

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

HON. PAUL L. MALONEY

GRETCHEN WHITMER, in her
official capacity as Governor for the
State of Michigan, ALLEN
TELGENHOF, in his official
capacity as Charlevoix County
Prosecuting Attorney, BRIAN L.
MACKIE, in his official capacity
as Washtenaw County Prosecuting
Attorney, and WILLIAM J.
VAILLIENCOURT, JR., in his
official capacity as Livingston
County Prosecuting Attorney,

MAG. PHILLIP J. GREEN

Defendants.

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**DEFENDANT WHITMER'S RESPONSE TO PLAINTIFFS'
MOTION FOR TEMPORARY RESTRAINING ORDER
AND PRELIMINARY INJUNCTION**

CONCISE STATEMENT OF ISSUE PRESENTED

1. *Jacobson* gives the State broad authority to implement emergency measures when faced with a society-threatening epidemic – including measures that burden fundamental constitutional rights. Even without *Jacobson*, under traditional constitutional analysis, Executive Order 2020-42 passes muster. Plaintiffs fail to establish their entitlement to the extraordinary relief of a preliminary injunction because they cannot demonstrate a strong likelihood of success on the merits of their claims, cannot demonstrate irreparable harm, and cannot demonstrate that the balancing of the equities or the public interest favor an injunction.

CONTROLLING OR MOST APPROPRIATE AUTHORITY

Authority: *Jacobson v. Commonwealth of Massachusetts*, 197 U.S. 11 (1905).

INTRODUCTION

“Upon the principle of self-defense, of paramount necessity, a community has the right to protect itself against an epidemic of disease which threatens the safety of its members.” *Jacobson v. Commonwealth of Massachusetts*, 197 U.S. 11, 27 (1905). To that end, “[t]he possession and enjoyment of all rights are subject to such reasonable conditions as may be deemed by the governing authority of the country essential to the safety, health, peace, good order, and morals of the community.” *Id.* at 26.

This well-settled rule of law permits a state, in times of public health crises, to reasonably restrict the rights of individuals in order to secure the safety of the community. The scourge of COVID-19—a novel virus that quickly spread across the entire planet, infecting millions, and killing tens of thousands—presents such a crisis. Jurisdictions across the globe have had to impose aggressive measures to stem the viral tide that has overwhelmed healthcare systems worldwide. Schools have been shuttered, gatherings have been postponed, and business operations have been curtailed.

Michigan is one of the states hardest hit by the pandemic. 31,424 have been confirmed infected and 2,391 have died, all in just over a month. There is no dispute that in the absence of any vaccine, social distancing is the most effective way to combat the virus and keep these numbers from escalating. Recognizing this, Defendant Governor Gretchen Whitmer has taken bold, yet reasonable and necessary, steps to prioritize social distancing in Michigan.

In Executive Order 2020-42, Governor Whitmer exercised her authority under Michigan law to put measures in place to suppress the spread of the virus and protect the public health. These measures, subject to various exceptions, include: prohibiting in-person work that is not necessary to sustain or protect life; ordering individuals living in Michigan to stay at home or their place of residence; requiring those who do leave their home or place of residence to adhere to social-distancing practices; and prohibiting the operation of businesses that require workers to leave home if those workers are not necessary to sustain or protect life or to conduct minimum basic operations.

Some of the exceptions include leaving a home or residence to: engage in outdoor physical activity; perform jobs as “critical infrastructure workers;”¹ perform necessary government activities; perform tasks necessary to an individual’s or family member’s health and safety; to obtain necessary services and supplies; and to care for a family member in another household.

These generally applicable, temporary, and content-neutral measures strike a reasonable balance between the need for unnecessary in-person contact to cease and the need for essential services to continue. Most importantly, they are working for the benefit of the public health of everyone who lives in Michigan.

¹ “Critical infrastructure workers” were defined in Sections 8 and 9 of the Executive Order, and include those workers described by the Director of the U.S. Cybersecurity and Infrastructure Security Agency in his March 19, 2020 guidance.

