

COVID-19 Rapid Response Impact Initiative | White Paper 2

When Can We Go Out?

Evaluating Policy Paradigms for Responding to the COVID-19 Threat

March 25, 2020



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This paper seeks (1) to explain why public officials in the U.S. are having such difficulty addressing the question of a timetable for their imposition of collective quarantine orders; (2) to explain the two available viable policy approaches and timetables for bringing the COVID-19 pandemic under control (rather than, as on a third possible approach, simply allowing it to run its course); and (3) to argue for the superiority of one approach and timetable, namely, the one we call “Mobilize and Transition,” which contrasts to a timetable we call “Freeze in Place” and also to the third approach, which we call “Surrender.” In the case of COVID-19, our under-preparation for a coronavirus pandemic (in contrast to an influenza pandemic) requires that we fold what should have been a stage of activity undertaken prior to an outbreak into our current efforts to fight the pandemic. This highlights the importance of the mobilization concept. We should understand ourselves as needing simultaneously to meet the requirements of interval 4 and interval 6 in the Department of Health and Human Services’ Pandemic Interval Framework. This requires an intensification of investment of resources—financial, human, industrial, and organizational.

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01 Introduction

As of March 21, 75 million Americans were under some form of stay-at-home order or advisory order, as reported by NBC News ([Burke and van Hagen, 2020](#)). This number is likely to increase. As of now, there is no clear timetable for the progress and conclusion of this collective quarantine. Californians are under lockdown “until further notice” ([State of California 2020](#)). On a more parochial scale, Harvard University students have been sent home “until further notice” ([Crimson News Staff 2020](#)). Whether these steps are taken at the level of the state or by a civil society organization, both are examples of collective social distancing, a public health strategy to mitigate the COVID-19 pandemic. A routine requirement for legitimate and ethical usages of collective social distancing, quarantine, and/or isolation orders is that they be issued with clear timetables for completion or re-evaluation and extension for justified reasons (e.g., [CDC 2004](#); [Allen et al. 2020](#)). As the U.S. Department of Health and Human Services puts it in the HHS *Pandemic Influenza Plan*, “Obtaining and maintaining public trust are key to successful implementation of these measures; clear messages about the criteria, justification, role, and duration of quarantine and ways in which persons will be supported during the quarantine period will help generate public trust” ([HHS 2005](#), p. S8-26). Orders issued “until further notice” do not meet the basic standards of ethical and acceptable quarantine.

The history of quarantine policy in fact reveals relatively standard approaches to the timetable for quarantines. Faced with the bubonic plague in the early modern period, for instance, the English monarchy settled on a period of forty days for household quarantine upon the discovery of any infected individual in the household. In this policy, England followed the example of much of the Continent, which had, over centuries, experimented with quarantines of thirty, forty, or fifty days (Newman 2012). Etymologically, the word “quarantine” derives from the Italian for “forty days,” which speaks to the centrality of clear timetables to the concept of quarantine itself.

Introduction

Modern quarantine is a relatively new phenomenon. After about a half century of general disuse (with some exceptions, including for AIDS in Cuba), modern quarantine returned to use in 2003 with the Severe Acute Respiratory Syndrome or SARS-Coronavirus epidemic. Whether in Hong Kong or Canada, the pattern was similar. People exposed to infection and their direct contacts, including contacts in the community, would be quarantined for a period of time roughly the length of the incubation period. In one Canadian jurisdiction, the average length of actual quarantine was 8.3 days on orders for a ten-day quarantine ([Reynolds et al. 2008](#)). Taiwan initially used a fourteen-day quarantine for those who had been exposed to infection and then reduced that to ten days as clearer understanding of the disease's incubation period developed. In addition to those known to have been exposed, business travelers were also required to adhere to the quarantine ([CDC 2003](#)).

In planning for the use of mandatory collective quarantine, also known as “snow days,” in response to a potential influenza pandemic, the [Homeland Security Council \(2006, p. 106\)](#) has offered very clear guidelines:

“Snow day” restrictions—the recommendation or mandate by authorities that individuals and families limit social contacts by remaining within their households—should reduce community transmission rates and would afford protection to households where infection has not yet occurred. **For maximum effectiveness and to the extent possible, snow day restrictions should be maintained for at least two incubation periods**, as defined by epidemiological analysis of the circulating pandemic strain. In the absence of definitive countermeasures (i.e., an effective vaccine), snow day restrictions will serve to disrupt but not stop community transmission of influenza. The uses of snow day restrictions during a pandemic will vary. They might be employed to decompress health care facilities by temporarily reducing the rate of new infections within an affected community. The optimal timing for the implementation of snow day restrictions has not been determined but should be tractable to modeling. The economic impacts of snow day restrictions could be quite large and should be weighed against the likely health benefits.

