



JOHNS HOPKINS  
BLOOMBERG SCHOOL  
*of* PUBLIC HEALTH

---

**Center for Health Security**

# **Public Health Principles for a Phased Reopening During COVID-19: Guidance for Governors**

# AUTHORS

**Caitlin Rivers, PhD, MPH**  
Senior Scholar, Assistant Professor

**Elena Martin, MPH**  
Analyst, Research Associate

**Crystal Watson, DrPH, MPH**  
Senior Scholar, Assistant Professor

**Monica Schoch-Spana, PhD**  
Senior Scholar, Senior Scientist

**Lucia Mullen, MPH**  
Analyst, Research Associate

**Tara Kirk Sell, PhD, MA**  
Senior Scholar, Assistant Professor

**Scott Gottlieb, MD**  
Resident Fellow, American Enterprise Institute

**Kelsey Lane Warmbrod, MS, MPH**  
Analyst, Research Associate

**Divya Hosangadi, MSPH**  
Analyst, Research Associate

**Amanda Kobokovich, MPH**  
Analyst, Research Associate

**Christina Potter, MSPH**  
Analyst, Research Associate

**Anita Cicero, JD**  
Deputy Director, Visiting Faculty

**Tom Inglesby, MD**  
Director, Professor

Published on April 17, 2020  
Copyright © 2020 Johns Hopkins University

## EXECUTIVE SUMMARY

As the COVID-19 pandemic continues to progress, most jurisdictions have implemented physical distancing measures community-wide. As chains of transmission begin to decline, along with new COVID-19 cases, there will need to be decisions at the state level about how to transition out of strict physical distancing and into a phased reopening.

This document provides an assessment of the risk of SARS-CoV-2 transmission in a variety of organizations and settings that have been closed. We outline steps to reduce potential transmission during the reopening of these organizations and settings, building on the proposed phased approach from the [National Coronavirus Response: A Road Map to Reopening](#). Reopening businesses and other sectors represents one of many steps that will need to be taken to revitalize communities recovering from the pandemic, restore economic activity, and mitigate the unintended public health impact of the distancing measures that were necessary to confront the epidemic of COVID-19. A discussion of larger community-wide considerations for holistically enhancing recovery can be found in the [Appendix](#).

State-level decision makers will need to make choices based on the individual situations experienced in their states, risk levels, and resource assessments. They should make these decisions in consultation with community stakeholder groups. Different parts of the country face varying levels of risk and have different resources available to confront these uncertainties. These decisions will need to be accompanied by clear and transparent communication to gain community engagement around the greatly anticipated reopenings. Individuals, businesses, and communities have a role to play in taking actions to protect themselves and those around them during this time. In this report, we offer a framework for considering risks regarding the likelihood of transmission and potential consequences of those transmissions. This is accompanied by proposed assessments for nonessential businesses, schools and childcare facilities, outdoor spaces, community gathering spaces, transportation, mass gatherings, and interpersonal gatherings. This is followed by proposed action steps for state-level decision makers on how to use risk assessment findings.

# INTRODUCTION

Over the past few weeks, most states have implemented strict physical distancing measures in an extraordinary effort to reduce transmission of SARS-CoV-2. These measures are working, and there are now signs of improvement in some communities where the numbers of new cases reported daily have begun to decline. Although no states are ready to lift physical distancing measures, there is immense pressure to get back to business as usual, and these developments have prompted questions around how to reopen in individual states when it becomes safer to do so.

It will be essential for each state to make informed decisions about how to carefully move from a strict physical distancing phase (Phase I) to a staged reopening phase (Phase II) and to communicate that rationale clearly. As important, governors should set appropriate expectations around the risks involved in reopening businesses and other sectors. To be clear, reopening will increase the risk of COVID-19 spread. Therefore, it is important for leaders to know that getting things open again will increase the risks of individuals contracting COVID-19, and there is no way to completely guard against that.

The majority of models have shown that, in the absence of social distancing, COVID-19 has a reproduction rate of between 2 and 3 (though some models have shown it to be higher). This means that every person with the disease will spread it to 2 to 3 others, on average. To end an epidemic, control measures need to drive that number as far below 1 as possible. A vaccine can do that if and when it becomes available. But in the meantime, social distancing measures, combined with case-based interventions, are the key tools to maintaining the reproduction rate below 1. If the reproduction rate rises above 1, this means that epidemic growth has resumed. If that occurs, it may be necessary to re-initiate large-scale physical distancing. It is important to recognize that states will need to actively manage COVID-19 cases with great vigilance for the entire duration of the pandemic until a safe and effective vaccine is widely available.

The purpose of this document is to assess the risk of SARS-CoV-2 transmission in businesses, schools, and other community spaces considered nonessential by state orders, in order to identify candidates for reopening. This evaluation should be done on the basis of risk for viral transmission in different settings and the ability to implement mitigation measures to reduce risks to employees and customers. Reopening businesses is only one step among many that will need to be considered on the path to recovering from this pandemic. This document is limited to issues of reopening and does not address other important matters related to recovery from this pandemic around the country. At the same time, reopening decisions prompt the larger question of how communities can plan better for other, future decisions ([see Appendix](#)).

