Leading Your Company in Difficult Times: Basic FAQs of Operating as an Essential Service in the Era of COVID-19

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This article is the first in our Leading Your Company in Difficult Times series, co-authored by Dr. Faith Oi and Kemp Anderson.

PMPs are critical to protecting public health. Arthropod and vertebrate pests do not decrease because we have a human crisis. In fact, they can become more serious problems. We are heading into the mosquito, tick, flea, termite, ant, and stinging insect spring and summer season all at once due to our mild winter. We are seeing an increase in rat numbers in cities such as New Orleans (https://bit.ly/2JaDoKe) and other major cities across the US as restaurants close and citizens embrace social distancing and stay home.

The Immediate Problem:

It is true that most healthy people infected with the virus will have mild symptoms, but this is **the danger: you may be asymptomatic** for SARS-CoV-2 (the virus that causes COVID-19) and unknowingly transmit it to employees and customers. **(A person is considered asymptomatic if they are a carrier for a disease pathogen but experience no symptoms.)** Conversely, your customers may be **asymptomatic** and may transmit SARS-CoV-2 to you. You may then take it home to your family and infect them. At this time, employee and customer safety is our top priority.

As business leaders, it is critical to analyze the benefits and risks of being declared an "essential service". **Essentials Services:** purchases or services that are necessary for survival or perceived as central to well-being. We will cover this deeper in future articles. You can decide what services you offer and how you offer them, but it is your responsibility to move forward under these new conditions safely. The only way to do that is for you to analyze as much credible information as possible and then adjust your business' current standard operating procedure.

It is important to remember that SARS-CoV-2 is a "novel" virus, meaning **we have not seen this before in humans**. Expect SARS-CoV-2 to behave like an invasive species introduced to a new area when resources are plentiful (i.e., people without immunity) and there are no biological controls to keep the population in check or registered products to use in management (i.e., FDA approved medications). We will address the difference between FDA approval and FDA Emergency Use Applications (EUA) in another article. Hydroxychlororquine, chloroquine, and azithromycin are allowed under an FDA Emergency Use Application that clearly states it is not an approved drug for COVID-19. (https://www.fda.gov/media/136534/download).

It is our strong opinion that businesses who are nimble, and willing to adjust as new information becomes available, will survive this crisis – and some will continue to grow and even get stronger. The rest of this article will attempt to answer some frequently asked questions.

What is the rate of asymptomatic transmission?

Wo do not have a good answer for this question. Testing has been very limited in the U.S. and the time to when people become infectious after the become infected is not known. Note that there is a difference between a carrier being "asymptomatic" and the rate of "asymptomatic transmission."

- Reports indicate that asymptomatic transmission could be as high as 25% according to CDC Director, Dr. Robert Redfield.
- Anecdotal evidence indicates that 10-30% of children were asymptomatic for COVID-19-19 (J. Williams, chief, pediatric infectious diseases, University of Pittsburgh)
- Source: https://www.abccolumbia.com/2020/04/01/guide-to-asymptomatic-covid-19-transmission/

Another complication in determining whether someone is asymptomatic is the highly variable and long **"incubation period"** of SARS-CoV-2. The incubation period is the time from exposure of the virus to the time you show symptoms. Think about how many people you contact, including your family and friends, during the time intervals below before becoming **symptomatic**.

- ~5 days was the **median** time to the onset of symptoms (Lauer et al. 2020).
    - Both the "median" and "average" or "mean" are statistics used to describe the middle of a dataset, also called a measure of "central tendency."
    - The "median" is different than the "average." To calculate the average, you add up all of your numbers and divide by the total number of numbers you have.
    - To find the median, you line up your numbers from small to large and the middle number is the median. The median is a better measure of the middle of a dataset when the data are "skewed."
- 97.5% of those who developed symptoms did so within 11.5 days (Lauer et al. 2020).
- Some took longer to develop symptoms (2.5%).

How does someone avoid infection or avoid the unknowing spread of SARS-CoV-2?

1. Wash your hands thoroughly, as if you had a pesticide on them and then some. Use these videos in company training. https://www.cdc.gov/handwashing/videos.html

2. Limit travel and contact with others as much as possible. Practice social distancing. Social distancing is generally defined as limiting contact with persons outside your

immediate household and **keeping at least 6 feet away from another person** when in public.

There is no more graphic example of the consequences for defying the guidance to practice social distancing than the spring-breakers in Texas and Florida. Many now have COVID-19. The attitude of "if I get corona, I get corona" is ignorant and selfish, apology notwithstanding.

- Between March 14-19, 70 students chartered a plane to Cabo, San Lucas, Mexico and 44 are now positive for COVID-19 (https://cbsn.ws/3bNHmop). All of the people who have tested positive are students at the University of Texas in Austin and all of the students are now under an investigation. As of April 1, 2020, Travis County Texas which includes Austin has reported 244 coronavirus cases with 57 in their 20's (an abnormally high number for this age group) including 2 deaths. (Source: NPR)

- At least 5 students tested positive after spring break in Florida (https://cbsn.ws/3aEdmeD). Unfortunately, Florida has been slow to react to COVID-19 and has over 22 million citizens, 17% percent of whom are over 65 years (higher risk category) old according to recent census.