Introduction

Current epidemiological understandings of COVID-19 estimate an average incubation period of four to six days, but some of the longer estimates have been closer to fourteen days ([Guan et al. 2020](#); more recently, scholars have estimated twelve days: see [Lauer et al. 2020](#)). Under the Homeland Security guidelines, this would suggest “snow day” orders with twenty-eight-day limits at the conservative outside. Yet on the whole, this is not what we have seen in practice.

Given the importance of clear quarantine timetables both throughout the history of quarantine and to ethical analysis of what constitutes just and appropriate use of quarantine as an emergency public health strategy, why are so many quarantine orders for the COVID-19 pandemic being issued with indefinite timetables? What would be appropriate timetables for these quarantines? How should those timetables be communicated to the public?

These questions are germane to the capacity of democratic citizens to protect their liberties and hold political leaders accountable, as the proposal for indefinite rule-by-decree in Hungary makes clear ([Walker 2020](#)). They are also germane to the efforts of political leaders and leaders of civil society organizations to plan. Municipal officials do not know how long they will need to provide food to school children who typically receive meals via school and now have their nutritional needs impacted by school closures. Education leaders do not know whether investment in distance-learning strategies is a short-term need to bridge a brief period or will be required in order to deliver learning opportunities in the fall. Businesses at all scales of the economy cannot plan, as the Wall Street Journal reports ([Mauer and Tokar 2020](#)). Social and economic costs accrue to the uncertainty in addition to accruing to the social distancing itself. Achieving a clear timetable for pandemic mitigation strategies and clear public communication around that timetable is an urgent public necessity.

Introduction

This paper seeks (1) to explain why public officials in the U.S. are having such difficulty addressing the question of a timetable for their imposition of collective quarantine orders; (2) to explain the two available viable policy approaches and timetables for bringing the COVID-19 pandemic under control (rather than, as on a third possible approach, simply allowing it to run its course to devastating effect); and (3) to argue for the superiority of one approach and timetable, namely, the one that we call “Mobilize and Transition”; this contrasts to a timetable, that we call “Freeze in Place” and also to the third approach, which we call “Surrender.” Its success assumes the required steps can be coordinated rapidly at a national level with effective leadership.

02 The Distinctive Difficulty of COVID-19 in the U.S.

Public health experts have been warning about the possibility of novel pandemics for years, and governments around the world and global organizations like the WHO have sought to improve pandemic preparedness. Nonetheless, individual countries and the globe as a whole have been caught by surprise by COVID-19 and the rapid spread of this highly infectious disease. This has been especially true in the U.S. where pandemic planning has primarily focused on strategizing for response to an influenza pandemic.

The Centers for Disease Control and Prevention (CDC) offers a “[Pandemic Preparedness Resources](#)” website. With the exception of resources developed relatively rapidly in the past month to respond to the COVID-19 threat, the resources on the site otherwise focus on addressing pandemic influenza. These include the HHS’s [Pandemic Influenza Plan—2017 Update](#) that builds on the *2005 Pandemic Influenza Plan*, the CDC article “[Community Mitigation Guidelines to Prevent Pandemic Influenza](#),” and two documents on nonpharmaceutical interventions (NPIs) that also focus on influenza. The Pandemic Influenza Plan includes a Pandemic Intervals Framework. It too focuses on thinking about an influenza pandemic. It characterizes influenza pandemics as having six intervals: (1) investigation of novel influenza viruses; (2) recognition of increased possibility of transmission; (3) initiation of a pandemic through easy transmission; (4) acceleration, which will be met by mitigations like social distancing as well as by the use of anti-virals and vaccines if available; (5) deceleration, a phase that includes “continued vaccination”; and (6) finally preparation for future waves, as the virus acquires a seasonality ([Holloway et al. 2014](#)).

In short, the federal government has recognized and is trying to rectify the near-exclusive focus on pandemic influenza in its pandemic preparedness materials, stretching from the 2005 Health and Human Services Plan to the 2017 Update to the *Pandemic Influenza Plan* and all the accompanying materials to those plans. In addition, the planning frameworks presume ready availability of a vaccine because the world has been prepared to achieve rapid distribution of influenza vaccines in real-time since the 2009 influenza A (H1N1) <https://ethics.harvard.edu/when-can-we-go-out>

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pandemic successfully executed a rapid vaccine deployment program. ([Yen et al.](#) 2015).