## PHASES OF REOPENING

This report builds on the epidemic phases described in the [National Coronavirus Response: A Road Map to Reopening](#), published last month. That report outlined 4 phases and identified capacities required in each phase, as well as the triggers needed to progress from one phase to the next.

Phase I consists of community-level physical distancing measures to “slow the spread.” In addition to asking community members to remain at home, state leaders should also use Phase I to increase access to diagnostic testing and increase public health and medical system capacities. These capacities are needed to safely identify and treat all COVID-19 patients and to prepare for a shift from community mitigation (what we are doing now) to case-based interventions (when we try to control spread by focusing testing and resources on individuals with disease who may be infectious and their close contacts).

A shift to Phase II could be considered when the following 4 criteria have been met: (1) the number of new cases has declined for at least 14 days; (2) rapid diagnostic testing capacity is sufficient to test, at minimum, all people with COVID-19 symptoms, as well as close contacts and those in essential roles; (3) the healthcare system is able to safely care for all patients, including having appropriate personal protective equipment for healthcare workers; and (4) there is sufficient public health capacity to conduct [contact tracing](#) for all new cases and their close contacts, as described in our [National Plan to Enable Comprehensive COVID-19 Case Finding and Contact Tracing in the US](#).

During Phase II, businesses and sectors can begin a process of reopening, with modifications. Rather than asking everyone to stay home, states can limit SARS-CoV-2 transmission through a combination of physical distancing and case-based interventions (testing, contact tracing, and self-isolation for those with active disease or individuals who may have contracted SARS-CoV-2 and are awaiting test results), which in most places may require an expanded workforce and resources.

Phase III looks ahead to a time when an effective therapeutic or vaccine is available, and Phase IV identifies some policy priorities for increasing preparedness for the next public health threat. Details of those phases can be found in that [full report](#).

# CONSIDERATIONS FOR STATE-LEVEL DECISION MAKING

There is no one-size-fits-all approach to reopening. Governors will need to assess the epidemiologic situation in consultation with public health and healthcare leaders, along with mayors, local community leaders, and health departments. These discussions should include considerations of available capacities (eg, in the areas of diagnostic testing, personal protective equipment, healthcare and medical resources), careful risk assessments, and a weighing of the risks and benefits sector by sector. Governors will need to decide whether to implement the same reopening policies across the state or if there will be local decisions taken at the county or city levels. They will also need to make plans for the potential reintroduction of physical distancing measures should there be an uptick in cases.

Epidemiologic risk for increasing virus transmission is only one of many factors that should guide decision making at the state level. This document is not intended to be a comprehensive representation of necessary steps for transitioning into new phases of the pandemic. Decisions pertaining to reopening of different sectors can be particularly high consequence, and governors should ideally consult with a multidisciplinary group of stakeholders who have an understanding of the circumstances facing communities and the ability to identify downstream impacts of decisions around reopening sectors in local communities. These stakeholders could include, for example, leaders from chambers of commerce or small business bureaus, faith-based communities, representatives from minority and underserved communities, and organizations that regularly work with vulnerable populations. These diverse perspectives will highlight the practicalities of what reopening will mean for their communities and will uncover opportunities for state and local leaders to provide additional support to those communities during the transition to Phase II, where gradual reopening begins.

Consequential decisions around reopening have the potential to be immensely beneficial but also carry the possibility for unintentional harm. Decisions driven by risk assessments will support protection of the health and safety of the public. The addition of consultations with multidisciplinary stakeholder groups ensures that many voices are heard and that additional programmatic and financial resources can be directed to places where they are most needed.

## COMMUNICATION AROUND REOPENING

The most critical component in communication around reopening is to ensure community engagement in both mitigation measures taken to prevent the spread of disease and plans for reopening. This requires substantial effort to coordinate with community and business stakeholders. Communication must address concerns from those stakeholders and should be conducted with an interest in 2-way communication and input from a wide range of voices. Without community engagement as a goal of communication efforts, there is a risk of distrust, spread of misinformation, and lack of compliance. Different states and local communities may weigh differently the competing considerations as to how they stage their reopening, based on local needs, resources, social issues, and risk factors. This underscores the importance of leaving these decisions to state and local officials, and for state and local officials to involve interdisciplinary stakeholder groups in reopening discussions.

There is great anticipation of the possibility of returning to a sense of normalcy and routine activities; therefore, framing and communication of goals and considerations around reopening will be of key importance. The position from which decisions are framed will function to generate support from members of the public. Communities are feeling the costs of lost livelihoods, interrupted schooling for children, and grief from loss of loved ones to the virus. Measured strategies for explaining the factors involved with reopening decision making will be needed.