Providing Plaintiffs with their requested relief would unlock exceptions to these generally applicable, and effective, public health measures in a time of most dire need. The judicial creation of such exceptions on a case-by-case, piecemeal basis infringes on the state's authority to act in a public health crisis and threatens its overarching plan to cope with the dangers and protect the lives, health, and welfare of all Michiganders.

STATEMENT OF FACTS

COVID-19 is similar to other coronaviruses (a large family of viruses that cause respiratory illnesses), but the strain is "novel," *i.e.*, never-before-seen. This means that there is no general or natural immunity built up in the population (meaning everyone is susceptible), no vaccine, and no known treatment to combat the virus itself (as opposed to treatment to mitigate its symptoms).

Regardless of the lack of definitive information, public health officials do know that COVID-19 is highly contagious, spreading easily from person to person via "respiratory droplets."² Experts agree that being anywhere within six feet of an infected person puts you at a high risk of contracting the disease.³ But even following that advice is not a sure-fire way to prevent infection. The respiratory

² World Health Organization, *Modes of transmission of virus causing COVID-19*, available at <https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>. (Attached as Exhibit A).

³ Centers for Disease Control, *Social Distancing, Quarantine, and Isolation*, available at <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html>. (Attached as Exhibit B).

droplets from an infected person can land on surfaces, and be transferred many hours later to the eyes, mouth, or nose of others who touch the surface. Moreover, since many of those infected experience only mild symptoms, a person could spread the disease before he even realizes he is sick. Most alarmingly, a person with COVID-19 could be asymptomatic, yet still spread the disease.⁴ Everyone is vulnerable either as a potential victim of this scourge or a carrier of it to a potential victim.

Because there is no way to immunize or treat for COVID-19, the Centers for Disease Control has indicated the best way to prevent illness is to “avoid being exposed.”⁵ And, if experience from prior pandemics such as smallpox and the 1918 Spanish Influenza is any indication, early intervention to slow COVID-19’s transmission is critical.

In keeping with this advice, governmental entities have stressed the critical import of “social distancing,” the practice of avoiding public spaces and limiting movement.⁶ The objective of social distancing is what has been termed “flattening the curve,” that is, reducing the speed at which COVID-19 spreads. If the disease

⁴ (*Id.*)

⁵ (*Id.*)

⁶ (*Id.*)

spreads too quickly, the limited resources of our healthcare system could easily become overwhelmed.⁷

On March 10, 2020, in response to the growing pandemic in Michigan, Governor Whitmer declared a state of emergency and invoked the emergency powers available to the Governor under Michigan law.⁸ On March 13, 2020, Governor Whitmer issued Executive Order 2020-5, prohibiting assemblages of 250 or more people in a single shared space with limited exceptions, and ordering the closure of all K-12 school buildings.⁹ Yet, even in the face of the social distancing recommendations and the six-foot rule of thumb, on Saturday, March 14, the public was out in droves.

On March 16, 2020, the Governor ordered various places of public accommodation, like restaurants, bars, and exercise facilities, to close their premises to the public.¹⁰ And on March 17, 2020, the Governor issued an order

⁷ See *New York Times, Flattening the Coronavirus Curve* (March 27, 2020), available at <https://www.nytimes.com/article/flatten-curve-coronavirus.html>. (Attached as Exhibit C). Take Italy, for example, where the healthcare system was so overloaded in just three weeks of dealing with the virus that it could not treat all patients infected, essentially leaving some to die. Upon information and belief, Singapore eased early restriction and then saw a rise in cases – the dreaded specter of a “second wave” of this pandemic.

⁸ EO No. 2020-4, available at https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-521576--,00.html. (Attached as Exhibit D).

⁹ EO No. 2020-5, available at https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-521595--,00.html. (Attached as Exhibit E).

