



Twenty Things for Organizational Leaders to Know about Covid-19
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Herman B. “Dutch” Leonard, Arnold M. Howitt, and David W. Giles¹

Program on Crisis Leadership
John F. Kennedy School of Government
Harvard University

1. Covid-19 has “broken out” worldwide; it is no longer confined to a small number of locations. There never was any significant chance that it could be contained, but whatever opportunity there might have been to contain it has long vanished.
2. In the United States, Covid-19 is now undergoing community spread but is not yet widely prevalent. In most locations today, thorough testing of a random sample of people would show a low percentage who are carriers of the virus. But it appears to be rapidly spreading, so it is likely to present in many locations and at greater intensity soon.
3. In short, it will be **here** (wherever “here” is for you).
4. The initial inability (or unwillingness) in the U.S. to test widely around individual identified cases inevitably meant that some active cases would be missed, undermining early containment efforts and allowing weeks of undiagnosed (and, now, untrackable) spread and establishment of the virus in various communities.²

¹ The authors are, respectively, the two Faculty Co-Directors and the Associate Director of the Program on Crisis Leadership, Harvard Kennedy School of Government, Harvard University. The observations presented here are based on our best understanding of information available from public sources, our judgment about which of those reports can reasonably be relied upon, and our research into prior epidemics and other crisis events.

² The United States appeared initially to be attempting a strategy of containment – that is, of trying to identify every active case and prevent additional spread from it through isolation. Such a strategy needs to be accompanied by aggressive testing of those who have been in contact with each identified infected person. Instead, tests were only made available for contacts **who had developed symptoms**. This in turn implied that around any given identified case there could be (perhaps many) infected people who were not yet symptomatic (or who had not noticed their symptoms) but who might be able to spread the disease before developing obvious symptoms (and having a test made available to them).

5. The continuing inability (or unwillingness) to test more broadly means that tests are in effect only being used to **confirm** the presence of coronavirus in **individuals**, not to determine its prevalence in the **community**. Because of the narrow scope of current testing, the number of confirmed cases underestimates the true number of active cases – and until we test more broadly we cannot estimate how substantially it undercounts the true prevalence.
6. “Confirmed plus presumptive” cases may be a more realistic number, but still likely to be an underestimate of the prevalence of the virus in the population. Wherever there is a cluster of confirmed cases there are likely to be additional people who are infected but have mild symptoms and so have not presented themselves for testing. If the expansion of testing options eventually makes testing more broadly available, the number of confirmed cases may again become a useful index for tracking the overall progress of the epidemic.
7. Covid-19 appears to be about as contagious as seasonal flu. Problematically, it appears to be transmissible by people who are infected but who do not yet exhibit symptoms. Its lethality is difficult to assess accurately from current data,³ but it seems likely that Covid-19 is significantly more lethal than seasonal flu. This combination of *contagiousness, asymptomatic spread, and lethality* makes this both a dangerous and an inevitably widespread pandemic.
8. As of today, outside of areas where a cluster of cases has developed, the **short-run risk** to most Americans of contracting the virus in the near term **is low**, but it is rising in already-affected areas, and it will rise in other areas as the virus makes its way to new locations.
9. For most Americans, the **long-term risk** of eventual infection is **high**. Unless the virus becomes much less contagious as a result of summer weather (a pattern exhibited by some other respiratory illnesses), the potentially rapid spread of the virus means that it is possible that most Americans may be exposed to the virus within a matter of months. Even if transmission of the virus declines significantly in warmer months, it will likely

³ Some estimates suggest that Covid-19 may be as much as 20 times more lethal than most seasonal flu, while other estimates project less but still quite significant lethality (between 5 and 10 times more than seasonal flu, which has fatality rate of about 0.1% of those infected). There are two difficulties in estimating the lethality of an ongoing epidemic, and they cut in opposite directions, making it difficult to calculate either an upper or a lower bound. The measure of lethality that we would like to know is the “case specific death rate” (the ratio of the number of deaths that occur in a given population to the number of cases that occurred in that same population). On the one hand, while the number of people who have died from the disease may be counted reasonably accurately (though some misattribution of causes is possible even in developing this figure), the total number of cases is likely to be underestimated (because people with mild cases do not show up in the healthcare system, and because limited testing does not allow identification of some of the infected people). This will tend to bias the estimated case specific death rate *upward*. On the other hand, in a growing epidemic there will be many people who became infected recently and who have not had time to develop severe symptoms yet, so the total number of deaths that will eventually occur in a given group of infected people will exceed the number that have so far been observed. This will tend to bias the estimated death rate *downward*. There is no simple way to tell which of these offsetting biases is larger, and thus there is (and will continue to be) considerable uncertainty about the estimated death rate until post-epidemic studies, based on blood tests of a population sample to determine how many people were actually infected, establish the actual rate more firmly.

reappear in the fall. Long-term risk to Americans will then depend on the rate at which an effective therapy or vaccine can be developed.

