The Ethics of Pandemic Lockdowns

Introduction

COVID-19 is a novel respiratory disease first identified in Wuhan, China, that is caused by the coronavirus, SARS-CoV-2. With widespread human-to-human transmission, the virus is highly contagious, and the COVID-19 pandemic is now of global concern.

In response to the pandemic, more than half of the planet’s population was placed into community lockdowns of varying severity. By lockdown, I mean here, stay-in-place orders that require citizens to stay at home and not to leave their residences for a period of time, usually equal to several incubation periods of the virus. These stay-in-place orders are accompanied by the closure of non-essential businesses since management and employees have to stay at home. In many communities, religious houses of worship were also shuttered.

During the current pandemic, it was not uncommon for entire countries and continents to be placed into lockdown for one or two months to contain the first wave of viral infections. However, as I write this briefing paper at the beginning of June, most of these community lockdowns are being eased around the world. Nonetheless, there is a non-trivial probability that they may have to be reinstated in response to a second wave of the pandemic later this year.

Not surprisingly, these community lockdowns have been controversial. In this briefing paper, I would like to consider several of the ethical questions raised by pandemic lockdowns. Before I do this, however, I think that it is important to begin with a scientific explanation of a pandemic and the scientific reasons used to justify pandemic lockdowns. We will then turn to an ethical investigation of their use during this time of the COVID-19 pandemic.

The Science of Pandemics

Not every infectious disease can trigger a pandemic that would lead to a lockdown. Two ingredients are required. First, you need an infectious agent that can spread rapidly and efficiently among people and that can cause severe illness or even death. I add the second characteristic because pandemics caused by a cold virus can occur but would never trigger the

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community lockdowns that we now associate with the current COVID-19 pandemic. Second, you need a biologically susceptible human population that lacks immunity to that infectious agent. When both of these ingredients are mixed, the combination can lead to an explosive growth in the number of infected individuals, many of whom would require hospitalisation, and some of whom would die.

Mathematically, the rapid spread of an infectious agent in a susceptible population at the onset of a pandemic can be modelled with an exponential mathematical function. This is why the earliest phase of a pandemic is called its exponential growth period. In principle, with a disease like COVID-19 which doubled in number every five days or so during the initial outbreak in China, if you had 100 patients on January 1st, then you would have 6,400 patients by the end of the month. By the end of February, you would have 400,000 or so patients, and by the end of March, you would have 25 million patients.

In principle, therefore, if left unchecked, one hundred COVID-19 patients could infect the entire population of the United Kingdom within a four-month period. If this were allowed to happen, the National Health Service would be overwhelmed. Since an estimated 32% of COVID-19 patients needed to be hospitalised in Europe, this would translate to 21 million of the 66 million Britons needing hospitalisation within a four-month window, which is double the number of people living in London. The number of deaths in the UK would be staggering, especially since overwhelmed clinics and hospitals would also not be able to treat patients with life-threatening diseases unrelated to COVID-19.

To anticipate the objection that these numbers are mere mathematical and statistical sophistry, it is clear that a pattern of exponential growth best explains the tragic experience of those living in Italy when the COVID-19 pandemic began there in March of this year.

To anticipate another ‘numbers’ objection that a pandemic of seasonal flu and this pandemic of COVID-19 are comparable in severity, it is clear that this objection also fails. The mean number of counted deaths during the peak season of seasonal influenza in the USA from 2013-2020 was 752 patients, while the number of COVID-19 deaths counted in the USA during the week ending April 21, 2020, was 15,455 souls. This twenty-fold difference in mortality can be explained because the seasonal flu viruses are not as infectious as SARS-CoV-2, and the human population is not as susceptible to the influenza viruses as it is to SARS-CoV-2.

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6 As a measure of infectivity, the R0 of the influenza virus is estimated to be around 1.3, while the R0 of SARS-CoV-2 is currently estimated to be around 2.5. As for susceptibility, it is clear that most of us have at least partial
The Logic of Pandemic Lockdowns

From a public health perspective, there are two kinds of pandemics. In the same way that we have uncontrolled and controlled wildfires, we also have uncontrolled and controlled pandemics. For the most part, nations around the world imposed lockdowns on their populations when they believed that they were losing control of their local pandemics of COVID-19.