In other words, ever since the SARS-coronavirus epidemic in 2003, the federal government in the United States has focused on preparing for an influenza pandemic. This is despite the fact that over the last twenty years the world has seen multiple impactful and dangerous epidemics caused by viruses from different families: not only SARS, but also Middle Eastern Respiratory Syndrome (MERS) and Ebola. This is akin to having missed the emergence of Al Qaeda in advance of the September 11th terrorist attacks.

Influenza differs from COVID-19 to such a degree that it leaves existing planning frameworks in the U.S. badly out of alignment with current needs. To see that, one needs to know only the reproduction number (the average number of secondary cases each case generates) and case fatality rates for each (but see [Reed et al.](#) [2013] for a more sophisticated approach to modeling severity).

The reproduction number for seasonal flu is approximately 1.3 new people for every person with the flu. In previous influenza pandemics the numbers were as follows: 1.7 in 1957; 1.8 in 1968; and 1.5 in 2009 ([Biggerstaff et al.](#) 2014). Scholars estimate the infectivity rate of the Spanish flu at 1.8 (Id). The infectivity rate for COVID-19 appears to be 2.2 new people infected for every person carrying the virus ([Fauci et al.](#) 2020).

The fatality rate for influenza is approximately 0.1%; that is, there is one death for every one thousand cases. In contrast, for COVID-19, experts currently estimate the fatality rate at somewhere between 1 and 2%, or one death for every one hundred cases at the lower end of that range ([Bonsall, Parker, and Fraser 2020](#); [Ferguson et al. 2020](#); [Lipsitch 2020a](#); [Lipsitch et al. 2020](#)), though the experiences of Italy and Iran suggest that fatality rates may be considerably higher in case of healthcare system inundation.

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(On potential biases in how the case fatality rate is calculated in the middle of an epidemic, see [Lipsitch et al. 2015](#)).

In addition, we cannot expect much relief with warmer weather in an immunologically naïve population as evidenced by the fact that COVID-19 is spreading quickly in Australia, which is currently in its summer season.

Lastly, vaccines exist for various strains of influenza virus. No one has yet ever succeeded in creating a vaccine for coronavirus. In modeling for a pandemic influenza, the Department of Health and Human Services's [Pandemic Influenza Plan 2017 Update](#) describes a severe or very serious pandemic as one in which 30% of the population is infected. A core element of all the planning for that scenario is early production and distribution of a vaccine. In contrast, CDC modeling suggests that “without mitigation, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes novel coronavirus disease 2019 (COVID-19), could infect more than 60% of the US population” ([Gostin et al. 2020](#)). In our current situation, early production and distribution of a vaccine is beyond our reach.

In sum, the pandemic planning of the United States for the last fifteen years has focused on epidemics of quite different kinds than the one we now face. This comes out most clearly in the Department of Health and Human Services list of ten “Principles for Modern Quarantine” included in their 2005 [Pandemic Influenza Plan](#). The seventh principle reads as follows:

Principle 7. Modern quarantine is more likely to involve limited numbers of exposed persons in small area, than to involve large numbers of persons in whole neighborhoods or cities. The small areas may be thought of as “boxes” or “concentric circles” drawn around individual disease cases. Logistical issues will vary in each case, depending on the size and location of the boxes.

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This principle pertains only to the kinds of pandemics with the characteristics of pandemic influenza—moderate infectivity, relatively low case fatality rate, and existence of proximate vaccines. In other words, the planning apparatus developed by the U.S. government to guide action in a pandemic has been expressly designed to lead people away from thinking about the kinds of conditions that now pertain. No wonder our policy-makers are having such difficulty finding their bearings.

The contrast to countries that directly experienced the SARS outbreak in 2003 could not be stronger. Taiwan, for instance, has folded experience with SARS and Coronavirus pandemics into its planning, particularly over the course of the last five years (Lanier and Weyl 2020). The result of this is that Taiwan has equipped a vast proportion of public spaces (malls and offices) with thermal scanners that can help spot outbreaks and support contact tracing. Entrances to public transportation require people to scan a QR code with their phone; this provides data to data systems that have strong privacy protections but also permit contact tracing if and when it becomes necessary to alert all the passengers on a train car or bus that they have been exposed to a highly infectious disease. Taiwan has developed a routine culture of mask wearing and has prepared stockpiles of personal protective equipment that are suitable for pandemics driven by viruses with greater infectivity rates than those characterizing strains of influenza.⁵

⁵ The extent of mask use in the United States is much more limited, in part because of the meaning it conveys: those with masks are assumed to be either sick or fearful. This stigma inhibits precautionary mask use. Similar effects arose with hockey helmets fifty years ago: players were reluctant to use helmets despite the risk of serious head injury as long as use by other players remained rare, because they feared the message it would send about their courage (Schelling 1973). Mandating helmets solved the problem and left no room for stigma. Given current supply limitations, mandating mask use would be neither feasible nor desirable, but simultaneous to ramping up production, we would need to take steps to alter the meanings associated with the use of masks. Public service announcements that portray mask use as a signal of civic responsibility and concern for others could play an important role here, by inducing admiration rather than contempt for those taking such precautionary measures. But there must be substantial increases in mask production to meet the projected need.