¹⁰ EO No. 2020-9, available at https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-521789--,00.html. (Attached as Exhibit F) (Replaced by EO 2020-20).

rescinding 2020-5, changing the cap on assemblages to fifty persons in a single shared indoor space, and expanding the scope of exceptions from that cap.¹¹

Subsequently, on March 23, 2020, again in response to the spreading pandemic in Michigan, Governor Whitmer issued Executive Order No. 2020-21, which essentially ordered all persons not performing essential or critical infrastructure job functions to stay in their place of residence, other than to obtain groceries, care for loved ones, engage in outdoor activity consistent with social distancing, and other limited exceptions.¹² The order also prohibited, with limited exceptions, all public and private gatherings of any number of people that are not part of a single household.¹³ That order was to continue through April 13, 2020; however, on April 9, 2020, the Governor issued Executive Order 2020-42, extending the Stay-home Order through April 30, 2020.¹⁴ It is this Executive Order which Plaintiffs challenge, in various forms, that is before this Court.

STANDARD FOR PRELIMINARY INJUNCTION

In deciding whether to grant a preliminary injunction, a court weighs four factors: “(1) whether the movant has a strong likelihood of success on the merits; (2) whether the movant would suffer irreparable injury absent the injunction; (3)

¹¹ EO No. 2020-11, available at https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-521890--,00.html. (Attached as Exhibit G).

¹² EO No. 2020-21, available at https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-522626--,00.html. (Attached as Exhibit H).

¹³ (*Id.*)

¹⁴ EO No. 2020-42, available at https://content.govdelivery.com/attachments/MIEOG/2020/04/09/file_attachments/1423850/EO%202020-42.pdf. (Attached as Exhibit I).

whether the injunction would cause substantial harm to others; and (4) whether the public interest would be served by the issuance of an injunction.” *Bays v. City of Fairborn*, 668 F.3d 814, 818–19 (6th Cir. 2012).

Importantly, “[t]he party seeking the preliminary injunction bears the burden of justifying such relief, including showing irreparable harm and likelihood of success,” and faces a “much more stringent [standard] than the proof required to survive a summary judgment motion” because a preliminary injunction is “an extraordinary remedy.” *McNeilly v. Land*, 684 F.3d 611, 615 (6th Cir. 2012). It is “reserved only for cases where it is necessary to preserve the status quo until trial.” *Hall v. Edgewood Partners*, 878 F.3d 524, 526 (6th Cir. 2017).

Applying these factors to the case at bar, Plaintiffs’ motion for injunctive relief must be denied.

ARGUMENT

I. Plaintiffs are not likely to succeed on the merit of the claims.

Although the four factors “are factors to be balanced” and “not prerequisites to be met,” a preliminary injunction cannot issue where “there is simply no likelihood of success on the merits.” *Bays*, 668 F.3d at 818–19 (internal quotation marks omitted). “When a party seeks a preliminary injunction on the basis of a potential constitutional violation, the likelihood of success on the merits often will be the determinative factor.” *Obama for Am. v. Husted*, 697 F.3d 423, 436 (6th Cir. 2012).

Here, Plaintiffs are not likely to succeed on the merits of their claims for multiple reasons. First, their claims are not ripe. Second, the restrictions in the

Governor's Executive Order are a proper exercise of the expanded authority given to the States to combat a public health crisis. Third, even under a more traditional analysis of the alleged constitutional violations, the restrictions at issue pass muster.

A. Plaintiffs' claims are not ripe.

Plaintiffs have failed to allege Article III standing in this pre-enforcement case because they have not pled an intent to violate the Executive Order or a credible threat of enforcement. Lacking these two necessary ingredients, the case is not ripe and Plaintiffs lack standing.

Ripeness is a piece of Article III standing, which limits this Court's jurisdiction to Cases and Controversies. U.S. Const., Art. III, Sec 2. The limits of Article III standing are "built on separation-of-powers principles," which "serve[] to prevent the judicial process from being used to usurp the powers of the political branches." *Susan B. Anthony List v. Driehaus*, 573 U.S. 149, 157 (2014) (quoting *Clapper v. Amnesty Int'l USA*, 568 U.S. 398, 407 (2013)). That is reflected in the Supreme Court's "especially rigorous" standing inquiry when the merits of a constitutional question pit the judiciary to pass on the constitutionality of the other branches of government. *See Clapper*, 568 U.S. at 408. A personal stake in the outcome of a controversy is a necessary part of standing, and that stake must be in the form of an injury that is "concrete and particularized" and "actual or imminent, not conjectural or hypothetical." *Driehaus*, 573 U.S. at 158. An allegation of future injury may suffice if the threatened injury is "certainly impending," or there is a "substantial risk' that the harm will occur." *Id.*