Communication before and during the period of phased reopening should be transparent about the factors that are being used to make decisions, the decision-making process, and those stakeholders who were part of the decision-making process. Leaders should acknowledge uncertainty where it exists and highlight what measures are being taken to reduce that uncertainty. They should also foreshadow what information may lead to a change in recommendations. A nuanced understanding of the challenges faced by those affected by decisions about reopening and empathy toward these challenges is also critical to ensure members of the community feel their issues have been given consideration.

Communication during reopening should also ensure that individuals know what actions they should take to protect themselves from COVID-19 and what should reasonably be expected from businesses and other community members. This requires a good understanding of their risks and the mitigation measures being put in place by businesses. State and local authorities should regularly update members of the public about what they are doing to keep people safe, changing circumstances, and changes in requirements for businesses.



# THE IMPORTANCE OF RISK ASSESSMENT

Risk assessments should be integrated into the decisions around reopening. Risk assessments are formalized processes to evaluate risks and hazards. Assessing the risks of easing social distancing measures and restarting parts of the economy requires a measurement of the **likelihood** of increased transmission and the **consequences** of that transmission. Likelihood in this case means the probability that reopening a business, school, or other organization where people congregate will cause significantly increased transmission. Consequence is the impact that increased transmission could have on individuals or communities if a business, school, or other organization reopens or eases social distancing measures.

In addition, there are mitigation measures that can decrease both the likelihood and consequences of transmission. Although enumeration of those mitigation measures for every type of business is beyond the scope of this report, we briefly describe principles of risk reduction through the hierarchy of controls later in this section. Where possible, we have also linked to a selection of existing guidance throughout the document.

The risks of increased transmission of COVID-19 are balanced against risks to the health and well-being of the public, society, and the economy from measures taken to reduce the spread of the disease. The likelihood and consequence of harms across a range of factors, including but not limited to increased disease transmission, other health impacts, threats to livelihoods, and consequences to regional economies, should be considered together.

## Likelihood

There are still many gaps in scientific understanding about the transmission dynamics of SARS-CoV-2. But initial published data suggest that transmission of SARS-CoV-2 occurs primarily through prolonged, close contact. In studies that have monitored people with a known exposure to a confirmed case, household members, those who report frequent contact, and people who have traveled together or shared a meal are found to be at [highest risk](#) of infection. Other studies that attempt to reconstruct transmission chains among confirmed cases have also found that prolonged close contact is the source of most new [infections](#). Some special settings have also been identified. [Superspreading](#) events have been linked to religious services, choir practice, and large family gatherings, among others. Congregate settings like [cruise ships](#), [institutions of incarceration](#), and [long-term care facilities](#) have also been the source of large outbreaks. These findings suggest that settings where close contact is minimal will be lower risk than settings with prolonged close contact.



However, it is important to note that low risk does not mean no risk. Any place where people come together or have contact with shared surfaces could in theory be a transmission opportunity. Exact quantification of the risks of various activities is not possible, so we present here qualitative assessments using expert elicitation and published data as of the date of this report.

## Consequences

The primary consequence is the risk of increased transmission of SARS-CoV-2, which could precipitate community spread. Businesses or activities that bring people together in densely populated spaces, those that have employees or customers that travel further and disperse more widely, and those that either employ or have a large number of customers with COVID-19 risk factors, like underlying medical conditions, may create greater personal and societal consequences if they ignite a chain of transmission by reopening.

## Mitigation

Mitigation measures are those actions to reduce the negative impacts of situations carrying increased risk through minimizing the severity or scope of impact. The [Centers for Disease Control and Prevention](#) has published extensive guidance on implementation of mitigation measures across multiple levels of society, including individuals, schools, workplaces, faith-based organizations, and congregate living spaces.

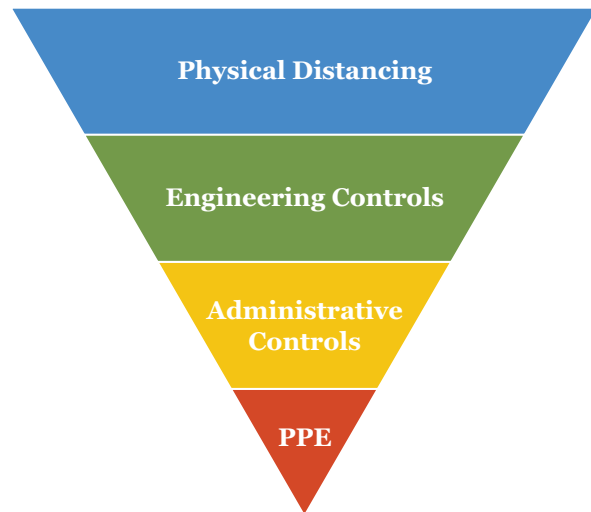
Even if a business or organization is deemed to be high risk because of likelihood or consequences of increased transmission, it is possible to reduce that risk with targeted mitigation steps. However, it should be noted that no mitigation step will reduce the risk completely, and even with multiple mitigation steps in place, some businesses or organizations may be at too high a risk to open until the pandemic is over.