The Distinctive Difficulty of COVID-19 in the U.S.

To address the question of the kind of timetable we need for responding to the current COVID-19 outbreak requires pivoting creatively from our influenza pandemic planning guides and building not only on those guides but also on the experience of countries like Taiwan, where pandemic preparedness has advanced beyond what has so far been achieved in the United States.

03 Three Paradigms for Timetables of Response

Currently, the policy literature has three paradigms or pathways for responding to a pandemic outbreak in the absence of pre-existing preparedness and in the absence of early vaccine production. One paradigm derives almost exclusively from public health expertise about non-pharmaceutical interventions. This paradigm maximally activates the health system and seeks to space out and delay infections to align with the existing capacity of our health infrastructure, including its currently available surge capacity. We call this paradigm the “Freeze in Place” policy approach. The second paradigm marries the same public health expertise about non-pharmaceutical interventions with expertise from economics and political science to propose a whole-society response to fighting coronavirus. This paradigm focuses on massively accelerating pandemic preparedness as a part of fighting an already ongoing pandemic, in order to ramp up health system capacity well beyond status quo levels, and to enable more time-limited use of collective quarantine. We call this paradigm the “Mobilize and Transition” policy. The third paradigm derives from utilitarian public policy-planning methodologies and focuses on asking how to balance the most visible up front trade-offs: lives lost vs costs to health and well-being that come from economic destabilization. While recognizing the force and importance of these questions about trade-offs, we nonetheless can find no way to avoid calling this approach “Surrender,” for reasons that we explain below.

In focusing on accelerating pandemic preparedness *during* a pandemic, Mobilize and Transition runs somewhat counter to the Pandemic Intervals Framework included in the *Pandemic Influenza Plan* (see above), which identifies preparedness as a sixth and final stage of the process undertaken after the pandemic ends in advance of the next one. The framework reflects the sound view that policies should be state-contingent, or adjusted to current and predicted epidemic trajectories and economic conditions. It is possible that epidemic trajectories will be characterized by multiple peaks and valleys, depending on seasonal factors and ebbs and flows in the intensity of social distancing. It is generally true that during valleys we must prepare for peaks, and during peaks we must attend to the most urgent

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short-term needs. And the policy paths we choose will themselves alter the timing and amplitude of the peaks and valleys.

In the case of COVID-19, however, our under-preparation for such a pandemic requires that we fold the activities of both interval four and of interval six into our current efforts. This principle further highlights the importance of the mobilization concept. We do not have the luxury of business as usual, not even the usual business of pandemic planning. Instead, we require an intensification in our investment of resources—financial, human, industrial, and organizational. In short, we require a full wartime-level mobilization.

Freeze in Place

The Freeze in Place paradigm has emerged from the effort to answer the question of how one avoids a pandemic that threatens to destroy national health systems (whether those are public or private-public hybrids) when the only tools at your disposal are (a) existing therapeutic health infrastructure; (b) limited testing; and (c) non-pharmaceutical interventions like social distancing and collective quarantine. The goal of modeling in response to this question has been to ascertain how to employ social distancing and collective quarantine to slow the pace of infections to a level that existing health systems can manage without collapse. The best example of this modeling is the influential paper by [Neil Ferguson et al. \(2020\)](#) from Imperial College. Ferguson and his colleagues recommend a five-month phase of aggressive social distancing in order to shrink the scale of the COVID-19 peak and delay it until the fall in the U.S. and the U.K. On their modeling the peak would still tax the health systems in those countries but not to the same degree as it would if the pace of infections continued on the trajectory from prior to the recent imposition of extensive mandatory and advisory collective quarantine.

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Freeze in Place

The recommendation for a five-month period of aggressive social distancing and/or collective quarantine is almost anomalous within the historical record. We are unaware of any known instance of emergency quarantine lasting for this length of time; the closest we have come was in the Ebola epidemic (2013–2016) when a variety of mitigation measures (restricting public gatherings, closing businesses, restricting travel, and closing schools) were employed in an assemblage for months on end, though a universal collective quarantine was not imposed. To remind ourselves, the Department of Homeland Security’s recommended timetable for a pandemic collective quarantine was that it be twice the length of the incubation period. In this case, the recommendation would be a quarantine of twenty-eight days. Of course, the Department of Homeland Security’s recommendation was crafted with the expectation of the existence of a vaccine. The Imperial College model results in a more aggressive recommendation precisely because it assumes the lack of a vaccine that can begin to assist control after a shorter twenty-eight-day quarantine period.

