by uninformed members of the public as the number of known cases begins to rise. Panic responses are unnecessary and merely further exacerbate an already difficult situation.

- Look to the future. The hope is that these interventions will slow the rate of infection and end the acceleration phase of the pandemic by May-June. Once the rate of infection slows and begins to level, expect a phased relaxation of public health interventions and return to normalcy. We do not expect a long-term shortage of critical goods such as food and water; however, economic disruptions may be moderate to severe.

- Be prepared. CV-19 is more contagious than initially anticipated, spreading through both aerosol and surface contact. Eventual, though gradual, widespread infection may be likely. Use of masks is appropriate for those who are ill, and may be appropriate for individuals moving through public locations. Households can use commercially available means (e.g. household cleaners) to effectively disinfect surfaces and other items.

- Be responsible. Individuals may be contagious even while showing no symptoms. To control fever, use of acetaminophen (e.g. Tylenol) or Ibuprofen (e.g. Motrin) may be indicated; check with your primary care provider for specific, tailored guidance. If you are ill, stay home and take appropriate precaution measures; a self-quarantine of 7-14 days is appropriate.

Introduction

Unless you've been living within a simulated reality for the past several weeks at least, you're familiar with the situation surrounding the spread of Coronavirus (aka COVID-19, or CV-19) from China throughout much of the rest of the world. Based on information sourced from the CDC, WHO, and discussions with microbiologists at TMG Biosciences (a firm specializing in biosurveillance, which essentially means they work to detect and trace the spread of biological threats), this article will lay out what you may expect in the next 4-6, weeks, through to June/July/August.

First, there is some groundwork that must be laid. Information is power, and in a time where many feel powerless, understanding the origin of CV-19, how it has spread, and where things may go can be an opportunity to reclaim some sense of control and normality over what appears to be an extremely hectic situation. So let's work through a brief history of CV-19 and a short summary of what a pandemic "is" before we move to "where may things go from here?"

CV-19: A (Very) Brief History

On December 31 2019, CV-19 was first reported to the WHO as a "pneumonia of unknown cause" originating from China. The disease quickly spread throughout the region, and through the first half of January 2020 cases were also reported in Japan, the Republic of Korea, and Thailand. Initial research traced the source of the disease to Huanan seafood market, a live animal market in Wuhan, China. Studies since then have confirmed the zoonotic nature of the disease, with analysis indicating its likely origin in bats - who spread fecal and other biologic contaminants as they move - to humans, either by way of an intermediary animal or through direct consumption.

Zoonotic transmission: *spread of infectious diseases from non-human animals to humans*

Initial rumors spread of CV-19 being some type of biological weapon either unleashed mistakenly or deliberately by the Chinese government, especially given the presence of a state-run Institute of Virology in Wuhan. These were, however, quickly debunked by experts who pointed out that CV-19 has no indication of being engineered, nor does its application fit the profile of a biological weapon - the contagiousness, effect, and duration of which would be extremely precise.

By the end of January, the number of confirmed cases had risen from around 300 to near 10,000, with an additional 15,000+ suspected cases. Though the overwhelming number of confirmed cases were centralized in China, the initial outbreak was not effectively contained and the disease spread throughout Asia and to the continents of Europe and N. America. This is due in part to Wuhan's status as a major industrial, commercial, and transportation hub within China, with large rail, air, and road links to the rest of the country facilitating domestic and international travel.

Outbreak: Sudden appearance of a disease in a specific geographic area (e.g. neighborhood) or population (e.g. teens)

On January 30, CV-19 was declared a public health emergency of international concern, prompting greater international attention in order to combat the spread of the disease and contain it to China. Officials from the U.S. administration and the CDC had been monitoring the situation in China for weeks by this time, implementing mandatory screening at airports of major risk earlier that month. However, as no one yet knew the severity of the situation, on January 31 the U.S. administration declared a public health emergency in order to begin preparing for the spread of CV-19 to within its borders.

Public health emergency of international concern: a serious, sudden, or unexpected event carrying implications for health beyond a State's national border that may require immediate international action

By the end of February, the disease had continued to rapidly spread in China, making its way to every continent but Antarctica, though in yet limited numbers – roughly 6,000 cases outside China, as opposed to 80,000 within. Despite these limited known number of cases, scientists were taking note of the exponential growth rate of CV-19, as it was clear the disease had the capability to cause epidemics, and knew they had to wait until rigorous and widely available testing protocol were available to determine the "real" number of cases versus the "known" number of cases.