In short, in a pre-enforcement challenge, the plaintiff must allege (1) an intention to engage in the conduct he claims is unconstitutionally proscribed and (2) a credible threat of prosecution. *McKay v. Federspiel*, 823 F.3d 862, 867 (6th Cir. 2016). Here, Plaintiffs have alleged neither. In fact, they have commendably acknowledged they have not violated the Executive Order and give no reason to believe that they intend to. As a result, this Court should ultimately dismiss the matter for lack of Article III standing and Plaintiffs are therefore unlikely to succeed on the merits of any of their claims.

B. The States have wide latitude in dealing with great dangers to public health.

The worldwide impact of COVID-19 is recognized by all. Such an extraordinary circumstance requires extraordinary governmental measures. Executive Order 2020-42 is an extraordinary, yet reasonable and constitutional measure.

1. *Jacobson v. Commonwealth of Massachusetts*

Faced with “great danger[],” state actors are permitted great latitude to secure the public health. *Jacobson v. Commonwealth of Massachusetts*, 197 U.S. 11, 29 (1905). And in this time of crisis, securing the public health requires temporary sacrifices by each of us: “Real liberty for all could not exist under the operation of a principle which recognizes the right of each individual person to use his own, whether in respect of his person or his property, regardless of the injury that may be done to others.” *Id.* at 26.

In *Jacobson*, the Supreme Court considered a claim that the state’s mandatory vaccination law, which applied to every person in Cambridge, Massachusetts, due to a growing smallpox epidemic, violated the defendant’s Fourteenth Amendment right “to care for his own body and health in such way as to him seems best.” *Jacobson*, 197 U.S. at 26. The Supreme Court upheld this bold, invasive measure as a proper exercise of the States’ police power because of the exigencies and dangerousness of the public health crisis. It affirmed that “a community has the right to protect itself against an epidemic of disease which threatens the safety of its members.” *Id.* at 27. As the Court stated,

in every well-ordered society charged with the duty of conserving the safety of its members the rights of the individual in respect of his liberty may at times, under the pressure of great dangers, be subjected to such restraint, to be enforced by reasonable regulations, as the safety of the general public may demand.

Jacobson, 197 U.S. at 29.

Jacobson even highlighted the circumstance, without hesitation, in which seemingly healthy people were quarantined against their will aboard a ship on which others had cases of serious diseases. *Id.* at 29. The Court noted that such a drastic measure was reasonable “until it be ascertained by inspection, conducted with due diligence, that the danger of the spread of the disease among the community at large has disappeared.” *Id.* at 29.

Recognizing the separation of powers, and the fitness of the judiciary to invade the authority of a co-equal branch, the Court hesitated to “usurp the functions of another branch of government” by second-guessing the executive’s exercise of police power in such circumstances. *Id.* at 28.

Of course, constitutional rights do not disappear in the face of a public health crisis, but the analysis of the government’s action changes. Review is “only” available if the challenged action “has *no real or substantial relation to those objects* [of securing public health and safety], or is, *beyond all question, a plain, palpable invasion of rights secured by the fundamental law.*” *Id.* at 31 (emphasis added).

Jacobson’s principle is no outlier. *See, e.g., Prince v. Massachusetts*, 321 U.S. 158, 166–67 (1944) (“The right to practice religion freely does not include liberty to expose the community or the child to communicable disease or the latter to ill health or death.”); *Compagnie Francaise de Navigation a Vapeur v. La. State Bd. of Health*, 186 U.S. 380, 393 (1902) (upholding Louisiana’s right to quarantine even apparently healthy passengers aboard a vessel over a due process challenge).