Nonetheless, the five-month proposal is extreme. To compare, in the U.K. during World War II, when children were evacuated to the countryside beginning in September 1939, the first phase of evacuation disintegrated after about four months, simply because people ceased to comply ([Clouting 2018](#)).

Recognizing the low probability of success for a five-month collective quarantine, other public health experts, for instance Ezekiel Emanuel, Susan Ellenberg, and Michael Levy, have proposed replacing the initial five-month quarantine with a sequence of shorter collective quarantines. They recommend two months for an initial collective quarantine and expect an ongoing rhythm of two months on lockdown or stay-at-home orders followed one month off, with this pattern continuing for two to four cycles ([Emanuel, Ellenberg, and Levy 2020](#); cf. [Frieden 2020](#)). Modeling for this strategy for the U.S. is available in a preprint publication from [Kissler et al. \(2020\)](#). The modeling suggests a timetable of mitigation that would carry through 2021 and possibly into 2022.

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Freeze in Place

The economic costs of these “shelter in place” policies are already clear: disruptions in global and local supply chains; massive job loss; market illiquidity; a corporate debt crisis; asset price declines (loss of home values and retirement security); personal bankruptcy; and financial system stress (as creditors face default from borrowers). In China and the Eurozone, purchasing managers’ index (PMI) survey numbers foretell a shock larger than the outset of the 2008/09 financial crisis and the start of the Great Recession. According to a March 20 [Barron’s report](#) (Scaggs 2020), economists at Goldman Sachs are projecting a 24% contraction of the economy for the second quarter. The major stock market indexes have lost 30% of their value over the past month, more than wiping out the gains made over the past three years. The Treasury Secretary has warned that inaction by Congress could result in an unemployment rate of 20%, which was last seen during the depths of the Great Depression.

To make a twelve-month period of repeated and aggressive “shelter in place” policies viable—with a view to securing the ongoing functionality of the health system—political leaders responsible for macroeconomic policy have developed a “freeze in place” policy for the economy to accompany the shelter in place policy for society. The freeze-in-place policy has been best articulated by economists Emanuel Saez and Gabriel Zucman on their websites and blogs and in opinion pieces ([Saez and Zucman 2020a](#); [Saez and Zucman 2020b](#)). They argue that the job of governments is to keep businesses alive during a period of hiatus in operations. Layoffs followed by subsequent attempts to rehire workers degrades the value of human skills and spreads the harms of unemployment throughout the economy and the society, but businesses don’t carry the cash reserves that would permit them to maintain a labor force in the absence of revenue. To solve this problem, Saez and Zucman recommend a variety of policies by which public investment can keep businesses afloat and workers on payroll until quarantines lift and it is possible for business activity to recommence. While workers are required to shelter in place, businesses will freeze in place, supported by public investment and prepared to restart immediately with little ramp-up when quarantines are lifted.

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Freeze in Place

Thus far Denmark has undertaken the most ambitious version of this Freeze in Place paradigm. Analysts have argued that it will cost it about 13% of its GDP this year. The idea is that when the pandemic is over, the economy will pick up from where it left off. As long as people adhere to the quarantine policies, the reasoning goes, the cost will be worth it, because the pandemic will have been converted into a manageable tragedy instead of being a driver of social collapse. Yet this account of costs is incomplete, as these figures have not integrated the losses deriving from lockdowns themselves. China locked down areas of the country that account for only about 20% of its GDP and saw a fall of 10% of GDP during the three months of lockdown. In the U.S., 80% of our workers are in urban areas and 80% are in the service sector. If this paradigm were applied to the U.S., anticipated real losses should be estimated at one-third to one-half of the economy for the 12 - 18 month duration of quarantine, or up to \$10 - 15 trillion.

In the Freeze in Place paradigm, people should plan for a twelve- to eighteen-month period of alternating phases of idling or working remotely at home and re-engaging outside the home.

Mobilize and Transition

The Mobilize and Transition paradigm has emerged from the view that the threat of collapse of health infrastructure should be treated as a major national and global security threat, jeopardizing core social pillars ranging from political institutions to schools to industries and workplaces and that, consequently, the appropriate policy response is one that marshals all the resources of a wartime condition, including a global alliance of universal solidarity, to fighting the virus Covid-19.