The lack of a synchronized "stay-at-home" order will prolong restrictions for those who have already been under emergency order restriction and draw out the economic catastrophe playing out before our very eyes; the cascading effects on the healthcare system, families and friends, and you.

Only you can determine what is a reasonable risk for you as you modify your services because it depends on your individual situation.

- Do you live with others who might be susceptible to the virus even if you are asymptomatic? For example, do grandparents or older relatives live with you? They are in a high-risk category?
- Anyone live with you who has a pre-existing respiratory condition?
- Are you in any of the other high-risk COVID-19 categories?
- Do you have medical insurance?
- Working as an "essential service" during a pandemic when there is an outbreak of a disease that does not have a cure and prevention (vaccine) is a consideration.
- The Center for Disease Control (CDC) has guidance on people who are at higher risk. https://bit.ly/2V5XFpW

What is an "essential service" and where is pest control mentioned in the federal memo?

The federal memo does not provide a definition of essential service; instead it is intended to "give advisory guidance on defining essential critical infrastructure workers." Most states adopt the language issued in the federal guidance. An updated version of Guidance on the Essential

Critical Infrastructure Workforce: Ensuring Community and National Resilience in COVID-19 Response Version 2.0 (March 28, 2020) can be found here: https://bit.ly/39AuSix

Pest control is not specifically mentioned. You will find "exterminators" listed once under the Public Works and Infrastructure Support Services section. Here is the context in which exterminators are considered an essential service: "Workers such as plumbers, electricians, **exterminators**, builders, contractors, HVAC Technicians, landscapers, and other service providers **who provide services that are necessary to maintaining the safety, sanitation, and essential operation of residences, businesses and buildings such as hospitals, senior living facilities, any temporary construction required to support COVID-19 response**.

If someone asked you why you are an essential service, what would you say? Here is my elevator speech: "The pest control industry protects the public health and property including critical infrastructure from pests. We protect hospitals, assisted care facilities, nursing homes, schools, every government building, the places you eat, work, and play from pests such as rodents, bed bugs, asthma-triggering cockroaches, medically important stinging insects, wildlife, and pests that contaminate the food supply chain. Pest control services improve and protect our health, the places we live and work, the quality of the air we breathe, the water we drink, and the food we eat. We are the most effective defense against mosquitoes, ticks, rodents, cockroaches, flies, and other public health pests including those that transmit pathogens that cause Zika, Dengue, West Nile, Lyme disease, and a host of food-borne pathogens. We also protect animal health (and yours) by controlling fleas that can carry tapeworm, mosquitoes that carry heartworm, and ticks that transmit numerous pathogens. We are often the first line of defense against invasive species such as the Formosan and Asian termites that damage not only structures, but contents, including paper documents. And we do this while putting your safety first, so you may see us doing some things differently than you are used to."

I am proud of this industry, can you tell? Nevertheless, I highly recommend evaluating the intent of "exterminators" being included as an "essential service" as you determine what is right for you and your company.

Even with "essential services" status, I am losing customers because they are losing their jobs. When do you see light at the end of the tunnel? The economic recovery time is intrinsically linked to our ability to "flatten the curve". One model that has grabbed the White House's attention is the "Chris Murray Model" (http://www.healthdata.org/covid). The purpose of this model was to help healthcare providers plan their responses to the COVID-19 crisis. If social distancing is practiced, the end of the first wave is predicted to end by June. This date can be changed by many factors. (http://www.healthdata.org/covid/faqs#length%20of%20the%20epidemic) If we do not practice social distancing in a synchronized fashion, the first wave will last longer and result in more deaths.

It is common knowledge that strict social distancing (limiting unnecessary contact outside of your immediate household and staying at least 6 feet away from another person outside of your home) is a key factor in decreasing SARS-CoV-2 transmission. The Chris Murray model accounts for whether "stay-at-home" orders have been issued, if educational facilities and non-essential services have been closed, and if travel has been severely limited. As of April 8, 2020 U.S., hospital resource needed far exceeds the hospital resources available.

The first known US death from the Coronavirus was approximately four weeks ago on February 29. It took 27 days to go from 1 death to 1,000 deaths in the US. That second 1,000 deaths took less than 3 days. **Assuming full social distancing through May 2020** in the U.S., as of April 8, 2020, we can expect the most hospital use on April 11, 2020, with a predicted projection of 2,212 people dying of COVID-19 on April 12 alone. This does not mean the United States can go back to normal on April 12. It means that we may start to see a decline in deaths due to the first wave of COVID-19. The number of deaths is estimated to be 60,415 from April 8 to August 4, 2020—just 4 months. The model only provides predictive values for 4 months.

Table 1. As of April 8, 2020, the projected hospital resources needed and shortage for the U.S. assuming full social distancing through May 2020.