And *Jacobson* not only remains good law, *see, e.g., Kansas v. Hendricks*, 521 U.S. 346, 356 (1997) (block quoting *Jacobson* in support of the proposition that “an individual’s constitutionally protected interest in avoiding physical restraint may be overridden even in the civil context”), but the Fifth Circuit recently had occasion to apply *Jacobson* to COVID-19-related regulations that burden a fundamental right. *See In re Abbott*, No. 20-50264, 2020 WL 1685929, at *8 (5th Cir. Apr. 7, 2020) (“*Jacobson* instructs that *all* constitutional rights may be reasonably restricted to combat a public health emergency.”) (emphasis in original).

In *Abbott*, the Fifth Circuit turned away a challenge to a Texas regulation that effectively barred abortions. The rationale supplied was that personal protective equipment (PPE) required for these procedures would be needed in the

fight against COVID-19. *Id.* at *3. The Fifth Circuit held that, under *Jacobson*, the regulation had a “real or substantial relation” to the crisis—it intended to free up PPE for health care professionals in the face of a shortage. *Id.* at *8. The Court also found that it was not “beyond question, in palpable conflict with the Constitution.” *Id.* at *9. The Court emphasized the limited temporal reach of the restriction (3 weeks). *Id.* at *9–10. And, given the existence of what it termed “facially broad exceptions,” the Court found that the regulation did not show a palpable conflict. *Id.* And even though he disagreed on the result, the dissenting judge recognized the broad reach of *Jacobson* and the standard to be applied. *Id.* at *19 (Dennis, J., dissenting).

Notably, Plaintiffs’ motion fails to meaningfully acknowledge *Jacobson*, and to discuss and analyze why it should not control here. That omission alone is fatal to Plaintiff’s claims and requests for emergency preliminary relief. Even if Plaintiffs were to engage *Jacobson*, it would be a futile attempt, for there is no arguing against its well-settled rule of law. Plaintiffs cannot dispute the gravity of the pandemic in Michigan. It appears to be a once-in-a-century kind of epidemiological public health crisis. In such times, the State has wide plenary authority to temporarily restrict activity that presents a diffuse but real threat to the public health. Under *Jacobson* and applicable principles of separation of powers, judicial deference to state authority responding to the crisis is paramount.

2. Application of *Jacobson*

Plaintiffs allege the impingement of various constitutional rights. Under *Jacobson*, in the face of the current public health crisis, the Governor’s Executive

Order is entitled to great deference, despite any impingement on individual rights, and must be upheld unless it has “no real or substantial relation” to the public health crisis, or is, “beyond all question, a plain, palpable invasion of rights.”

With this standard in mind, *Jacobson* requires that Governor’s Executive Order be upheld in its entirety. While the impact of any restriction on some aspect of normalcy outside of a pandemic is no doubt important, it is temporary and in specific response to a widespread public health crisis. The Court should view each restriction through the lens of the general public health justifications and the overarching goal of limiting the spread of this novel virus. A myopic, activity-specific framing of any issue is not helpful to the analysis. Appropriate understanding of the nature of the pandemic and the four corners of the implicated executive orders is adequate to the task before the Court. Consider each of Plaintiffs’ challenges in turn.

a. Closure of nonessential businesses, like lawn service businesses, nurseries, and gun shops

While no line-drawing is perfect, the bottom-line consideration that merits judicial deference is maximizing measures to limit the spread of the virus while not restricting essential, life-sustaining activity and services. Additionally, state authority had to also consider the temporary nature of any restriction and what as a general matter could be endured while flattening the curve. Accordingly, certain types of food service and outdoor activity must continue as safely as possible under the executive orders. Lawn service, nurseries, and gun shops fall outside of the zone of critical, life-sustaining activity and services that are exempted from the

general restrictions. Under these temporary restrictions, life can go on without operation of these sectors of the economy while public health is served by flattening the curve.

The point is not, as Plaintiffs argue, to imagine how each specific activity might be accomplished safely by using social distancing and other recommended prophylactic measures. In a drought, where the point is to avoid uncontrolled wildfires, there can be no allowance for those who promise to be really careful with their campfire and only use it for life-sustaining cooking. In a pandemic, the point is to keep workers and consumers alike away from each other and away from surfaces and other places where the invisible virus may lurk.