Bouskill and Smith offer a good framework for this view in their prescient 2019 article “Global Health and Security Threats and Opportunities.” Sketching a situation in which a novel pathogen spreads to pandemic

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proportions, overwhelming public health institutions, they recognize that “flows of people and goods” would be disrupted and that “political leaders would be faced with the job of containing both the pathogen and the mis-information and dis-information that would proliferate as mortality rates increased.” “The social, economic, and political consequences could be catastrophic,” they write, reminding us that pandemics outrank war as killers (20 million in World War I, one of the deadliest wars in human history, compared to 50 million from the Spanish influenza in 1918). While in their scenario (but not ours) the novel pathogen emerges from bioterrorism, the picture they paint of the impact of a pandemic is relevant to our current situation. So is their proposed framework of response.

They write that in the face of vulnerabilities of this kind to pandemics and their effects, “we propose the need to reimagine the concepts, language, and practice of global health security. This would involve policymakers and decisionmakers more explicitly recognizing health security as a pillar of *national security*—that is, the protection of citizens and social, economic, and food and health systems from man-made and natural threats.”

The Mobilize and Transition paradigm begins from the recognition that health security is a pillar of national, as well as regional and global, security, and that all the resources of national security can and should be brought to bear in achieving health security. Over the course of World War II, U.S. investment in the war ramped up to over 37% of GDP in 1945. Fighting a pandemic as if on a wartime footing involves an intensive investment of resources, potentially at an equivalent level to what is proposed in the Freeze in Place paradigm. In contrast to the Freeze in Place paradigm, however, the public expenditures would be simultaneously a response to the present pandemic and an investment in a future of pandemic preparedness. Even beyond this pandemic, we have good reason to expect we would have to address continued Covid-19 outbreaks in the three to five years beyond the current pandemic ([Kissler et al. 2020b](#)).

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Mobilize and Transition

What would it mean to Mobilize and Transition as a response to the Covid-19 pandemic instead of Freezing in Place? To Mobilize and Transition would involve massively accelerating the kind of pandemic preparedness that permits maximal mobility for as large a portion of the population as possible even *when the pandemic is ongoing*. Sketches of this policy paradigm have been offered to date by Paul Romer and Alan Garber in the *New York Times* ([Romer and Garber 2020](#)), by Tim Searchinger, Anthony LaMantia, and Gordon Douglas in the *Washington Post* ([Searchinger, LaMantia, and Douglas 2020](#)), and by Glen Weyl, Zoe Hitzig, and Rajiv Sethi in an accompanying white paper, “Mobilizing the Economy against Covid-19.”

Rather than expecting to use repeated applications of extreme social distancing to control Covid-19 over a twelve- to eighteen-month period, the goal would be instead to use one or at most two applications of such social distancing to change the trajectory of transmission for the disease while at the same time also investing aggressively in production of testing capacity, personal protective equipment, thermal scanners, and technological tools for infected case identification and contact tracing with the aim of achieving universal coverage of the population with these resources by the end of an initial quarantine period of three months, to end June 22, 2020. This end of quarantine date would permit businesses one week to ramp back up before the new fiscal year starts.

The most important elements of this aggressive investment would be (1) implementing the IT required for contact tracing; (2) increasing testing capacity to millions of tests administered per day; (3) acquiring proof that at least temporary immunity is possible and the ability to conduct reliable antibody screens; and (4) isolating vulnerable populations and replacing most care givers for vulnerable populations with immune individuals or individuals who maintain extreme isolation.

Throughout the periods of quarantine, individuals who can be tested serologically and shown to have immunity would be exempt from quarantine as soon as they have immunity and on the condition that they

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deploy in the Medical Reserve Corps, a group of volunteers overseen by the Department of Health and Human Services that supports pandemic activities “including surveillance, vaccination, mitigation measures, communications, and education.” An optimal response would also consider including low-risk incarcerated populations in this program, at wages no lower than minimum wage and ideally on par with other participants, both to quickly reduce the density of U.S. prisons and to address shortages in the workforce by giving incarcerated persons the option of assisting with pandemic response.

At the end of the initial quarantine period, schools could reopen with daily temperature checks for students and staff, as well as weekly testing, so that any new outbreaks could be rapidly identified and contained. Individuals not in high-risk categories of the population might begin moving freely again, but in a context where their movements on public transport are tracked with privacy-protective QR scanning and where public spaces are routinely monitored, as in Taiwan, with thermal scanners, and where the supply of protective masks is great enough to permit routine usage in public spaces. Individuals in high-risk categories would be advised to maintain lower levels of community exposure until such a point as the virus had receded to levels no more significant in their implications than those of the seasonal flu.