Uncontrolled pandemics are pandemics characterized by community spread. Community spread means that people have been infected with the virus in a particular geographical area, and this is key, including some who are not sure how or where they became infected. It is the preeminent sign that there are anonymous individuals in the community who are unknowing carriers of the virus. They are walking around shedding virus in the air, and on countertops, door handles, and seats. Usually, these carriers are asymptomatic or have a mild case of COVID-19. They probably do not even know that they are infected.

In contrast, controlled pandemics are pandemics where community spread is mitigated and contained. Here, viral infections are present, but they are rapidly identified and their spread is squashed. Individuals who are COVID-19 positive are isolated, and most of the people with whom they have interacted are quarantined until they either test positive or negative for the disease.

There are many ways to control a viral pandemic including encouraging personal hygiene, imposing social distancing, limiting gatherings of people, closing universities and schools, and instituting travel bans. In practice, these methods decrease the opportunities for a virus to spread from one infected person to another susceptible one. Testing, tracking, and tracing strategies also limit viral transmission by quickly isolating infected persons and quarantining their recent contacts so that they cannot infect others. There is clear evidence that implementing these social practices will help slow viral spread even prior to a lockdown.

However, these social interventions lose their efficacy when the number of infected cases in a community becomes large and community spread begins to explode. After this tipping-point, community-wide lockdowns become the only way for public health authorities to halt the pandemic from overwhelming the healthcare infrastructure of the community.

This move to a community-wide lockdown after multiple attempts to contain the pandemic with just social distancing and crowd limiting policies alone occurred in Singapore. The city-state reported its first case of COVID-19 in late January. For over two months, public health authorities were able to contain the pandemic without resorting to a community lockdown. However, in early April, it became clear that the government had to impose a stay-at-home order as part of its ‘circuit breaker’ strategy to control viral spread. The lockdown in Singapore lasted for nearly two months. It successfully contained community spread both in the city’s crowded migrant worker dormitories and throughout the island itself.

immunity against the common strains of seasonal influenza while none of us have any immunity against SARS-CoV-2.
The Efficacy of Pandemic Lockdowns

Are pandemic lockdowns effective at mitigating viral spread? Yes, they are. Numerous epidemiological studies have confirmed that lockdowns in different countries were able to mitigate the spread of COVID-19.7 Death rates dropped drastically after the imposition of lockdowns. In fact, countries like New Zealand that pre-empted large-scale outbreaks with early lockdowns appear to be on the verge of eradicating the virus from their territories. In a recent study, epidemiologists have estimated that 81% of the reduction in viral transmission in Europe can be attributed to the continental lockdown itself rather than to the other non-pharmacological interventions.8

Would earlier imposition of the lockdowns have made them more effective? One study awaiting peer-review has estimated that 35,000 lives would have been saved if social distancing and lockdown measures in the United States had begun one week earlier.9 Another pre-print describing the impact of stay-at-home orders in the United States made a similar prediction that an earlier lockdown would have saved tens of thousands of lives.10

More concretely, let us compare the pandemics in Metro Manila and New York City, two metropolitan areas with comparable populations, which recorded their first deaths from community spread of COVID-19 on March 11, 2020, and March 13, 2020, respectively. Metro Manila entered lockdown on March 15, 2020, while New York City waited just one more week to enter its lockdown on March 20, 2020. As of May 21, 2020, Metro Manila reported 621 total deaths from COVID-19 while New York City confirmed 16,232 total deaths. As predicted by the modelling studies described above, it appears that the early implementation of the city-wide lockdown was able to spare the lives of thousands of residents of the Philippine capital.11

Not unexpectedly, there have been critics who have argued that lockdowns are not necessary to control the spread of the COVID-19 pandemic when other interventions like social distancing practices, travel restrictions, school cancellations, and moderate assembly limits

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9 Pet et al., ‘Differential Effects of Intervention Timing on COVID-19 Spread in the United States,’ medRxiv 2020.05.15.20103655; doi: https://doi.org/10.1101/2020.05.15.20103655. Available at https://www.medrxiv.org/content/10.1101/2020.05.15.20103655v2

10 Xu et al., ‘Associations of stay-at-home order and face-masking recommendation with trends in daily new cases and deaths of laboratory-confirmed COVID-19 in the United States,’ medRxiv 2020.05.01.20088237; doi: https://doi.org/10.1101/2020.05.01.20088237. Available at https://www.medrxiv.org/content/10.1101/2020.05.01.20088237v2.full.pdf+html

11 For details and discussion, see Bernhard Egwolf and Nicanor Austriaco, O.P., ‘Mobility-Guided Modeling of the COVID-19 Pandemic in Metro Manila,’ medRxiv 2020.05.26.20111617; doi: https://doi.org/10.1101/2020.05.26.20111617