Epidemic: Outbreaks of disease within regions or specific population groups over periods of time

As the virus continued to spread and testing became more prevalent, the expected result of a rise in known cases in areas the disease had hitherto been seen only in small numbers took shape. In the weeks between March 1 and March 16, the number of known cases outside China grew from 7,100+ to 86,000+. Nations such as Italy, Spain, the United Kingdom, Republic of Korea, and the U.S. began to take drastic action in light of how quickly the virus spread. Many nations have imposed restrictions on movement, effectively implementing quarantines closing commercial businesses, public events, and travel. While no longer effective at containing the spread of the virus to within mainland China, such measures are designed to mitigate the spread of infection within new areas of epidemic and prevent regional healthcare centers from being overwhelmed. By doing so, local governments hope to manage the spread of the virus and limit the severity of its impact so that the number of severely ill people are manageable.

Following a declaration of national emergency on 13 March by President Trump, many States have issued guidance concerning public gatherings and recommended procedures involving public control measures. This did not appear to ease tensions, however, as volatile fluctuations in the stock market and panic buying has continued since at least February.

CV-19: Contagiousness and Severity

Initial figures estimated the basic reproduction number (known as R_0 [pronounced "R-nought"]) to be roughly 2.25 to 3.5 (with some studies giving a range of between 2 and 4). An R_0 of "1" means one infected person can be expected to transmit the disease to one other person, under conditions where all people are susceptible to the disease. When R_0 is greater than "1" the outbreak of a disease can be difficult to control; when R_0 is less than "1" the outbreak of a disease is being effectively controlled. For comparison, the R_0 of the more common seasonal strains of influenza is about 1.3.

Basic reproduction number: Expected direct rate of transmission from one individual to others within a population, i.e. it's contagiousness

As mentioned, the R_0 assumes an important condition: that all members of a population are susceptible to the disease. As individuals contract the disease and develop natural immunity, and as public health measures such as vaccinations are introduced to a population, the effective reproduction number, known simply as R, begins to change. Unfortunately, with CV-19 there is as yet no widespread natural immunity (the disease simply hasn't been around long enough to have the widespread effect necessary for the population at-large to develop herd immunity) that will reduce the rate of infection.

Herd immunity: A reduction in the spread of disease due to a high enough number of individuals within a population being immune to a disease, such that contact between those left unimmune and those infected is not likely

As to the means of transmission, early reports indicated CV-19 did not easily spread through the air, but only via respiratory (primarily saliva) droplets from sneezing, coughing, drooling, et cetera. New information contradicting this narrative has indicated that the virus remains viable (able to infect someone) in aerosols for up to three hours, and on certain surfaces up to three days. That said, CDC and others have maintained that the primary way the disease spreads is not via aerosol, indicating that the conditions for spread via the air may be limited to ideal conditions (such as those that may have been present in the laboratory). In normal conditions (e.g. outside a laboratory), the virus likely only remains viable for up to 9 hours. Among individuals who have shared close contact, the rate of transmission appears to be only 1 to 5%.

As healthcare providers are able to vaccinate large portions of the population against the seasonal flu, R for the flu begins to fall. With this reduced rate of infection, CDC estimates for flu illnesses in the U.S. over the current season (extending from March 2020 back to October 2019) are at least 36,000,000 with 370,000 hospitalizations and 22,000 deaths. In the U.S., current CV-19 numbers are about 33,200 confirmed cases with 417 confirmed deaths. By the numbers, CV-19 does not yet approach the severity of the current flu season, but these numbers don't tell the whole story.

We're still in the opening stage of testing for CV-19, and given the greater R_0, we know CV-19 appears far more contagious than seasonal flu. As testing protocol in the U.S. ramps up, the number of

confirmed cases has been (and can be expected to continue) ramping up. As we gather additional data about the rate of severe illness for CV-19, we can draw more conclusions.