[Hierarchy of controls](#) is a concept used by the National Institute for Occupational Safety and Health (NIOSH) as a framework for identifying controls for potentially harmful workplace hazards. These principles are useful for assessing the effectiveness of controls for COVID-19 and for understanding the range of impacts those measures can have on decreasing the likelihood of transmission. The NIOSH hierarchy of controls structure is adapted below for COVID-19 purposes.

## MODIFIED HIERARCHY OF CONTROLS

Using the modified hierarchy of controls, COVID-19 mitigation measures can look like:

- Physical Distancing — wherever possible having people work or access the business from home; this should include restructuring responsibilities to minimize the numbers of workers that need to be physically present.
- Engineering controls — creating physical barriers between people
- Administrative controls — redistributing responsibilities to reduce contact between individuals, using technology to facilitate communication
- PPE — having people wear nonmedical cloth masks



Regardless of business specific considerations, there are measures that can be taken to mitigate the risk of infection to protect individuals:

- Use of nonmedical cloth masks
- Incorporating engineering controls such as physical barriers where possible
- Reconfiguring space to enable people to be located apart (ideally, at least 6 feet)
- Supporting and enabling employees to remain at home if they are unwell or have been in close contact with someone who is sick

## ASSESSING RISK FOR ORGANIZATIONS AND SPECIFIC SETTINGS

This section provides high-level risk assessments for the following 7 categories: (1) “nonessential” businesses,\* (2) schools and childcare facilities, (3) outdoor spaces, (4) community gathering spaces, (5) transportation, (6) mass gatherings, and (7) interpersonal gatherings. Each of these categories was assessed along 3 dimensions: contact intensity, number of contacts, and the degree to which the activities are considered to be modifiable (through mitigation measures such as enabling people to remain 6 feet apart) to reduce risk. We note that these assessments are qualitative and

\* “Nonessential businesses” is a term being used by states to distinguish between businesses that are allowed to remain open because they are critical to societal functioning and those that have been asked to temporarily close.

based on expert judgment. Currently, there are not enough detailed data available to enable quantitative risk stratification. Unfortunately, states will need to make decisions about re-initiating some business activities before there are validated data to know the levels of risk we are assuming in reducing social distancing in various settings.

For purposes of this document, contact intensity was rated as either low, medium, or high. We define contact intensity as a function of contact type (ranging from close to distant) and duration (ranging from brief to prolonged). Low contact intensity activities are interactions that are brief and fairly distant, like walking past someone in a shop. High contact intensity activities involve prolonged close contact, like sharing a dormitory. Medium contact intensity activities fall between these 2 poles, like sharing a meal in seats that are separated by several feet. Of course, inside a business environment, there may be physical spaces and/or activities that range from low to medium to high, and that should be taken into account during the decision-making process. Risk to employees who may have different exposures should also be considered.<sup>†</sup>

We also assess the number of contacts as either low, medium, or high. We define the number of contacts as the approximate number of people in the setting at the same time, on average. A higher number of contacts is presumed to be riskier.

Modification potential (the degree to which mitigation measures can buy down those risks) is a qualitative assessment of the degree to which activities can be modified to reduce risk. The engineering controls framework was used to inform the risk assessments; sectors and businesses that could effectively incorporate physical distancing and engineering controls were considered to have a higher modification potential than those relying on administrative controls or personal protective equipment. Links to a selection of existing guidance on what those mitigation steps could include are also provided.

These risk assessments are primarily oriented around customers, attendees, and members of the public, who would make up the majority of people interacting with a business or other noted setting in this report. However, we acknowledge that risk to employees will likely be greater in many of these organizations and settings, as their duration of exposure and number of interactions will be higher. Special precautions should be taken to protect employees, potentially including restructuring duties to minimize person-to-person contact, changing work flows or operations to diminish risk, providing personal protective equipment for employees (if sufficient supplies make it

---

<sup>†</sup> This text was added on April 20, 2020, after publication, to clarify the population under consideration for the risk assessments.

feasible to do so outside the healthcare system), and providing enhanced sanitation and hygiene supplies (eg, disinfecting products and alcohol-based hand sanitizer).\*

Included in the next section are high-level risk assessments for various sectors. They are not listed in any particular order, and the list is not fully comprehensive. Governors and their teams may want to modify these risk assessments according to local considerations. In the final section, there are proposed principles for incorporating these determinations into policy decisions. Those, too, should be modified to reflect local context.