To wit, a lawn servicer alone while mowing a lawn may appear both innocuous and inoculated for purposes of the virus.

But appearances are deceiving. To get to that position, the mower or a co-worker had to handle multiple objects – vehicles, gas pumps and containers, the tools of the trade, products like mulch and fertilizer, gates and fences, doors and mailboxes, etc. Each of these contacts increases the incidence of the virus spreading. Like innumerable small breezes against a sail, enough will push a sailboat over a waterfall if the course is not changed and the sail not brought under control. Use of personal protective equipment, sanitizers, and the like will only

mitigate and will present the downside of depleting limited resources better used in frontline healthcare, supply chain, and other essential industries.¹⁵

This last point merits emphasis. Michigan, like other states, is in the throes of an impending shortage of PPE for medical professionals and other critical infrastructure workers. One N95 mask used by a landscaper is one fewer available for those in the health care industry, law enforcement, or other individuals *required* to provide critical infrastructure support. *See In re Abbott*, 2020 WL 1685929, at *8 (finding that restricting access to abortion had a “real or substantial relation” to the COVID-19 crisis because it was intended to free up PPE for health care professionals in the face of a shortage). In the zero-sum game of securing PPE in this time of scarcity, pulling one thread in the Governor’s coordinated response jeopardizes the rest of the quilt.

The same analysis applies to nurseries and gun shops. The restrictions are temporary and aimed at what can and cannot be done safely in the context of the pandemic.¹⁶ Adequate time must be given for the public health goals to be served

¹⁵ The exception for local government to maintain public parks and trails does not support Plaintiffs’ position. The difference is in the essential purposes served by that maintenance – general public access free of hazards for essential life-sustaining activity. Private lawn and garden service does not serve either function and therefore it is not exempted from the generally applicable public health restrictions.

¹⁶ It should be further noted that the temporary restrictions on lawn services and nurseries has been mitigated by the fact that Michigan has recently experienced April snow and unseasonably cold weather. Even in the absence of the restrictions, the weather would have postponed much of the “lost” economic activity Plaintiffs claim here.

and a transition to economic normalcy to return. Judicial deference is appropriate not just on the substance of this challenge but the timing as well. Temporary suspension of certain non-essential activity must be permitted as a matter of public health. As a matter of separation of powers, distinctions between essential and non-essential and safe and unsafe are best left to the branch designed for and equipped to make those calls. The Governor's Executive Order should not be undercut by disparate preliminary judicial carveouts in the wake of a particular litigant's race to the courthouse.

b. Prohibiting contact between persons from separate households

To limit the spread of the virus, contact between persons from separate households must be minimized as well. Accommodation is made for the health and welfare of others, but that is a life-sustaining exception. *See, e.g.*, Executive Order 2020-42 (Paragraph 7(a)(5).) The Court is no doubt aware of prominent examples of even top public officials distancing themselves from children and grandchildren who live in other residences. This is the sacrifice that all Michiganders must make. One need only examine a family tree or a network of friends to see that we are all connected in one way or another. Commonly, there are six degrees of separation between any two people, and that number is reduced all the more in families, neighborhoods, and other communities. Allowing for non-essential visits would

open a gateway for the virus in every family and social network.¹⁷ That consequence is precisely the opposite of what the public health goals are in this pandemic.

The separation required by this restriction is indeed a burden. But it is a temporary burden with the long view in mind – fighting the virus. Social distancing, moreover, is not the same as social isolation. Technology – telephones, e-mails, video links – are available to allow Michiganders to be separate yet together in this shared sacrifice. Under the circumstances, and the rule of *Jacobson*, Plaintiffs are not likely to succeed on this part of their challenge.

c. Prohibiting travel from one residence to another

The restriction prohibiting travel between two residences is critical to prevent the virus from traveling from one part of the state to another, and in particular, from more densely populated areas to less densely populated areas. As the virus ravaged southeastern Michigan, health systems were quickly at or above capacity. Medical supplies were dwindling, and beds in intensive care units were in short supply. There was a very real and imminent danger that hospitals could be completely overrun.