The Anscombe Bioethics Centre
The Macmillan Building, Pembroke College, St Aldate’s, Oxford OX1 1DW
tel: +44 (0) 7734 964620 -email: admin@bioethics.org.uk
website: www.bioethics.org.uk
Registered Charity No. 274327
have already been put into place.\textsuperscript{12} In support of their claims, they often point, either to Hong Kong, which was able to prevent community spread with testing, tracking, and tracing, and central quarantines, or to Sweden where social distancing policies were put into place without imposing a lockdown. In their view, these countries were able to control their COVID-19 pandemics without enduring a lockdown, and thus, should be emulated by other nations around the world.

In response, I agree that interventions policies like social distancing practices, travel restrictions, school cancellations, and moderate assembly restrictions, coupled with a robust testing, tracking, and tracing program can control a local pandemic of COVID-19. Hong Kong rapidly put these into place at the outset of the COVID-19 pandemic because they had built a robust pandemic response infrastructure after their experience of the SARS pandemic in 2002-2004. Thus, they never lost control of their pandemic. They never needed to resort to a lockdown.

However, as Singapore realized earlier this year, you do not need a lockdown until you do. Lockdowns are the most potent weapon that public health officials can deploy to prevent or to limit a viral wildfire. They are the nuclear option. Despite Singapore’s advanced and robust pandemic response strategy developed after their experience with the SARS pandemic in 2003 and the H1N1 flu pandemic in 2009, the city-state was unable to contain community spread for more than a few months. The country’s government eventual had to enact a strict stay-at-home order to mitigate viral spread. The lockdown lasted for two-months. It successfully mitigated the local pandemic.

Unlike Hong Kong and Singapore, most of the other countries around the globe did not have a recent pandemic experience that would have impelled them to develop a rapid society-wide pandemic surveillance and control response. Their perceptions of risk fell victim to the availability heuristic: Since they did not experience the recent SARS, H1N1, and MERS pandemics as gravely dangerous public crises, these countries believed the SARS-CoV-2 pandemic would not be grave as well. They were wrong. Without a ready and available pandemic response, they had to resort to lockdowns as their local pandemics exploded.

Turning now to Sweden. Opponents of lockdown measures have praised Sweden for its less restrictive containment strategy to rein in the first wave of the COVID-19 pandemic. The Swedish government decided that it would not embrace a countrywide lockdown. Instead, authorities advocated for voluntary social distancing, imposed bans on non-essential travel, and shuttered universities and high schools. Social gatherings were restricted to under 50 people, and people were advised not to visit old age care homes.

Government officials have explained that their non-lockdown strategy is a plan that assumes that we will be living with COVID-19 for an extended period of time. Therefore, they propose that the Swedish model will save lives, preserve the Swedish economy, and mitigate future waves of the infection by increasing herd immunity. It is a strategy for the long game.

\textsuperscript{12} For one example, see Lyman Stone, ‘Lockdowns Don’t Work,’ Public Discourse, April 21, 2020. Available at https://www.thepublicdiscourse.com/2020/04/62572/
As I write this at the beginning of June, it is clear that the Swedish experiment has failed. First, Sweden has ten times more deaths (452 deaths/1M population) than Norway (44 deaths/1M population), its Nordic neighbour that did impose a lockdown.\(^1\) Second, Sweden’s economy appears to have suffered as much from the pandemic as the other countries in the European Union.\(^2\) Third, at this time, Sweden still appears to have as many uninfected citizens as its Nordic neighbours.\(^3\) Therefore, it will just be as susceptible as its neighbours to a future wave of COVID-19, if one appears. Finally and unexpectedly, Sweden is now facing travel bans from the other countries in the European Union who are emerging from their lockdowns. These nations are wary of allowing Swedes to enter their territories because of the uncontrolled community spread at home. In the end, the country was not able to realize any of the initial goals of its COVID-19 containment strategy. In the meantime, over 4,500 Swedes have died, most of whom were elderly and vulnerable and alone.