## “Nonessential” Businesses

Category	Contact Intensity	Number of Contacts	Modification Potential	Mitigation Resources
Restaurants	Medium	Medium	Medium	<a href="#">National Restaurant Association, FDA</a>
Bars	High	High	Medium	<a href="#">FDA</a>
Salon, spas, and other personal care industries	Medium/high	Low	Medium	<a href="#">TN Cosmetology &amp; Barber Guidelines</a>
Retailers	Low	Medium	Medium	<a href="#">NY state guidance, OSHA</a>
Shopping malls	Low	Medium	Medium	<a href="#">NC state guidance, OSHA</a>
Gyms/fitness studios	Medium	Medium	Medium	<a href="#">CDC Small Business guidance</a>
Theaters, museums, and other indoor leisure spaces	Medium	High	Medium	<a href="#">CA entertainment venue guidance, Americans for the Arts, American Alliance of Museums</a>
Outdoor large venues (concerts, sports)	High	High	Medium	<a href="#">CDC Mass Gathering guidance</a>
Indoor large venues (concerts, sports)	High	High	Low	<a href="#">CDC Mass Gathering guidance</a>

\* This text was added on April 20, 2020, after publication, to clarify the population under consideration for the risk assessments.

## Schools and Childcare Facilities

Schools and childcare facilities play many important roles in communities. Schools provide necessary education to prepare children for adulthood. Online education from K-12 is not a substitute for in-person learning and socialization in a school setting. Long-term shutdowns will likely lead to education gaps and other consequences for many children. In addition to the critical function of educating children, schools and childcare facilities also enable parents to work outside the home. They also serve as key resources in that they offer meals, safe environments, and other services, particularly to vulnerable families.

Unlike businesses and sectors that primarily serve adults, the consequences of increased transmission are potentially different for settings and activities that primarily serve kids. Children are less vulnerable to severe illness from COVID-19 than adults. A recent [report](#) found that fewer than 2% of cases of COVID-19 in the United States were diagnosed in children, and of those (for whom data were available), between 5.7% and 20% required hospitalization. Most children requiring hospitalization were under 1 year of age. These considerations favor the reopening of schools and childcare facilities.

However, it is still not known what role children play in the transmission of SARS-CoV-2. For other viral illnesses, like influenza, children are drivers of transmission. Early and prolonged school closures have been shown to reduce overall community transmission of influenza. There has been some evidence that COVID-19 produces more [mild illness](#) in children and therefore it may be less likely to be detected than in adults. However, without more conclusive evidence, it is difficult to quantify the role of [children](#) in propagating [COVID-19](#) to other students, their family members, teachers, and school staff. Furthermore, schools and childcare facilities are staffed by adults, some of whom may be at risk of severe illness. These considerations weigh against reopening.

Some students are likely to have underlying medical conditions that will prevent them from returning to school safely. Other students who are healthy without underlying conditions may have parents who believe it is unsafe for their children to return to school, either because of concerns about the health of the student or the possibility of bringing infection back to the household and infecting adults. If schools are reopened, decisions will need to be made regarding whether tele-education will need to be provided to those students who do not come back to school, alongside in-person education being provided in school.

In order to better understand the role of children in transmission, studies reconstructing transmission chains are needed, as are studies seeking to correlate viral load to infectiousness. Governors should work with their state public health departments to make this research a priority.

<b>Category</b>	<b>Contact Intensity</b>	<b>Number of Contacts</b>	<b>Modification Potential</b>	<b>Mitigation Resources</b>
Childcare facilities (daycare, preschools)	High	Medium/High	Low/Medium	<a href="#">CDC, WHO</a>
Schools (elementary, middle, and high)	High	High	Low	<a href="#">CDC, WHO</a>
Contact school sports	High	Medium/High	Low	<a href="#">NCAA, CDC</a>
Noncontact school sports	Low	Medium	High	<a href="#">NCAA, CDC</a>
Summer camps	High	High	Low	<a href="#">American Camp Association, Association of Camp Nursing</a>
Institutions of higher education	High	High	High	<a href="#">CDC, American College Health Association</a>
Residence halls and other overnight programs	High	Medium	Low	<a href="#">NYC guidance for congregate settings and residential buildings</a>

## Outdoor Spaces

COVID-19 transmission is more likely in [enclosed spaces](#) than outdoor spaces, based on current epidemiologic understanding. Indoor spaces may have poor ventilation, which may lead to viral particles persisting in the air or recirculating longer than they would outdoors or in enclosed spaces with good ventilation. People also tend to be closer together indoors, and there are more high-touch surfaces that can serve as fomites of disease transmission. Therefore, there is lower risk of disease transmission [outdoors than indoors](#), especially if distance is maintained between individuals while outdoors.