The flu reduces to a case-fatality rate (CFR) of about .06%. Strictly by currently known numbers globally, CV-19 has a confirmed number of around 336,000 cases with 14,600 deaths, or a CFR of around 4.3%. However, this number appears to be skewed by an unknown number of mild illnesses and a larger number of fatalities in areas overwhelmed with the virus, where healthcare facilities cannot properly manage the number of cases (such as in Wuhan). A new range for CFR has been estimated at .25% to 3%, with higher values more appropriate in areas with less access to advanced healthcare resources. In the U.S., estimates have been made for an expectant CFR of between .05% and 1%, though it probably falls closer to the 1% range (currently, standing at 1.25%).

Case-fatality rate: Proportion of persons with a condition who die from the condition

But, again, the numbers don't tell the full story. CV-19's mortality rate varies drastically by location, with different numbers being reported from within different regions, and by patient type, with an extremely disproportionate number of fatalities coming from a single demographic – those of the elderly with pre-existing complicating conditions, such as compromised immune systems and other diseases. Whereas the flu's CFR of .06% tracks across the entire demographic of 18-64, by total number of deaths the figures skew widely toward those 65 years of age and older, representing 75% of all total deaths from the flu. This does not appear to be the case for CV-19, whose CFR does not track across similar lines, with the mean (or average) rate only beginning to track across a demographic aged 60 years and older - though it does have a similar overwhelming number for total deaths in the bracket aged 80 and above.

Adding an additional layer knowledge concerning severity, the hospitalization rate for the flu appears to be around 1.4%. This is contrasted with a hospitalization rate for CV-19 that may be between 14-19%. So not only does CV-19 appear more infectious than the flu, it appears more severe. While possible that there may be two different strains of CV-19, with one study terming the two types S, which is more mild and responsible for about 30% of cases, and L, which is more severe and responsible for about 70% of cases, additional study is needed into the aggressiveness and selection of the two strains. New information published by the CDC reinforces the potential severity of the illness for individuals under the age of 65. While no deaths have been reported due to CV-19 for individuals under the age of 19, around 55% of hospitalizations and 48% of intensive care unit (ICU) admissions are for individuals aged 20-64. Within the 20-44 year demographic, 20% of patients were hospitalized and 12% were admitted to the ICU. Clearly, CV-19 is an issue with severe risks to the population within this demographic, who may have felt themselves at low risk once contracting the disease.

Further complicating matters is the incubation period and asymptomatic nature of individuals who contract the virus, especially in the demographic ranges less at risk of severe complications. While it is known that individuals can carry the virus (and spread it to others) without showing any symptoms, the current lack of testing kits and potential rate of false-positives makes getting an accurate figure for infection extremely difficult. As it is, individuals may carry the virus for an incubation period of between 2 and 14 days, meaning they won't show symptoms of being infected for up to 2 and 14 days after being infected (and spreading the virus). New studies have started to narrow this period, with the average period to be around 5.1 days, with around 98% of patients showing symptoms within 12 days, and 99%+ showing symptoms within 14 days.

Incubation period: *Time between exposure to an infectious disease and onset of symptoms from an infectious disease, during which time the disease may be carried*

We're also beginning to learn how environment impacts the disease. While it is still unknown what sum impact a change in seasons (from Winter to Spring to Summer) will have, scientists are now examining how climate may impact the spread as a means of better focusing public health interventions. An interesting report from the University of Maryland modeled the major outbreaks favoring climates between 41° and 51° Fahrenheit with a relative humidity of 44-84%, which is similar to laboratory conditions favorable to CV-19 survival. Based on these estimates, it is possible that the virus may find favorable conditions across much of the U.S. in the next 4-6 weeks, before the effects of Spring/Summer mean warmer temperatures place much of the country (with the potential exception of the northeast) out of the greatest known climate risk zone.

In fact, while acknowledging the risk will increase the CDC still classifies the overall risk of infection for individuals in the U.S. as low. For the vast majority of individuals who will contract CV-19, symptoms will be mild. The most common symptoms are covered in more detail below, but the great majority of individuals who become infected – right now the number has been shown to be about 80% – will not require special treatment as a result. If you do get sick and aren't part of a high-risk category, simply staying home and recovering is the best course of treatment.