10. For most Americans under age 60, the **consequences** of infection are likely to be modest even if they contract the virus. About 80% of those who contract Covid-19 experience few or moderate symptoms. This is not true for those over 60, who are at significantly greater risk of developing severe and possibly fatal symptoms. Thus, two important objectives of policy and action should be (1) trying to prevent, to the extent possible, the spread of infection to those who are likely to be most vulnerable while at the same time (2) slowing the (inevitable) spread among those for whom the associated illness is likely to be mild.
11. Current comparisons of Covid-19 to the overall number of deaths from the annual flu are highly misleading. Some commentators have observed that the annual flu kills between 25,000 and 70,000 people per year in the United States, while Covid-19 has infected only about 1,600 people and caused about 40 deaths. A moment's reflection will show this to be an unhelpful comparison. The annual flu numbers are calculated **after** the flu has made its way through all communities in the United States and the effects of the disease have closed out for the year. By contrast, Covid-19 has **just begun** to make its way through the United States, but seems likely **eventually** to affect **all** communities, as the annual flu does. Moreover, Covid-19 appears to be significantly more lethal than the annual flu – so the final death toll could be quite significantly higher than the seasonal flu. No comfort should be taken in the fact that Covid-19 **at the beginning of its run** has so far killed fewer people than the annual flu **at the end of its annual run**.
12. For a disease like Covid-19 (with asymptomatic spread and significant contagiousness), once even a modest number of cases have been identified in a given area, any further efforts at **containment** (the attempt to stop the spread through identification and isolation of known individual carriers of the disease) will quickly lose effectiveness, especially in the absence of widespread and aggressive testing in the surrounding community. The identified cases that can be tracked are likely to be accompanied by a number of **unidentified** cases that will cause continuing spread even as the known carriers are quarantined. Containment is thus no longer possible – but widespread testing will still be useful (1) to identify infected people, who should (a) be as effectively isolated from others as possible to reduce the rate of spread and (b) be monitored during the course of their disease so that they can receive additional care if they begin to develop severe symptoms; and (2) to allow accurate monitoring of the realities of the situation so that resources can be allocated most effectively.
13. **Thus, at this point in the epidemic, political, community, and organizational leaders should be focusing their efforts on doing everything reasonably possible to reduce the rate of transmission within communities. Most critically, they should try to prevent as much as possible the spread to those most likely to develop severe cases (the elderly**

and those with underlying health conditions (such as diabetes or coronary artery or heart disease) or compromised immune systems. Reducing the overall rate of spread of the disease may not greatly reduce the total number of Covid-19 cases over the course of the epidemic, but it will (a) give authorities more time to organize in advance of the wave arriving at their location; (b) spread out the time over which medical treatment and other resources can be delivered to help affected people; and (c) reduce the peak number of cases that have to be dealt with at any one time (thus reducing the likelihood of shortages of scarce critical resources like ventilators). All three of these shifts can have important impacts on reducing the overall burden of the disease in the community. And preventing the spread to the most vulnerable will directly save lives, as the virus has proved differentially lethal in these groups.

14. The most effective way to reduce the rate of spread in the population is to increase “social distance” – the physical gap between people – and enhance their hygiene practices, both of which increase the barriers that the virus must cross to infect them. Social distancing includes avoiding direct flesh contact like hugs and handshakes, avoiding congested areas like rush hour public transit or busy supermarkets, and shunning large crowds at sporting events, concerts, or rallies. Hygiene practices include effective handwashing or use of alcohol-based sanitizing solutions and avoiding touches to the eyes, nose, and mouth. Educating the public and advocating these practices should be a priority for political and community leaders as well as public health officials. Employers and other organizations should be encouraged, both for community protection and out of self-interest, to re-examine their workflow and norms to identify ways in which they create interactions that lack social distance. For example, regular large “town meetings” or other large gatherings of employees may not be advisable; in-person meetings may be carried out electronically instead; travel may be curtailed. In communities where there have not yet been clusters of cases, these actions – both individual and organizational – may not yet seem necessary (and, strictly speaking, may not yet be necessary). But now is better than later, for at least two reasons: (1) These actions take some thought and often require the breaking of old habits and reforming of new ones. This takes time, effort, and practice, so taking advantage of the available time should be a priority. (2) Taking these precautions a little before they are needed beats by a lot waiting until they are obviously necessary and then trying to catch up from behind.
15. We will soon be coping with a rising wave of Covid-19 cases in many communities. It may not be possible, nor is it desirable, to have all those who are infected treated either in hospitals or in outpatient clinics. Many (or most) of those who do become infected – and especially a significant majority of people under the age of 60 who are infected – will have mild cases and are likely to be able to convalesce at home. Some others with more significant cases may also be treatable at home, with some organized support from the health care system. Making arrangements to encourage people to convalesce at home and organizing ways to support them will reduce the overall burden on the clinical health care system (though it will increase the administrative load on the overall

health care and public health systems) – and will reserve medical resources that may be in short supply for those who need them most.