Category	Contact Intensity	Number of Contacts	Modification Potential	Mitigation Resources
Parks, walking paths/trails, dog parks	Low	Low	Low	<a href="#">Guidance from MD</a> , <a href="#">Guidance from RI</a> , <a href="#">Guidance from Los Angeles, CA</a>
Athletic fields and other outdoor congregate settings	Medium	Medium	Low	<a href="#">Guidance from the National Mall Trust in Washington, DC</a>
Pools	Medium	Low	High	<a href="#">CDC</a> , <a href="#">Guidance from WA</a>
Beaches, piers	Low	High	Medium	<a href="#">Guidance from Orange Beach, AL</a> , <a href="#">Guidance from RI</a>
Playgrounds, skateparks, and other outdoor recreation spaces	Medium	Medium	Medium	<a href="#">Guidance from MD</a> , <a href="#">Guidance from Santa Cruz, CA</a>



## Community Gathering Spaces

Community spaces provide important societal benefits and can range from civic centers to places of worship. The risk in these spaces is highly dependent on the size of the population they serve and the size of the space.

Category	Contact Intensity	Number of Contacts	Modification Potential	Mitigation Resources
Places of worship	High	High	Medium	<a href="#">CDC</a> , <a href="#">FAQ for Faith Leaders from NYC</a> , <a href="#">Guidance from NY state</a> , <a href="#">Risk Assessment from WHO</a> , <a href="#">Decision Tree from WHO</a>
Libraries <sup>§</sup>	Low	Low	Medium	<a href="#">CDC</a> , <a href="#">Guidance from Baltimore County Library</a>
Community centers	Medium	High	Medium	<a href="#">CDC</a> , <a href="#">Guidance from PA</a> , <a href="#">Guidance from Riverside University Health System</a> , <a href="#">Guidance from IL</a>

## Transportation

Transit is very important for keeping communities functioning, and limiting mass transit availability disproportionately affects [under-resourced populations](#). Transit should be opened with careful mitigation measures, given that public transportation is a fairly high-risk setting.

Category	Contact Intensity	Number of Contacts	Modification Potential	Mitigation Resources
Buses	High	High	Medium	<a href="#">CDC</a> , <a href="#">NY state guidance for public transportation</a>
Metros/rail	High	High	Medium	<a href="#">CDC Transit Stations</a> , <a href="#">CDC Transit Workers</a>
Airplanes	High	High	Medium	<a href="#">CDC guidance: baggage claim/ cargo, airport staff, staff interacting with passengers, aircraft technicians</a>
Rideshare/taxis	High	Low	Low	<a href="#">Washington State Guidance for Rideshare/Taxis</a> , <a href="#">Toronto Guidance</a>

<sup>§</sup> Libraries that incorporate social activities or community gatherings into their services should refer to the “community centers” category.

## Mass Gatherings

According to the [World Health Organization](#), an event is defined as a mass gathering “if the number of people it brings together is so large that it has the potential to strain the planning and response resources of the health system in the community where it takes place.” The size of an event that can be considered a mass gathering may depend on the national and local healthcare capacity and the context. For example, if other strains are placed on the health system at the same time, such as an ongoing outbreak, the threshold of the health system would be considerably lower, and, therefore, the size of the event could be considerably smaller and still be defined as a mass gathering.

[Mass gatherings](#) have often been the source of infectious disease outbreaks that spread globally or have contributed to the international spread of disease. While a number of public health measures can be implemented in the planning and operational phases of a mass gathering to significantly reduce the risk of disease spread, during the current pandemic, the high risk for COVID-19 transmission that mass gatherings pose should be recognized. This [high risk of transmission](#) is due to a number of factors, including the high density of individuals often in attendance in confined spaces during mass gatherings, the possibility of further domestic or international spread, and the new formation of clusters as people often travel significant distances to attend a mass gathering.

Mass gathering organizers must comply with national and local guidelines and restrictions. At the current stage in the pandemic, while the White House Coronavirus Task Force has recommended banning gatherings of more than 10 people, [Individual states](#) have varied in the size of gatherings they are banning. As these restrictions lift and organizers begin hosting large events, they should conduct a COVID-19–specific risk assessment to determine the level of risk of transmission the event may pose and identify areas for modification that could reduce or mitigate these risks. The [WHO](#), among others, provides risk assessment and mitigation tools for mass gathering organizers, along with several technical guidance documents.

