning across the life-course</li> <li>- Implications for health and social care arising from the impact on the charitable and voluntary sector</li> <li>- Health literacy, strategies to overcome misinformation, stigma and fear</li> <li>- Impact on poverty and food poverty</li> <li>- Impact on crime trends</li> <li>- Ethical considerations</li> </ul>

7	New and/or sustainable models of education, healthcare and work (including focus on innovations which support climate action agenda)	<ul style="list-style-type: none"> <li>- Implications for early learning and childcare sector</li> <li>- Maintaining the delivery of essential healthcare services across the continuum of care</li> <li>- Implications for training, repurposing or mobilisation of the workforce</li> <li>- Workforce strategies for post-COVID recovery</li> <li>- New methods of education teaching, learning and assessment</li> <li>- Innovations in infection prevention and control measures in education and workplace settings</li> <li>- Capturing and sustaining innovations introduced during the COVID response (e.g., telemedicine, new funding models for services, digital innovations to support remote working)</li> <li>-</li> <li>- Exploring use of and outcomes from novel methods of education, teaching, learning and assessment</li> <li>- Implications for commuter travel/transport</li> </ul>
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