All beds needed: 94,249	Bed shortage: 15,852
ICU beds needed: 19,438	ICU bed shortage: 9,047

Florida is arguably home to the largest pest control industry in the nation. While educational facilities were closed on March 17, there was no order closing non-essential services – and travel was not limited (recall the spring-breakers and Florida demographics). Florida only issued a statewide "stay-at-home" order, effective April 3, 2020. Until April 3, each Florida county was required to issue their own emergency order, which means efforts to defeat this virus have not been coordinated.

The lack of coordination shows in the steeply increasing cases of COVID-19 cases daily. Florida's peak number of deaths was projected to occur on May 3 (two weeks after the national average) with an estimated 175 people dying on May 4, but the model has been adjusted to account for the "stay-at-home" order. As of April 8, the model now projects that the peak in daily deaths to be 149 on April 23. Again, **this does not mean business as usual after April 23**. It just means that Florida should see the number of deaths decrease. The statewide death total from April 8 to August 4 is expected to be 4,357 under the current practices and policies (https://covid19.healthdata.org/projections).

Another valuable and interactive website tracking the scope of COVID-19 cases and how we're "flattening the curve" is the Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) website (https://coronavirus.jhu.edu/map.html). On April 2, the U.S. took over the regrettable position of #1 for total confirmed cases at 213,372 and as of April 5, 2020, at 10:27p.m. there were

337,310 “known” cases in the US with a reported 9,634 deaths according to Johns Hopkins map and metrics. As of April 8, there are 399,979 confirmed cases and 12,912 deaths as of 11:47 am. We will likely end the day with confirmed cases over 400,000. The number of cases does not tell the whole story of the severity of the virus spread. Percentages may be simplistic, but it lets us compare apples to apples.

If you look at the numbers and percentage of the population that tested positive for COVID-19 in relation to the entire population of a country, the U.S. not only has over four times the number of confirmed cases compared with China (who previously held the #1 spot), the United States has more than 20 times the percentage of people who are positive.

Check out these numbers. I used data from the Johns Hopkins website: https://coronavirus.jhu.edu/map.html

- China had 82,802 positive COVID-19 cases on April 8, 2020. The population size is 1.3 billion people, which means 0.0059% of the population tested positive.
- The United States had 399,979 positive COVID-19 cases on April 8, 2020. The U.S. population size is 327.2 million people, which means 0.1222% of the populations tested positive.
- The United States also has a limited number of COVID-19 test kits. As of April 5, 2020, if a member of your household tests positive, other members of your household are to remain in quarantine as if they are positive – without testing taking place.
    - Note: If states do not have the tests for COVID-19, we may be underestimating the number of people who are positive for SARS-CoV-2.
- The topic of transmissibility is complex, and we will cover it in a future article, but in short: the R_0 is a measure of transmissibility. Epidemiologists call it the “basic reproduction number” The R_0 for COVID-19 is currently around 2.2, meaning for every infected person, they transmit the virus to about 2 more people. In order to “bend” the infection curve, we need R_0 to be >1.

Another point of comparison is to look at the timing for when positive cases were first documented and a country’s implementation of social distancing efforts.

- South Korea reported their initial cases of COVID-19 on January 21, 2020, **the same day as the U.S**. They acted early with a nationwide, coordinated strategy that included medical resource sharing across regions and aggressive testing as the central element. South Korea’s testing program has been described as the most “expansive and well-organized testing program in the world.” Their efforts were successful in “flattening the curve” WITHOUT “locking down” their citizens, but they did close their schools. (Source: https://www.weforum.org/agenda/2020/03/south-korea-covid-19-containment-testing/)
- South Korea has tested 2.3 times more of their population per million people than the U.S. South Korea tested 8,184.27 people per million in their population. The population

size of South Korea is about 8.57 million people. The percentage of the South Korea population testing positive is 0.019%.

- In contrast, the U.S. has tested only 3,469.68 people per million and our population size is 357.2 million people. As of April 5, 2020, the percentage of the U.S. population testing positive is at 0.103% which is 5.4 times that of South Korea.
    - Test data source: https://ourworldindata.org/covid-testing)
- The United States and South Korea both reported their initial cases of COVID-19 on January 21, 2020. Yet we continue to lack a coordinated effort to test, practice social distancing, or have a cohesive strategy to share medical resources. Each state is tasked with enacting "stay-at-home" orders and the conditions of the orders vary from state to state.
- South Korea began to "bend" the curve in early March. The U.S. curve still resembles an exponential function with a steep slope (incline) and no evidence of a "bend" (https://coronavirus.jhu.edu/map.html)

While great efforts are being made to increase access to testing in the U.S., the lack of testing leaves us with a huge data gap, making it difficult to conduct business. We do know this: expect a lag in any positive effects that may occur with staggered "stay at home" orders by individual states. Consider operating under the assumption that more people are positive for COVID-19 than we know.

For those who might say "**I don't understand the models, so I don't trust them."** That's totally understandable. But most business owners already use information from models to help inform decision making. One example that most of us use daily is a weather report! Think about models this way: *They are approximations of reality, based on the data that we have at the time.* In the case of COVID-19, scientists agree that the dataset is incomplete and changing rapidly.

Plan for the worst. Hope for the best and look at all of your options in between