

## Longevity Science Panel

### Summary of COVID-19 Report

Dame Karen Dunnell, October 2021



Longevity Science Panel (LSP) is a multidisciplinary group of scientists set up to help Legal & General understand the many different influences on life expectancy in the UK. Our group regularly monitors influences on life expectancy from the perspective of social and actuarial science, epidemiology, medicine and health and care system developments. Previous papers have covered socio-economic and gender differences, international comparisons, impact of new treatments and biology and access to data sources. We summarise our knowledge from these perspectives and highlight the many uncertainties that remain for the COVID-19 pandemic.

The COVID-19 pandemic has spread quickly and caused many deaths, long and short-term illness as well as disruption to all parts of society, its institutions and economics globally. It has also changed the way we do things, particularly in science and technology.

It is generally agreed that the pandemic is moving towards being endemic across the world rather like flu. It shares the ability of the flu virus to continually change making it difficult to completely eradicate. It has already created many variants in different parts of the world in differing environments- lockdowns, isolation, testing and vaccination availability for example. These national conditions are very different and controlling the virus will depend on the ability of all places to create the optimum condition through a combination of vaccination, hygiene, health care and social distancing measures.

## **Health and Care**

The first area to be impacted by COVID-19 was health and care. Hospitals were quickly inundated and critical care beds filled up. Many staff and patients caught the disease, causing extra staff pressure and the release of long stay patients to care homes to free up beds fuelled the epidemic among the elderly frail. Hospital work became dominated by COVID-19 and much other activity was slowed right down. People were encouraged not to go to Primary Care and Emergency services. Much NHS help was restricted to a phone service. There is now a major backlog in diagnosis and treatment for other conditions which will take many years to catch up. This may also have an impact on death rates as late diagnosis of major killers like cancer and heart disease leads to earlier death.

The NHS however showed great resilience and flexibility. Much technology that was waiting in the wings was implemented without delay, for example video consultations on mobile phones. Staff were redeployed, temporary critical care areas were created. This demonstration of innovation will make it easier in future to introduce new ways of delivering care.

The negative impact was the pressure on an already underfunded service. As well as being at increased risk of infection many staff have suffered psychologically from the pandemic and stress and burn out are common. Paradoxically applications for medicine, nursing and other therapy degrees are at an all-time high.

Early on in the pandemic a test and trace system for the general population was set up outside the NHS and the Public Health Service. This was based on a purely private sector model and has proved to be expensive and only partially effective.

The UK has always had a rapid reporting system for deaths-published weekly. So very early on in the pandemic it was easy to see the numbers of deaths occurring. A similar system was soon implemented for hospitals showing the number of cases and deaths across the country on a daily basis. Subsequently such information has also been available for positive cases and vaccinations in the community. Much data linkage work by ONS has subsequently enabled the more detailed analysis of death rates for COVID-19 showing wide variations by age, gender, deprivation, ethnicity and geography.

As soon as the pandemic was recognised the search was on for drug treatments that reduce mortality or the length of stay in hospital. This was not a search for new drugs but to identify which existing ones could impact

on this new illness. The first large drug trials were designed within a month of the virus entering the UK and results published within three months. Two therapies have been identified to treat mild cases treated at home that reduce the risk of hospitalisation. A corticosteroid inhaler for example reduces the time to recovery for older patients. So far five therapies have been found that have small effects on the progress of more severe cases. More treatments are under investigation but it is clear that no magic bullet has been found and mortality remains high.

The development of vaccines for COVID-19 began very quickly after its genetic sequence was published in January 2020. Scientists around the world were able to respond and the first clinical trial was begun in March. In addition, regulators and manufacturers responded rapidly to approve and make the new vaccines. By 1 June 2020 16 were underway and many more in trials. This speed is unprecedented.

A key concern about vaccines is their effectiveness against emerging variants. This requires continuous development and testing to keep ahead. Another issue is availability across the world. Currently only rich countries have enough vaccine and the resources to distribute them to reach levels of immunisation that would slow the pandemic right down. This is a major challenge for international co-operation and sharing that unless met will slow the return to global travel as we have known it and risk new outbreaks everywhere.

National systems vary in how easy it is to mount a vaccination campaign and there is great variability even among richer countries in how quickly most adults are being vaccinated. There are also issues about take up of the vaccine with doubters active in many countries. Also, some groups in society have more difficulty accessing these services especially when they depend on using modern technology. These factors work against achieving a level of immunity in society where the illness then declines. So, an endemic situation is envisaged for the future where there will be probably seasonal outbreaks of unknown size. Booster vaccines will undoubtedly be necessary to reduce outbreaks putting extra pressure on services.

### **Economy and Society**

The size of the UK economy fell by almost ten percent in 2020 – the biggest fall since records began. The hospitality sector was most affected by lockdown as almost all hotels, restaurants and cafes were closed and only served takeaways.

Unemployment increased dramatically in spite of the Government furlough scheme and support for small businesses. Government borrowing and state support for services such as health, transport and education were unprecedented in peacetime. Working at home – a major feature of lockdown- could only apply to some white collar workers. This feature of the response has no doubt contributed to the substantial inequalities in death rates from COVID-19.

The UK already had significant and increasing health inequalities before the pandemic. As mentioned all the usual factors- age, gender, ethnicity and deprivation were apparent early on for COVID-19 mortality. But there are other health issues that have arisen such as mental illness rates, increases in unhealthy behaviours and of course the emergence of Long COVID – a post viral illness which is common, difficult to treat and potentially disabling over several months. It will take a year or more to measure the impact of all these outcomes on the population's health and wellbeing plus the impact of delays in diagnosis and treatment of chronic conditions. Conversely when lockdown was in place there were fewer accidents and fewer incidences of other infectious diseases. It remains to be seen how the pattern of ill health in the UK emerges after lockdown ceased, whether it will revert to "normal"? The main uncertainties must be the level of winter pressure on services in 2021 and the worsening of health inequalities.

The pandemic and the resulting lockdown have affected many areas of life. Many more families are living in poverty evidenced by the increased recourse to Social Security and dependence of food banks. Family life has been affected – negatively for many people – with a rise in domestic abuse and lack of support from family and friends. Social isolation and fear of the virus have been widespread. School closures for many weeks put much pressure on children and their families. Most forms of social ritual- funerals, weddings, Christmas and birthdays – were seriously curtailed.

### **Science and Technology**

The social sciences have played a large part in advising on and monitoring the social, psychological, health and economy of the UK. The usual national statistics have continued to be published as well as the rapid introduction of COVID-19 monitoring using NHS data, new surveys involving testing random samples of the population and mobile phone apps allowing people to report symptoms. Mobile apps are also being used to trace contacts of positive cases and to monitor those travelling from abroad. Environmental testing is monitoring virus spread through wastewater. Mobile phone

technology has moved ahead rapidly in hospitals and primary care and will probably remain as an efficient alternative to many consultations.

On the laboratory front the development of vaccines and tests continues. In the data lab the exploitation of large data sets has moved forward to help predict aspects of COVID-19 and its impact. The whole process of research and development has speeded up from the vaccine story to the early release of research findings.

## **Conclusion**

The pandemic has had a devastating impact on us. On the other hand, it has unleashed many untapped resources of energy, flexibility, innovation and “can do” approach to challenges. However, potential emergence of faster-spreading or more virulent variants could still cause problems, requiring continual surveillance. Success in managing the pandemic will require effective global efforts in immunisation, monitoring, healthcare, public behaviour and scientific developments.