

Covid-19: The Pandemic of Our Time

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This April 2020 issue of the IMJ coincides with a unique moment in our country's history. As I write this commentary we are in the midst of a global pandemic. The cause of the pandemic is the novel Coronavirus, SARS-CoV-2 or Covid-19. The main clinical features are a fever, a cough, and shortness of breath. 80% have a mild illness, 14% a more critical illness, and 6% a critical illness.

Its severity is age-dependent. The elderly especially those with co-existing conditions are more likely to require hospitalisation, intensive care, and are more likely to die from the infection¹. The disease is less severe in children². Covid-19 is the most serious respiratory virus epidemic since the 1918 H1N1 influenza. However it differs in that the 1918 pandemic particularly affected the young³, the opposite to Covid-19.

Currently, in Ireland there are 3,849 cases of Covid-19 and 98 related deaths. There are 900,306 cases worldwide with 45,692 deaths (3rd April 2020).

Covid-19 first appeared in Wuhan, China in December 2019⁴. From the onset it has been both very contagious and has had a high mortality ranging from 1% to 4%, the outlier is Italy with a 10% mortality. In Ireland the mortality is 2.1%.

In a period of 3 months it has spread from one country to the next and currently it has infected almost every part of the planet. The first cases in Europe were recorded in France on January 24th and then in the UK, Italy and Spain on January 31st. The first reported case in Ireland was February 29th.

There are no pills and no vaccines against Covid-19. We are left with non-pharmaceutical interventions (NPIs) to contain its spread. Unlike the 1918 pandemic, however, we do have a wide range of supportive medical measures including the full range of intensive care modalities where necessary.

The NPIs have introduced a new range of sombre terms into our daily lives and conversations. Society has come to understand the meaning of social distancing, self-isolation, testing, contact tracing, flattening the curve, *R*, mitigation and suppression strategies, the surge, mortality rates, cocooning, and lockdowns. The letter *R* stands for the reproduction number, the average number of contacts to whom an infectious person transmits the virus. If *R* is below one it will peter out, if above 1 it will spread. The *R* for Covid-19 is between 2 and 3 presently⁵.

The mitigation strategy is a socially less disruptive approach, which aims to slow but not stop the virus. The suppression strategy is a more comprehensive approach, which aims to reduce cases to low numbers and prevent person-to-person transmission⁶. The latter is the one now in operation in many countries including Ireland. Currently, the country is at a virtual standstill. All the schools and universities are closed. All sporting activities have been cancelled. The pubs, restaurants, and all non-essential businesses are closed. Employees are working from home. All non-essential travel is restricted. The elderly are cocooned. Families are keeping in touch electronically instead of physically.

The current international benchmarks for 'Covid-19 treatment readiness' are the number of available medical/nursing staff, the number of ventilators, and the quantity of personal protective equipment (PPEs). All

three are being expanded as rapidly as possible. The key message coming from the series of webinars organised by Imperial College, London is the protection of the healthcare staff from infection⁷.

In Ireland, a novel arrangement has been reached with the 19 private hospitals becoming part of the public health system for the duration of the Covid-19 crisis. This will provide an additional 2,000 beds, 9 laboratories, and 8,000 staff.

Dr Mike Ryan, executive director of the World Health Organisation's Health Emergencies Programme states 'inertia will be punished, be fast, have no regrets, you must be the first mover, the virus will always get you if you don't move quickly'.

The measures undertaken by the Irish authorities have been met with widespread approval. From the outset the Dept. of Health, the HSE and their team of experts have set down a clear, measured strategy. They have built steadily on the strategy as events have unfolded. The Taoiseach Leo Varadkar and his Government has implemented the strategy in full. Communication has been clear and frequent. The trio of Simon Harris, Tony Holohan, and Colm Henry have appeared on our screens daily to inform us about the rapidly unfolding events. We know what is happening.

The media has understood the strategy and has played its part in communicating it to the public. The public, in turn, have complied with the directives and have been prepared to accept the major disruption of their personal lives and livelihoods for the common good.

The selfless sacrifices of the healthcare workers on the frontline have been greatly acknowledged by all sectors of society. The images of the young doctors and nurses returning home from Australia to help have been inspiring. An additional 800 nurses and midwives have registered to practice in the last 2 weeks⁸.

Internationally, Angela Merkel, the German Chancellor has been highly regarded⁹. She has come across well in this current crisis. It is said that she listens intently and that she takes the advice of her experts. To date, Germany has achieved a low Covid-19 mortality rate of under 0.5%. Among the explanations being offered is that it brought in extensive testing and contact tracing at an early stage. This allowed it to follow the South Korea approach. From the outset, fewer older people were infected. The median age being 45 years compared with 63 years in Italy. In addition Germany has a better medical capacity with 28,000 intensive care beds, while Italy has 5,000.

The experts are uncertain about how long the pandemic will last and how will it end. This is a key issue. It determines how long the NPIs will need to remain in place.

The Imperial College's Report⁶ on Covid-19 states 'while experience in China and now South Korea shows that suppression is possible in the short-term, it remains to be seen whether it is possible in the long term'. Meanwhile, Wuhan, where the pandemic started last December is now at the end of March, after a 4-month period, loosening its restrictions on population movement. This is being done gradually. There are understandable concerns about viral re-emergence as normal activities are resumed.

The opinion piece in the New York Times, March 23rd suggested 'the best-case scenario is that the warm weather will reduce the number of infections and provide a summer respite. By the fall, the virus will have attenuated and more effective medications will be available'. On the other hand, we are all only too aware of the varying degrees of less optimistic but probably more realistic forecasts being forwarded by other expert groups and commentators.

A vaccine is urgently needed but appears that it may be 12-18 months before one is produced. The previous SARS epidemic ended before vaccine development was complete and the federal funding was reallocated. Lurie et al state 'if multiple vaccines are ready for testing in the second half of 2020 it will be important not to crowd or burden countries with multiple trials'¹⁰.

The Covid-19 virus has posed many challenges for our country. It is new to us and we do not have any immunity to it. We have limited knowledge about its pathogenesis and how it will evolve in both the short and long-term future. We have made a good start. We have taken the correct series of steps. Undoubtedly, further measures will be needed before we can bring this pandemic to a successful conclusion.

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