In short, whereas CV-19 appears to be both more contagious and severe than what is being seen as a benchmark in the flu, its rate of severe illness and death appears less serious for those outside a very specific demographic – those around age 70 and above, especially with pre-existing medical conditions such as heart disease, diabetes, and cancer. Does this mean those below age 70 shouldn't worry? No. The health risks are still very real, if for no other reason than a healthcare system overwhelmed by members of at-risk populations stricken with CV-19 make it more difficult for all other members of the population suffering from more routine medical emergencies (car collisions will still happen, people will still break bones, suffer puncture wounds, and all manner of other mishaps) to be seen and treated effectively. The level of concern should be appropriate to the severity and scope of the illness, which requires a greater understanding of second and third order effects from the pandemic than simply asking oneself "Well, am I at risk?" and relying on that as the singular measure of precaution.

Pandemics: The (Very) Basics

On 11 March 2020, CV19 was identified as a pandemic by the WHO. Being designated a pandemic does not mean that a disease is necessarily extremely deadly, or extremely dangerous: it merely reflects the scope of spread for a disease and the resources required to combat it. A pandemic is distinguished from an epidemic in terms of scale: where an epidemic is regional, a pandemic has spread over multiple geographically and populationally distinct regions.

Pandemic: *An epidemic occurring over a very wide area, but not necessarily globally*

For planning purposes, the CDC has categorized pandemics as occurring in six interval phases: investigation, recognition, initiation, acceleration, deceleration, and preparation. Currently, CV-19 is beyond the investigation, recognition, and initiation phases, and sits in the front end of the acceleration phase, as indicated by the exponentially increasing rate of infection within the U.S.

In the acceleration phase, known cases of a disease continue to increase, while public health interventions are made to reduce the infection rate of the disease. As stated, there is no vaccine for CV-19. While there are several in development, and clinical trials have already begun, one is unlikely to arrive by the end of the year if not through early next year. In positive news, studies from China, South Korea, and France are indicating that there is a potential pathway for treatment using readily available drugs (remdesivir, used to control Ebola, chloroquine/hydroxychloroquine sulfate, used to control malaria, and azithromycin, used to control bacterial infections). Initial reports are very good, with a significant reduction in viral activity occurring within one week of treatment. The issue with current studies involving these interventions are the relatively small sample sizes, which has prompted additional trials. Expect more news to come out within the next few weeks involving these drugs – especially chloroquine and azithromycin, as both are affordable, readily available, and have extensive use in human subjects (with at least one pharmaceutical company already donating millions of tablets to hospitals nationwide) – as potential curative measures.

As there is no vaccine and clinical trials of other potentially effective medications are still ongoing, the U.S. is relying on other measures, such as social distancing, isolation of ill individuals, and voluntary quarantines to slow the spread of the virus. Whereas in China and other countries these measures can be enforced more rapidly and readily by strong central governments, the U.S. environment for these actions isn't favorable – with a core value of individual liberty shared across the political spectrum, the kinds of lockdown seen overseas are unlikely to be as effective or prove popular among politicians during an election cycle. While it remains to be seen what level of civic duty the general population feels in regards to voluntarily obeying these directives, the good news is that such directives can be extremely effective at limiting the spread of pandemic infections and easing the rate of accelerated infection from one which is unmanageable to one which is manageable. As can be seen in China, through the aggressive implementation of these measures the rate of infection has slowed dramatically: in the same period the number of known infections outside China increased by 79,000, there were only 1,200 new cases within China. While uncertainty

What's important to note is that the effectiveness of these measures with illnesses similar to CV-19 relies upon the compliance by populations who are not at most risk of the disease (i.e. young people of school age, 6-22) with measures designed to inhibit its spread. So, while the populations being asked to bear the burden of quarantine may appear (and actually be) well, it is critical that they abide by the request of healthcare professionals – such as those at the CDC – for the pandemic to move out of the acceleration phase and into the deceleration phase, preventing the healthcare system being overwhelmed and speeding a return to normalcy across all aspects of life.

CV-19: Near-Term Forecast (4-8 weeks)

The current extent of known infection has breached major international and domestic travel hubs and CV-19 is beyond the point of containment. It must now be detected and managed within the U.S. and its outlying territories. The FDA is currently working with manufacturers to increase the number of available test kits through emergency use authorizations.