A similar outbreak of the virus in a rural area of the State would have dire consequences. Opportunities for medical care and treatment in less densely

¹⁷ Contrary to Plaintiffs’ assertions, EO 2020-42 does not prohibit using a private residence as a place for religious worship. Section 13 of EO 2020-42 exempts from enforcement “a place for religious worship, when used for religious worship.” This exemption from enforcement applies to religious worship held in a private residence.

populated areas of the State are fewer. Rural areas have fewer medical specialists or resources like a fleet of ventilators that could be needed to absorb legions of severely ill patients. Access to testing is limited in remote areas of the State. These concerns warrant extenuating limitations for travel to cottages and other, second residences.

In sum, the rural areas of Michigan are particularly vulnerable to the threat of COVID-19. The higher risk to these areas calls for special protection. The restriction prohibiting persons from traveling between two residences is directly aimed at preventing the spread of the disease from one part of the state to another, and in particular, from urban areas to rural areas. Based upon the foregoing, under *Jacobson*, this regulation has a “real or substantial relation” to the crisis.

d. Prohibiting operation of motorboats

For many of the same reasons already articulated, the operation of motor-propelled watercraft is reasonably restricted under these circumstances. As with walking, biking, and the like, use of personally propelled craft such as kayaks and canoes is permitted. This distinction is rooted, again, in the life-sustaining exercise-oriented operation of that craft. Motor-propelled craft do not serve the same function and therefore, it is reasonable for their operation to be temporarily suspended.

Return to the example of the lone mower in a large lawn. A lone boater may appear to be in a similarly safe position. But again, appearances can be deceiving. How did that boater get to be out there alone in the lake? Was there contact with a gas pump, gas containers, and other equipment along the way? What about gates,

ramps, docks, and boat launches? Did that boater need to also navigate a crowded marina, dock, or launch area where due to the geography people congregate and social distancing is a challenge? If there is an exigent incident or a disabling of the craft, how many other people will have to come assist and be in contact with the boater? What will that mean for limited resources among first responders and in the healthcare system? Upon examination, the public health concerns are manifest. Where the state's position under *Jacobson* is even arguable, Plaintiffs are not likely to succeed on the merits and the Court should defer to coequal authority.

In sum, the restrictions in the Governor's Order have a real and substantial relation to stopping the spread of the virus and do not result, beyond question, in a plain, palpable invasion of rights. Accordingly, under *Jacobson*, those temporary restrictions must be upheld, and Plaintiffs have no likelihood of success on the merits of their claims. On this basis alone, preliminary injunctive relief should be denied.

C. Even under traditional constitutional analysis, the Governor's Order passes muster

Should the Court disagree that *Jacobson* is dispositive, even under a more traditional analysis, Plaintiffs are not likely to succeed on the merits of their constitutional claims.

1. Due Process

The Due Process Clause provides heightened protection against government interference with certain fundamental rights and liberty interests. *See Reno v. Flores*, 507 U.S. 292, 301–302 (1993). In analyzing whether a particular right

implicates the protection of the Due Process Clause, courts must first define the asserted right and then ask whether it is “deeply rooted in this Nation’s history and tradition, and implicit in the concept of ordered liberty, such that neither liberty nor justice would exist if they were sacrificed.” *Washington v. Glucksberg*, 521 U.S. 702, 721 (1997) (cleaned up). Government action that curtails fundamental rights generally receives strict scrutiny, requiring the government prove its regulation is narrowly tailored to serve a compelling interest. *Id.* (citing *Flores*, 507 U.S. at 302).

a. The right to intrastate travel

The Sixth Circuit is of a few circuits to recognize the right to intrastate travel as “fundamental.” In *Johnson v. City of Cincinnati*, the Court held that the Due Process Clause of the Fourteenth Amendment protects the “right to travel locally through public spaces and roadways.” 310 F.3d 484, 495 (6th Cir. 2002). The level of scrutiny to be applied to a state-imposed travel restriction depends on the severity of the restriction. In *Johnson*, the Court applied strict scrutiny because the ordinance in question “impose[d] a more severe restriction” than “regulating the manner in which affected individuals” accessed an area (i.e., an anti-cruising ordinance), or the time of access (i.e., a curfew) by “broadly prohibiting individuals to access the entire neighborhood.” 310 F.3d at 502.