16. Beyond community-wide social distancing, the most effective way to reduce the rate at which the disease spreads is for people who have any reason (symptoms, travel history, contact with others who are infected, ...) to think that they might be infected to significantly reduce their contact with others to avoid transmission. People who have flu-like symptoms should notify health authorities, shelter at home, and avoid going to work, school, or other settings in which they would interact with others, and should encourage the use of precautions by those with whom they interact (family members, caregivers, volunteers who help with shopping, ...).
17. Political, community, and organizational leaders can encourage and support the key policy and management priorities for coping with this disease and its impacts, which include:
 - a. Continuing efforts to develop effective therapies, therapeutic pharmaceuticals, and a vaccine;
 - b. Ramping up production and increasing availability of tests to identify those infected. Widespread testing to develop as accurate knowledge as possible about the number and geographic distribution of active cases – generating accurate “situational awareness” about the epidemic – is important so that we can target resources and especially restrictive social distancing measures to the locations where they will have the greatest effect;
 - c. Ramping up production of personal protective equipment for health care workers and others who will be exposed to people who are infected, with special attention to making sure that solo practitioners and clinics have access to the levels of protection that are more commonly found in hospital settings;
 - d. Organizing and expanding civil society actions (like Visiting Nurses Associations, Meals on Wheels, churches, and others) to support people who are self-isolating and convalescing at home. (Here are some examples: [i] developing mechanisms to monitor symptoms so that people know that if they do develop respiratory distress that will be noticed and they will be cared for; [ii] organizing help with shopping so that they don’t have to venture out to grocery stores; [iii] expanding the capacity of Visiting Nurses Associations, Meals on Wheels organizations, and other related service-delivery mechanisms by integrating community volunteers; [iv] mobilizing community-based service institutions like religious organizations and community groups to provide assistance to neighbors.);
 - e. Planning by the National Guard, Coast Guard, and other branches of the Armed Services to provide manpower, transport, and logistical support to agencies and organizations carrying out critical work during the epidemic; and
 - f. Planning to address the needs of particularly vulnerable populations – residents of nursing homes and rehabilitation facilities, long-term-care facilities, homeless shelters, prisons, and other settings where potentially susceptible people live in

close quarters and cannot easily relocate to reduce their risk. For a variety of reasons – lack of resources, poor health insurance, lack of an organized political voice – several of these groups may not only be especially vulnerable but also at risk of not receiving information and education about how to avoid this disease and of not receiving adequate attention and resources if they do become ill.

18. An additional key policy priority is conducting research to develop more accurate and reliable estimates of the key parameters of this disease (all of which are currently uncertain). The critically important parameters include: (i) how contagious it is; (ii) how lethal it is; (iii) whether and to what extent and for what length of time having the disease confers immunity; (iv) whether people who do not yet have symptoms can indeed infect others, and, if so, for how long they are contagious before symptoms appear; and (v) how long people who have had symptoms remain contagious. Having more accurate estimates of these characteristics of the disease will permit much more accurate predictions of the course of the epidemic, will greatly facilitate planning and mobilization to cope with it, and will inform decisions about what degrees of barriers and social distancing are appropriate.
19. In the longer term, the probability of infection can likely be significantly reduced by the development of an effective vaccine, and the consequences of infection may also be mitigated by the development of effective anti-viral therapies. Neither of these is entirely assured, and it is unlikely that an effective vaccine can be developed, confirmed for safety, manufactured, and widely applied in less than a year (and it may well take longer). In the interim, we can hope for the discovery of therapies that will reduce the number of people who become severely ill and/or improve survival rates for those who do.
20. Political, community, and organizational leaders should communicate with their constituents regularly, transparently, accurately, and concisely. Irregular, incomplete, overly-lengthy, complicated, or unduly optimistic statements will undercut the constituents' confidence in and attention to what they are being told – at a time when their willingness and ability to understand what is needed from them and to make their best efforts to comply are assets of paramount importance in limiting the overall community burden of the epidemic.