As the testing kits become more widely available and public awareness of symptomology spreads, anticipate the number of confirmed cases in the U.S. to skyrocket. However, the growth in these figures may not actually represent the current rate of infection or the effectiveness of currently implemented measures intended to mitigate the spread of infection: it will simply be the number of

cases confirmed with testing "catching up" to the number of still-unknown of cases in existence right now. Some experts feel the number of confirmed cases may climb from the current number of about 33,200 to 150,000+ and 250,000+ in the next 4-6 weeks, even as these initiatives take hold. Expect media outlets dependent upon coverage ratings to produce graphs depicting the epidemic curve reflecting this increase in known cases, despite not necessarily reflecting an increase in actual cases, due to the audience such coverage can be expected to draw.

Epidemic curve: *A representation of the course of a disease outbreak by plotting the number of cases by time of onset, e.g. a chart with X and Y axes depicting number of confirmed cases and date confirmed*

The reasons for this disparity have already been discussed: a delay in beginning testing for confirmed cases and a small number of testing kits available to confirm cases due to the disease only recently being declared a public health crisis, coupled with the extremely contagious nature of the disease, its lengthy incubation period, and the sometimes-asymptomatic nature of infection.

Despite the hoped-for reality of public health interventions actually helping to slow the spread of infection, the appearance of CV-19 infection "getting worse" through increased testing will likely lead to increased panic buying of goods, stress on the healthcare system, and additional restrictions on travel, commercial activity, and public gatherings. Expect closure of non-essential commercial activities, a restriction of hours for essential commercial activities (e.g. grocery stores) and public health facilities, and movement to be restricted in severely affected areas to "essential activity only," meaning only short trips to necessary locations.

Deployment of the National Guard is a potential reality (and has in fact occurred in some of the most heavily effected States, such as New York, California, Wisconsin, and others) in assisting state agencies in preparing for and managing the spread of CV-19. The primary mission of the National Guard in these circumstances would be to provide additional manpower to health agencies with logistics issues, essentially supplying an additional means to distribute food, deliver medicine and medical training, clean effected areas, and even establish field hospitals. Members of the National Guard may, under Title 32 authorities – that is, while under the command of the State Governor and not the Federal Government – support law enforcement operations as directed by the Governor and in accordance with State Constitutions. This means they could hypothetically, within lawful limits, augment State law enforcement agencies if ordered by the Governor and authorized by the Constitution of the State to which they belong. Should the National Guard be activated for federal service (i.e. activated by the President and report to a federal, not State, chain of command), these authorities are removed, as they would operate under Title 10 authorities and would be restricted from primary law enforcement duties under the Posse Comitatus Act. There are advantages and disadvantages to activating the National Guard, to include cost, the loss of activated individuals in the workforce (to include members in medical specialties who are already healthcare providers in the civilian sector), and lack of specialty training or equipment for most members of the Guard, which make their use a decision that must be carefully weighed by State Governors. We do not anticipate the use of the National Guard to impose any type of widespread martial law or national lockdown, and discourage individuals from stoking rumors that will merely serve to worsen panic responses.

We do not recommend panicking over the spread of the CV-19, especially in regards to the anticipated increase in the number of confirmed cases in the coming 4-6 weeks. Specifically, stockpiling goods for several months – especially the bizarre trend of bulk buying goods such as toilet paper,

bottled water, and hand sanitizer, when none of these are scarce resources (toilet paper especially, which is manufactured cheaply here in the U.S.) and there are plentiful alternatives – when production of goods is not threatened and there exists no immediate threat to the supply chains producing common grocery store items. Scaled purchasing of goods such that an individual household has an adequate supply of food and water in accordance with emergency preparedness guidelines will be adequate.

Simply being prepared for the news over the next 4-6 weeks, understanding the disease and underlying causes of the rapid increase in known cases, and knowing you are contributing to your own safety and wellbeing as well as that of others through responsible action will contribute to a return to normalcy that everyone desires.

CV-19: Mid-Term Forecast (8-12 weeks)

Following the initial increase in confirmed cases due to an accelerated rate of testing, which will occur simultaneously with implementation of mitigation strategies to inhibit the rapid spread of the disease, the hope is for the rate of testing to "catch up" to the actual number of infected while the rate of infection itself levels off due to the effectiveness of public health interventions. When this occurs, it will mark the end of the acceleration phase and the beginning of the deceleration phase. This will be most readily apparent if the epidemic curve begins to level out in late May and early June (or prior). Doing so will anticipate an increase of confidence in public health measures and the health system to effectively manage the spread of the disease, and a gradual relaxation of restrictions on travel and other commercial activity which heralds a return to relative normalcy.