Finally, how long should a pandemic lockdown last? From a public-health and epidemiological perspective, a lockdown can be justified while a pandemic is uncontrolled. Thus, it should last until public health authorities believe that they have gained control of their local pandemic. The conditions that fulfil this criterion will vary from one jurisdiction to another, from one country to another, and from one continent to another. However, at a minimum, a community should have low enough numbers of cases that their testing, tracking, and tracing capacity will be able to identify infected individuals and disrupt viral chains of transmission enough to prevent exponential growth.\(^4\)

**The Ethics of Pandemic Lockdowns**

As we discussed above, lockdowns are the most potent weapon that public health officials can deploy to prevent or to limit a viral wildfire. They are used to bring an uncontrolled pandemic into control. From a public health perspective, this would ensure not only the health and well-being of a community but also the integrity and functioning of its healthcare system. However, a lockdown also has profound and often devastating impacts on the community’s economic and financial well-being. In April 2020, because of the Global Lockdown, the International Monetary Fund (IMF) predicted that global growth in this year of pandemic would fall to -3%.\(^5\) This is a downgrade of 6.3 percentage points from January 2020.

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Which ethical and social principles would the Catholic moral tradition propose to guide the implementation and easing of a pandemic lockdown? I think that there are at least three.

First, we are called to acknowledge and respect the intrinsic dignity of each and every human being. Because of this dignity, every human being is priceless. Every human being is inestimable. We all have this ‘beyond-price’ value/worth/status because every human being is made in the image and likeness of God with an intellectual nature that allows us to know and to love.

Therefore the Down-syndrome foetal human, the 90-year old demented human living in a nursing home, and the 45-year old able-bodied human, who is also the managing partner of the mid-town NY law firm, all have equal value. They all have equal moral status. They are all created equal regardless of their social contribution, their social role, or their social success, or lack thereof. As a community, we have to try to protect them equally well during a pandemic even though we may not be able to protect everyone equally well.

Second, we are called to favour and to protect the poor and vulnerable. Recalling the story of the Last Judgement (Mt. 25:31-46), we are called to put the needs of the poor and vulnerable first. This is especially important to remember during this pandemic because it is the poor who are bearing the brunt of the loss of health and the loss of wealth caused by COVID-19.\(^\text{18}\)

Finally, we are called to protect and to preserve the common good. The *Catechism of the Catholic Church* describes the common good as ‘the sum total of social conditions which allow people, either as groups or as individuals, to reach their fulfilment more fully and more easily.’\(^\text{19}\) Within the commonweal, the government is given the authority to care for the common good. This is its primary responsibility.

Note that the good of a particular citizen, called the individual good, is necessarily and inextricably entangled with the common good because individuals cannot flourish without their families and their societies. It is hard to thrive when you are living in an impoverished country. It is a challenge to read in a town without books. It is difficult to be healthy when you are living in a virus-stricken city. The individual good needs the common good, and vice versa.

Pandemic lockdowns only make sense in the context of the common good. We have quarantines, not only to protect the individual *per se*, but also to protect the herd. Lockdowns are ethically justifiable precisely because they protect both the individual good, especially the individual good of the poor and the vulnerable, and the common good. They ensure not only

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\(^\text{19}\) *Catechism of the Catholic Church*, §1906.
the health and well-being of a community but also the integrity and functioning of its healthcare system.

It is clear that lockdowns could increase the numbers of deaths not linked to COVID-19. However, absent any numbers, we will not really know if these numbers are large or small. For instance, one estimate from the American Institute for Economic Research suggested that the lockdown in the United States would radically increase the number of suicides, opioid related deaths, and violent crimes. However another calculation done in Australia suggests that their lockdown would have saved more lives than lost from suicide or loneliness. And in Japan, there is data that already shows that the lockdown actually decreased the number of suicides there by 20%.

But should social quarantines be mandatory? Should individual citizens not be given the freedom to decide whether or not they are willing to assume the risk of infection and disease? These self-referential questions misunderstand the purpose of a social quarantine. Individuals should not be given the freedom to determine whether or not they submit to a quarantine, because individuals should not have the prerogative to make decisions that directly affect others around them.

The single university student who becomes infected at Bournemouth beach over the bank holiday has the potential of infecting numerous persons. She could survive COVID-19, but her elderly neighbour may not. She should not have the liberty of endangering the lives of others, especially those who are poor and vulnerable. There are times when the common good can and should limit the individual good.

But what about religious gatherings? How can the shuttering of churches, mosques, and temples be justified when prayer should be an integral part of a community’s response to crises?

I agree that prayer, and I would add, fasting, should be part of a complete response to a public health crisis. However, in my view, this does not have to include communal prayer. Recall that the primary goal of a pandemic lockdown is to minimize interactions among strangers by encouraging everyone to remain in their homes. Certain establishments would have to remain open to preserve the common good including supermarkets, hospitals and similar establishments whose operations are necessary for the community to maintain the health and well-being of its citizens.