If disease transmission were to accelerate and escape the identification, contact tracing, and containment mechanisms described above, with projected levels of disease appearing to threaten the health system headed into the winter, then a second phase of aggressive social distancing would be undertaken for one to three months.

This policy approach **mobilizes** the resources of the national government to achieve within three months the sort of pandemic preparedness that it took Taiwan five years to develop, delivering more tools and flexibility to fighting the pandemic so that we need not rely solely on collective quarantine. The effort at pandemic preparedness would continue beyond the first three months until all targets had been achieved.

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Mobilize and Transition

This policy approach simultaneously **transitions** the infrastructure and labor force in the country, including repatriation of certain kinds of industrial production, and thereby measurably reduces the country's vulnerability to pandemics in the future. When routine business activity resumes, with the new fiscal year on July 1, it does so on a stronger footing where the economy as a whole has less vulnerability to the threat of pandemics. In this regard, the public expenditure returns value to firms and society, and does so the more to those who are most fully able to reorient their own missions, purposes, and functions in support of this mobilization. For individual citizens, the Mobilize and Transition paradigm provides them with a framework for focusing on how they can contribute to the effort to defeat the virus; individuals become active participants in the effort to achieve national security, not people passively sheltering in place.

In the Mobilize and Transition paradigm, people should plan first for an intense three-month period of participation in the innovation and experimentation of mobilization—whether in quarantine or on the front lines with routine use of personal protective equipment. This will be followed by a phased transition to the new normal along somewhat different timetables for different parts of the country or, when feasible and ethically and epidemiologically advisable, for different segments of the population (students, working adults, retirees, etc.).

The economic cost associated Mobilize and Transition is estimated to be between \$2 trillion and \$3 trillion by economists Glen Weyl and Rajiv Sethi (2020).

The proposed schedule would be to maintain extreme social distancing from now until June 22 (roughly three months) and thereafter transition to stratified lockdown or “snow days” in the style of Taiwan supported by widescale testing and IT-supported contact tracing, with most of the population able to return to full mobility. If rates of transmission begin to accelerate again, we first try to gradually

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ramp up measures, but if acceleration is projected to threaten the health system headed into the winter, then we do a second phase of aggressive social distancing for one to three months.

Surrender

In addition to the two paradigms or pathways of response that we lay out above, there is also a third paradigm. This paradigm begins from the recognition that the kinds of economic disruption entailed by either Freeze in Place or Mobilize and Transition impose costs on human health and well-being that are hard to calculate, and that ought to be weighed against the near-term costs of lives lost to the virus. This paradigm starts from the view that a long-term “national quarantine” or almost national quarantine, such as that required by Freeze, exacts unacceptable costs. On this third paradigm the best policy is simply to let the virus proceed unchecked. Over the span of 3-5 months, 2 million people would be dead in the U.S. and herd immunity would have begun to operate; yet the significant economic disruptions and potential harms of Freeze and Mobilize would be avoided.

Despite the initial intuitive sense that Surrender might be less “costly” (in a narrow economic sense) than Freeze in Place or Mobilize and Transition, economic calculations in fact show that Surrender is more costly than the other two options. The dollar value conventionally assigned to the loss of a statistical life by economists and government agencies alike is \$5-10 million. If we were to deploy this figure in a conventional cost-benefit framework, then in purely economic terms it would be “worth” around \$10- 20 trillion to save 2 million lives. In contrast, even in its worst case, Freeze would take 12-18 months, and would cost on an order of \$10-15 trillion. As indicated above, Mobilize is estimated at a cost of \$2-3 trillion. Even on narrowly utilitarian-economic grounds, then, Surrender is not the right way to go, and Mobilize has the best cost-benefit profile.

Three Paradigms for Timetables of Response

Surrender

Nonetheless, we do not base our argument about which pathway to choose solely on a utilitarian ground of the relative costs, as represented in dollar terms, of Freeze, Mobilize, and Surrender. While we recognize the power and force of reasoning about the different kinds of impacts to health, in the contrast between lives lost to the virus and lives negatively impacted by school closures, mental health harms from isolation, and disruption to the economy, we think the fundamental question is of a different kind. As we understand the situation, we are engaged in the enterprise of figuring out how to ensure that this society can in the first place deliver the very institutions whose job it is to heal, educate, and employ. This brings us to why we find we have no choice but to call the third policy approach “Surrender.”