If the epidemic curve continues to accelerate or remains steady into late May and early June, anticipate the acceleration phase to continue and further restrictions and disruptions to travel, commerce, etc., to remain in place until July or August. This represents a kind of worst-case scenario where the level of economic stress – and not the health risks presented by the disease itself – continue to build; this situation which becomes very high risk especially for lower- and lower-middle class Americans who rely on a steady source of income to maintain fiscal solvency. From that point, severe economic distress may result in increased intervention by the government, or a relaxation of restrictions on commercial gatherings and return of these individuals *en masse* to their workplaces, where the disease may run its course by infecting the majority of the population more rapidly than the health system can manage new severe cases.

The worst-case scenario may see a disproportionate number of those at risk for severe complications from CV-19 – as previously discussed, the elderly and those with compromised immune systems or comorbid diseases – requiring hospitalization and dying from the disease, though at this point it is too early to provide an estimate on an anticipated overall number of casualties.

CV-19: Long-Term Forecast (13+ weeks)

It is too soon to make accurate predictions extending this far out, but we do anticipate widespread endemic infection. Whereas the flu has a predictable pattern, typically tapering in the hotter, Summer months, it is unknown what pattern CV-19 will take. Given its contagiousness and the lack of an effective vaccination, in the long-term infection may encompass most of the population. The important indicators will be whether the rate of infection through the acceleration phase in the near- to

mid-term overwhelms the public health system and causes more fatalities than are necessary, or whether over the long-term the rate of infection is such that the pandemic is more effectively managed. This has been what many health officials are emphasizing in use of the phrase "flattening the curve."

Endemic: *Continual, low-level presence of a disease within a community*

It is difficult to forecast the total economic impact CV-19 will have; however, initial projections are grim. The nation's Gross Domestic Product (GDP), or total value of all goods and services being produced in the economy for a set period of time, is projected to contract at a stunning rate of -24% in the second quarter of calendar year 2020, with a moderate recovery in the following quarters failing to make up the difference, and an overall contraction slightly worse than that seen during the 2008-2009 recession. Unemployment, a figure currently under 4%, is expected to rise to 9%, or near the level seen at the height of the 2008-2009 recession. Given these numbers, it is difficult to imagine economic activity returning to pre-2020 levels for at least the next 5-6 years (by some metrics, recovery from the 2008-2009 recession took at least this long to occur). These estimates track with what we'd estimated previously (included one paragraph below).

The U.S. government has promised aid to those effected by the virus; so far, the federal government has moved the deadline for tax filings from April 15 to July 15, offered relief from student loan payments, and offered disaster assistance loans for small businesses. There is also discussion of aid to American workers and small businesses in the form of direct payments as a "bridge" measure while shelter-in-place orders are issued; however, no legislation has yet been passed.

We do not anticipate long-term critical shortages of essential items such as food and water. However, on a macro-scale, disruptions to the supply chains of certain goods and commodities (especially those manufactured overseas) could be moderate to severe, and may cause a ripple effect as where production halts, furloughs are implemented. In addition, the disruption to local economies will be moderate to severe as labor and consumer will be unable to engage in meaningful economic activity. Certain industries and markets such as hospitality, travel, and housing may experience severe disruption, as movement slows due to quarantine and supply is driven upward due to foreclosure or vacancy. Businesses that rely on purely discretionary spending or the sale of luxury goods will experience difficulty as a result of depressed earnings leading to a reduction in spending.

What You Can Do

First, maintain a sense of calm and rationality concerning what you'll hear on the news in the coming weeks. Understand that there are excellent primary resources available to you in both the CDC and WHO's websites, with pages dedicated to CV-19. As well, know that your state and local governments will be monitoring the outbreak, providing you with up-to-date information on confirmed cases in your area.