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However, there is substantial evidence that religious gatherings often become superspreader events which are events where one infected person is able to infect many more other people. In South Korea, a single church service at the Shincheonji Church in Daegu triggered a large outbreak of COVID-19 that killed numerous individuals. In Malaysia, a single religious gathering at the Sri Petaling Mosque outside Kuala Lumpur was the spark for two-thirds of its initial 673 cases of COVID-19. In the United States, a single gathering of a church choir at Mount Vernon Presbyterian Church in Mount Vernon, WA, became a supercluster of COVID-19 where a single individual infected 87% of the attendees. Strikingly, the choir members were practicing social distancing at the time. Given this historical evidence, it is not unreasonable for public health authorities to limit religious gatherings to mitigate viral spread during an uncontrolled pandemic. Again this is justifiable because it protects the common good.

Finally, what about economic considerations? A pandemic kills but the economic devastation triggered by a lockdown kills too. Should we therefore not seek to accelerate the easing of a lockdown to save lives by preserving the local economy?

In response, though it is counter-intuitive, there is a lot of data that shows that death rates actual decrease during economic downturns in resource-rich societies. I list four here. First, economic data from US history reveals that more people – babies included – died when the economy prospered. Second, death rates go down during economic downturns. The gross death rate in the USA reached its lowest point in the historical record at that time, during the Great Depression. Third, death rates in Europe dropped faster during the Great Recession in the late 2000s, than before the crisis. Finally, death rates dropped dramatically in Spain during the Great Recession where unemployment reached 20%. It is not clear why recessions lower death rates in resource-rich countries. Nonetheless the contrary claim that economic downturns increase mortality is supported by evidence from rich countries.

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28. There is evidence that economic downturns do increase mortality rates in resource-poor countries: Hone et al., ‘Effect of economic recession and impact of health and social protection expenditures on adult mortality: a longitudinal analysis of 5565 Brazilian municipalities,’ The Lancet Global Health 7.11 (2019): E1575-E1583. In these countries, I think that a strong argument can be made that pandemic lockdowns may have to be mitigated when large numbers of the community are in extreme poverty and struggling to survive. If lockdowns trigger starvation, they have to be eased.
downturns necessarily lead to higher death rates is not supported by the evidence from history.

Therefore, though pandemic lockdowns do lead to economic downturns, these do not increase the total number of deaths. It is also not clear if countries that impose lockdowns are necessarily at an economic disadvantage as compared to those that do not. As we noted above, lockdown-free Sweden is emerging from the first surge of COVID-19 with an economy as crippled as its locked-down neighbours. Indeed, there is data from the 1918 flu pandemic that suggests that stronger pandemic responses including social lockdowns yield better economic recovery in the short and the long run.29

Conclusion

We are living through unprecedented times. In the past few months we have witnessed, and for most of us, personally experienced draconian social measures to limit the spread of a pandemic that has already claimed hundreds of thousands of lives. These lives were lost in spite of the global lockdown that confined nearly four billion people to their homes. However, it is also clear that the global lockdown did in fact mitigate the numbers of deaths around the globe.

As we move forward, public health authorities should do what they can to avoid another global lockdown. The pandemic experience in several countries and locales including South Korea, Taiwan, and Hong Kong, show us how to do this: By building a robust testing, tracking, and tracing capacity that can identify clusters of infections and break chains of viral transmission before they trigger community spread and exponential growth of the pandemic.

Nonetheless, as I already noted above, pandemic lockdowns are the most potent weapon that public health officials can deploy to prevent or to limit a viral wildfire. They are the nuclear option. We do all that we can to avoid them. But sometimes, to save lives and to protect the common good, we may have to push the button.30

Rev. Nicanor Pier Giorgio Austriaco, OP
Professor of Biology and of Theology, Providence College
Visiting Research Fellow 2014, Anscombe Bioethics Centre

30 I do believe that society-wide lockdowns though necessary at the outset of a pandemic, are crude instruments for controlling viral spread. As we move forward through this pandemic, I do not think that we will need to resort to the kinds of lockdowns that we have just lived through. Instead, we will be able to deploy targeted lockdowns in specific neighbourhoods, towns, and counties, that are ‘hot’. Why? Because we know more about the virus now than we did six months ago when it exploded out of Wuhan. We know enough now to do what we could not do at the beginning of the year.