<b>Category</b>	<b>Contact Intensity</b>	<b>Number of Contacts</b>	<b>Modification Potential</b>	<b>Mitigation Resources</b>
Sports related mass gatherings: games, tournaments, championships	High	High	Medium	<a href="#">WHO guidance for mass gatherings-Sports Addendum</a> , <a href="#">WHO mass gatherings risk assessment - sports addendum</a> , <a href="#">WHO Interim guidance for all mass gatherings</a> , <a href="#">WHO generic mass gathering decision tree</a> , <a href="#">CDC guidance</a>
Sports related mass gatherings: training	High (sport dependent)	Medium	Medium	<a href="#">WHO Interim guidance for mass gatherings-Sports Addendum</a> , <a href="#">WHO generic mass gatherings risk assessment - sports addendum</a> , <a href="#">WHO Interim guidance for all mass gatherings</a> , <a href="#">WHO generic mass gathering decision tree</a> , <a href="#">CDC guidance</a>
Religious related mass gatherings: large celebrations, festivals, pilgrimages	High	High	Medium	<a href="#">CDC, FAQ for Faith Leaders from NYC</a> , <a href="#">Guidance from NY state</a> , <a href="#">Risk Assessment from WHO</a> , <a href="#">Decision Tree from WHO</a> , <a href="#">WHO considerations for religious mass gatherings</a>
Business-related mass gatherings: trade shows, conferences, conventions, workshops, retreats	High	High	High	<a href="#">WHO Interim guidance for mass gatherings</a> , <a href="#">WHO generic mass gatherings risk assessment</a> , <a href="#">WHO generic mass gathering decision tree</a> , <a href="#">CDC guidance</a>
Entertainment-related mass gatherings: large concerts, festivals, carnivals, conventions, shows	High	High	Medium	<a href="#">WHO Interim guidance for mass gatherings</a> , <a href="#">WHO generic mass gatherings risk assessment</a> , <a href="#">WHO generic mass gathering decision tree</a> , <a href="#">CDC guidance</a>
Politically related mass gatherings: election rallies, polling centers, parades, speeches/addresses	High	High	Medium	<a href="#">WHO Interim guidance for mass gatherings</a> , <a href="#">WHO generic mass gatherings risk assessment</a> , <a href="#">WHO generic mass gathering decision tree</a> , <a href="#">CDC guidance</a>

## Interpersonal Gatherings

Interpersonal gatherings among family and friends, including events such as weddings, birthday parties, and funerals, hold great personal and societal value. Attending these events, however, also holds the risk of disease transmission. An epidemiologic assessment of a large, multifamily cluster of COVID-19 cases found that transmission of the virus likely resulted from attendance at a funeral and birthday party. Factors including interacting closely together in enclosed spaces, hugging or kissing, and sharing food or utensils are all practices that are often common at interpersonal gatherings and can increase the risk of SARS-CoV-2 transmission. Certain cultural practices in funerals that promote physical contact with a deceased individual, when that deceased person was infected with SARS-CoV-2, should also be avoided. Careful consideration should be given to ensure that mitigation measures are implemented to reduce the risk of spread, where possible, while still respecting the cultural value of important events. In particular, the [CDC recommends](#) that organizers should consider the number and density of attendees, the prevalence of people who could be at high risk of severe illness due to underlying factors, the level of local community disease transmission, and the ability to reduce the number of attendees where possible.

<b>Category</b>	<b>Contact Intensity</b>	<b>Number of Contacts</b>	<b>Modification Potential</b>	<b>Mitigation Resources</b>
Small social gatherings (eg, birthday parties)	High	Medium	High	<a href="#">CDC guidance</a>
Large social gatherings (weddings, funerals with many attendees)	High	High	High	<a href="#">CDC guidance</a> , <a href="#">National Funeral Directors Association guidance</a>

## PROPOSED PRINCIPLES FOR ACTION

States should consider initiating the reopening process when (1) the number of new cases has declined for at least 14 days; (2) rapid diagnostic testing capacity is sufficient to test, at minimum, all people with COVID-19 symptoms, including mild cases, as well as close contacts and those in essential roles; (3) the healthcare system is able to safely care for all patients, including providing appropriate personal protective equipment for healthcare workers; and (4) there is sufficient public health capacity to conduct contact tracing for all new cases and their close contacts.

Governors should involve stakeholder groups in the decision-making process in order to better understand the needs, capacities, and challenges of different communities.

Even when reopening actions are under way, those who can continue to telework should continue to do so. This will reduce social interactions overall and will reduce the risk of infection in workplaces where telework is feasible. Businesses should actively support social distancing by implementing telework policies and adopting flexible sick leave policies that encourage workers to stay home when sick or when known exposure to COVID-19 has occurred.

All individuals going back to work should wear nonmedical cloth masks. This will reduce the chance of those people transmitting the virus to their co-workers.

Governors should consider reopening in phases separated by 2 to 3 weeks. After each phase of reopenings, state public health officials should review the numbers of new COVID-19 daily case counts, hospitalizations, and deaths carefully, along with other syndromic surveillance tools. The results of reopening decisions will take 2 to 3 weeks to be reflected in those numbers. If case counts, hospitalizations, and deaths go up in that time, further actions in reopening should be paused, and steps should be taken to get control of the rising numbers. Possible actions might include changes to case finding and contact tracing, taking specific measures to respond to identified new outbreaks, and, as needed, re-imposition of some or all of the previously relaxed social distancing interventions.

Organizations and activities that are outdoors are less likely to result in transmission than are indoor activities and seem to carry the lowest risk, assuming personal mitigation measures (maintaining 6 feet of separation, wearing nonmedical cloth masks in public) are all maintained.