As we see it, the appropriate frame for analyzing the Covid-19 situation draws from the broader literature in political philosophy on the purposes of government and political legitimacy. These purposes include ensuring basic rights to physical security, emergency healthcare, protection from predation and the safety of personal property, as well as the social capacity to feed ourselves and educate our children, or what the Declaration of Independence once called the “pursuit of happiness.” Any government that intentionally ceases efforts to protect such basic rights for any one of us has abandoned the basis of its legitimacy. As in the norms of just war theory, the goal is to secure our society as a whole, accepting only such loss of life as is necessary as a part of seeking to protect the underpinnings of well-being for all. A decision to allow 2 million fellow Americans to die without making an effort to fend off the threat is not only morally unconscionable but would also mean that our political institutions had failed at the fundamental purpose for which they were designed. In this sense, this paradigm would be a surrender. Alternatives are available and Surrender maps out an unacceptable path.

04 The Case for Mobilize and Transition

Once we see a pandemic pathogen as a national security threat, we recognize that we need forms of planning akin to those used in wartime to address it. The objective is not merely to secure health but instead to protect the economy, society, liberty, justice, and health against the COVID-19 threat simultaneously. Achieving this requires finding the policy pathway that can bring the health of the economy, supports for social cohesion and mental health, and respect for liberty and justice together in pursuit of health security, while building the infrastructure of a safer, more resilient, and more just future. When we compare the two policy paradigms on these dimensions, we find that Mobilize and Transition is superior. Further public health modelling is necessary to refine the timetables of the Mobilize and Transition approach. Nonetheless, based on currently available data, and assuming the required steps can be coordinated rapidly with effective national and state leadership, we hypothesize the following comparative outcomes for the two strategies.

The Case for Mobilize and Transition

	Freeze in Place	Mobilize and Transition
Economy—short term	<ul style="list-style-type: none"> • Degrades human skills and resources and business planning 	<ul style="list-style-type: none"> • Stimulates human and organizational resources by war-footing style investment and innovation
Economy—long term	<ul style="list-style-type: none"> • As vulnerable to pandemic post-crisis as pre-crisis 	<ul style="list-style-type: none"> • Vulnerability to pandemic reduced • Value of transition captured in growth
Society	<ul style="list-style-type: none"> • Mental health and physical health harms from isolation and reduced physical movement 	<ul style="list-style-type: none"> • Support for agency, fate-control, and sense of shared fate • Potential for positive impact on social cohesion
Liberty	<ul style="list-style-type: none"> • Increasing acceptance of governmental control of mobility over long duration erodes commitment to liberty protection 	<ul style="list-style-type: none"> • Strong emphasis on finding pathway to minimal quarantine supports long-term commitments to liberty • Differential access to rights restoration mitigated by requirements of service
Justice	<ul style="list-style-type: none"> • Pre-existing inequities in economy and society frozen into place and, in case of ongoing school closures, exacerbated 	<ul style="list-style-type: none"> • War-footing investment likely to generate more egalitarian economy, as in World War II context • Reduced time for school closure reduces equity harms transmitted through education
Health	<ul style="list-style-type: none"> • Health system stabilized and death with dignity possible. • Deaths from COVID-19 reduced dramatically from a “do-nothing” baseline. • Deaths and individual suffering increased dramatically from other economic and social causes 	<ul style="list-style-type: none"> • Health system stabilized and death with dignity possible. • Deaths from COVID-19 reduced dramatically from a “do-nothing” baseline. • Deaths and individual suffering from economic and social causes mitigated relative to “Freeze in Place” baseline • Health security increased

In contrast to Freeze in Place, which would cost one-third to one-half of the economy, Mobilize and Transition should cost about \$2-3 trillion. This is close to the level of the current stimulus package (\$2 trillion). Whether we would be able to pull this off is still an open question. Success depends on two variables in particular: levels of immunity achieved in the population and universal testing.

<https://ethics.harvard.edu/when-can-we-go-out>

05 Conclusion

Our attention must be trained resolutely on meeting the public health emergency with coordinated evidence-based public health mitigation strategies that enable us to secure our health infrastructure in service of fighting the pandemic while protecting civil liberties, without perpetrating injustice, without destroying the economy and material supports of society, and while preserving the durability and sustainability of the institutions necessary for constitutional democracy. The policy paradigm that we have called Mobilize and Transition would best position us to secure those objectives, *as long as leaders at all levels of government can come together rapidly and begin carrying out a society-wide coordinated response.*

When can we come out of our homes? While it is right to see the economic path proposed by the Freeze paradigm as highly problematic, we don't need then to pivot from Freeze to Surrender. If we the people wish to come out of quarantine sooner rather than later, into public spaces and institutions that are safer, more resilient and more just, then we need to raise our voices today and advocate to our federal and state governments on behalf of the Mobilize and Transition to Preparedness Framework.

We offer this paper as participants in an urgent moment of collective planning and invite others to join as we seek to communicate this analysis to decision-makers at all levels of our federal system.

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