Currently, the best means of preventing infection is to practice basic hygienic practices and social distancing. The disease is spread primarily through respiratory droplets (i.e. bodily fluids such as saliva) during person-to-person or person-to-surface contact. Simply washing your hands often using soap and water (or a hand sanitizer if these aren't available) while avoiding touching your nose, eyes, and mouth with unwashed hands will go a long way in lowering your risk of illness. Where there are confirmed cases of a disease, especially in large numbers (currently, over half of the confirmed cases in

the U.S. are represented in the states of Washington, New York, and California), consider maintaining a buffer of about 6 feet between you and individuals around you – such as when waiting in line at the coffee shop or grocer – as a good way of preventing the spread of disease.

If you develop symptoms or have come into contact with someone who has developed symptoms, simply stay home. The majority of cases will resolve without any need for specialized treatment. Cover your coughs and sneezes, wash your hands often, throw used tissues in the trash, and do not share dishes, glasses, or other items. Try and stay in a different room of your home, away from those who are not infected. Have food items delivered to you and left at the door, rather than traveling to get them. Whereas certain studies have indicated the use of ibuprofen (brand names such as Advil and Motrin) should not be used to control a fever, the WHO and European Medicines Agency have both contradicted this statement, advising patients to receive guidance from their primary care providers and pending additional study on the topic, understand the health benefits and risks of either medication.

It appears the virus spreads two primary ways: aerosol and surface contact. If you are sick and have access to a facemask, wear it. If you are not sick and go to public locations, facemasks can be an important tool to further mitigate risk of infection. Surgical masks and respirators with an "N" certification, designating the amount particulate matter they are able to filter, will likely be in short supply and should be prioritized for healthcare workers. While the "N" masks represent an ideal, they are not strictly necessary, and use of makeshift or homemade masks may be considered for use in emergency situations. These can be made from simple cloth, and should cover the nose and mouth as a normal surgical mask would. Where possible, eye protection (e.g. glasses) should be worn with a mask.

Disinfect surfaces you come into frequent contact with. Using hand sanitizer to disinfect surfaces is not necessary, and in some cases not even preferable, as there are other effective disinfectants:

- 70% isopropyl alcohol solutions
- Hydrogen peroxide solutions (diluted at concentrations lower than 3%; if using a 3% solution, dilute at a ratio of roughly 1:25)
- Bleach solutions (again, diluted to about 1/3 cup per gallon of water)
- Other household cleaners and EPA-registered disinfectants appropriate for the surfaces they're used on

If you have to seek medical care, call your doctor's office, urgent care center, or hospital prior to traveling, as this will allow them to prepare for your arrival and protect themselves and other patients.

Once symptoms have improved – that is, 3 full days without a fever without the use of fever medication, other symptoms such as cough or shortness of breath have improved, and it's been at least 7 days since you first showed symptoms, you can stop home isolation. If you will be tested following the illness, follow the directions of your doctor.

Regarding emergency preparedness and stockpiling food, water, and other necessary supplies, the CDC recommends you have at least a 3-day supply of food and water on-hand. If you have more, great! But avoid panic purchases of large amounts of food or other supplies. A 3-day supply means roughly 1 gallon of clean water per person, per day, and 2000 calories of non-perishable food per person, per day. You'll also want to maintain a supply of prescription medication and other pharmaceuticals considered necessary to maintain quality of life.

Have More Questions?

Due to the concerns regarding travel and the spread of disease, our team is currently conducting remote assessments for individuals, families, and businesses with security or intelligence concerns. If you're interested in speaking with a member of our team about concerns related to your emergency preparedness or planning, you can reach us at info@sheepdogresponse.com.

Thanks for reading. Stay safe, keep training, and we hope to speak with you soon!

Prior Updates

- Studies indicate potential for an effective pharmaceutical course of treatment with a drug that is affordable, available, and has already seen extensive use in humans for immediate widespread use and production (3/19)

- Information on the use of ibuprofen suggests potential risks of it use treating fevers may be premature, especially for those taking ibuprofen as a course of treatment for other diseases (3/19)

- Outcomes for patients in age ranges (e.g. 20-54) thought to be less effected by CV-19 are more severe than initially anticipated; new data indicates hospitalization and intensive care rates for these groups are higher than perhaps expected (3/19)

- Notes on potential deployment of National Guard related to public health interventions, specifically restricting movement among heavily impacted areas (3/19)

- Minor grammatical changes (3/19)