Businesses and sectors that have low contact intensity, low numbers of contacts, and high ability to modify operations in ways that diminish the potential to spread will be safer to reopen sooner and more fully than those with high contact intensity, high contacts, and the inability to modify or mitigate operations.

While public transportation is normally high contact intensity and high numbers of contacts, modifications should be pursued to make them safer. More spacing between people, with lower ridership, would reduce risks. Without public transportation, many people will not be able to get to work at all.

Schools and childcare facilities pose special challenges. They are very important for the education of children, and many parents will have difficulty going back to work if schools remain out of session. There are many scientific uncertainties that complicate this decision. Children infected with COVID-19 generally experience more mild symptoms than adults, but the rate at which they spread the disease to other children, teachers, school staff, and family members is uncertain. If schools are reopened, most kids will be at low risk of severe infection themselves. However, some kids will have underlying conditions that increase their risks, and some teachers and staff will be at high risk. Their parents may also be at high risk if children do get infected and transmit the disease at home. Some parents may elect to not allow their children back in school, so schools that reopen will need to decide whether to also offer tele-education. States will need their own processes of decision making and community engagement regarding how to make decisions about school reopening on the basis of these uncertainties.

## **CONCLUSIONS**

This document summarizes considerations, risks, and opportunities for governors to weigh when deciding when and how to slowly reopen. These decisions should be made carefully and thoughtfully to limit the risk of disease resurgence. Reopening of businesses is only one step among many that will need to be considered on the path to recovering from this pandemic.

# APPENDIX

## Planning to Restore Community Vitality in the Pandemic Context: Leadership Considerations and Actions

When can businesses, schools, recreational facilities, and places of worship reopen for normal operations? This is one in a series of major decisions that will reflect and shape how communities adapt to the protracted pandemic and its cascading social and economic effects. As governors urgently consider the proper public health conditions for an economic restart, they can also begin to prepare for a more comprehensive process of community revitalization that will stretch over near, intermediate, and long terms. The demands for social service, mental health, and workforce development needs, for instance, will stretch farther into the future than society's requirements for physical distancing. It is, thus, prudent for states' top executives to be proactive and plan for the future well-being of their residents. Below are some principles and practices that governors can adopt to that end:

**Draw lessons from analogous complex threats, characterized by uncertainty, that require measured decision making:** A pandemic is not the only scenario in which economic well-being and public health are seemingly at odds and potential tradeoffs require careful weighing. In the case of widespread contamination from radioactive materials, for instance, the standard is not a prescribed numeric clean-up guideline but, rather, a flexible, iterative, and multifaceted decision-making process that involves stakeholders such as citizens' groups and businesses in developing an [exit strategy](#). The [individuals](#) most affected by the decision have input into those societal aims governing the clean-up.

**Recognize that the desire to get back to normal as quickly as possible is a common reaction in the catastrophic context, and it is an impulse worth restraining:** Governors, mayors, and county executives governing during disasters know the tensions in wanting a swift return to business-as-usual versus aspiring toward greater community [safety](#), [equity](#), and [quality of life](#). The pandemic—which has revealed deficiencies, for instance, in healthcare delivery, the social safety net, and workplace leave policies—represents an opportunity for visionary leadership, goal setting, and transformation. [Pandemic recovery planning](#) can readily learn from best practices in disaster recovery planning.

**Initiate a planning process for community revitalization (aka pandemic recovery) that runs in parallel with the public health response:** The COVID-19 pandemic is an organic event marked by uncertainty; still, it is certain that the health crisis will eventually end. At the same time, the need to adapt to sudden or long-term shifts in conditions



will not end. And yet, despite its oversized effects, this health crisis is not, in the end, exceptional. [We can benefit](#) from extant, forward-looking, data-driven, coordinating bodies that already enable disaster recovery and other long-range planning efforts (eg, economic development, community development). A [revitalization management organization](#) can integrate with emergency operations center activities and run concurrently to maximize community benefits from short- and long-term recovery duties.

[Consult diverse stakeholders and communicate broadly, to ensure that state residents can partake in decision making that is relevant to community vitality](#): Rebuilding a community over the long term after a complex calamity devolves to thousands of people navigating recovery as nonprofessionals; it is a [collective action problem](#). An organization to make collective action possible knits together key leadership roles and collaboration: an authorizing and approving body, plan leadership via a lead planning agency or official, and a planning task force. A [revitalization plan](#) that reflects shared values can be enabled by specialists in planning, communication, and information and data management and by public and stakeholder involvement.



**JOHNS HOPKINS**  
BLOOMBERG SCHOOL  
*of* PUBLIC HEALTH

---

**Center for Health Security**

**Johns Hopkins  
Center for Health Security**

621 E. Pratt Street, Suite 210  
Baltimore, MD 21202

Tel: 443-573-3304  
Fax: 443-573-3305  
[centerhealthsecurity@jhu.edu](mailto:centerhealthsecurity@jhu.edu)

[centerforhealthsecurity.org](http://centerforhealthsecurity.org)