Despite applying strict scrutiny in reviewing the ordinance in *Johnson*, the court noted the possibility that intermediate scrutiny could be applied to a “less severe regulation of localized travel.” *Id.* at 502. *Johnson* also cited *United States v. Salerno*, 481 U.S. 739, 750–51 (1987) for the proposition that the “importance and fundamental nature of an individual’s interest in liberty . . . may, in circumstances

where the government's interest is sufficiently weighty, be subordinated to the greater needs of society." *Johnson*, 310 F.3d at 503.

EO 2020-42 is a "less severe regulation of localized travel" than the type at issue in *Johnson* and should be reviewed using a lesser form of scrutiny, i.e., intermediate scrutiny. *Id*; see also *Hannemann v. S. Door Cty. Sch. Dist.*, 673 F.3d 746, 756 (7th Cir. 2012) (upholding a complete ban on the plaintiff from schools grounds in the county); *Williams v. Town of Greenburgh*, 535 F.3d 71, 75–76 (2d Cir. 2008) ("[I]t is clear that the right [to intrastate travel] protects *movement between places* and has no bearing on *access* to a particular place." (emphasis in original)).

EO 2020-42 does not ban all travel in the State of Michigan. Indeed, it allows substantial amount of travel for citizens engaged in essential functions. Furthermore, the travel restrictions in the EO are temporary, partially restricting intrastate travel for only three weeks. The travel restrictions in EO 2020-42 are markedly different than the ordinance in *Johnson*, which completely denied access to individuals for either three months or one year. 310 F.3d at 493. The essential function exemptions represent a balance between reducing travel—and therefore human interactions—and allowing citizens to engage in essential functions of living. These exemptions reduce the efficacy of the travel restrictions because every time

someone fills up their gas tank, they risk spreading the virus.¹⁸ Given that between 25% and 60% of people inflicted with coronavirus may not show any symptoms,¹⁹ there simply is no way to perfectly tailor travel restrictions to individuals who are infected or have been in contact with people who are infected.

To be sure, EO 2020-42 does not deny any citizen of this State “access” to certain areas or roadways. Instead, EO 2020-42 temporarily bans nonessential traffic, allowing citizens to engage in intrastate travel to, among other things, go to work if they perform critical functions, to get groceries, and household and pet supplies, to take care of elderly family members or their children, to volunteer and to exercise. EO 2020-42 does not “broadly prohibit[] individuals to access [] entire neighborhood[s],” towns, or cities. *Johnson*, 310 F.3d at 502. Thus, EO 2020-42 is more like a curfew or anti-cruising ordinance insofar as it does not deny access, it “regulat[es] the manner in which . . . individuals” access an area by limiting travel by function without completely shutting down or denying access to certain areas. 310 F.3d at 502; *see also Bykofsky v. Borough of Middletown*, 401 F. Supp. 1242, 1256 (M.D. Pa. 1975), *aff'd*, 535 F.2d 1245 (3d Cir. 1976) (holding that a curfew for minors that served a “legitimate” interest of the city and contained “numerous exceptions that allow[ed] minors to be on the streets during the curfew hours when

¹⁸ The latest scientific data says that the virus can survive up to seventy-two (72) hours on plastic and stainless steel. <https://www.nejm.org/doi/10.1056/NEJMc2004973> (Attached as Exhibit K).

¹⁹ Available at <https://www.nbcnews.com/health/health-news/how-many-people-have-had-coronavirus-no-symptoms-n1187681> (Attached as Exhibit J).

they [had] a specific, important, legitimate purpose for being there” was constitutional).

Whether this Court finds that EO 2020-42’s restrictions on intrastate travel should be reviewed using intermediate or strict scrutiny, it should hold that the restrictions are constitutional.²⁰ Strict scrutiny requires the State show that EO 2020-42 is narrowly tailored to serve a compelling State interest. *See Glucksberg*, 521 U.S. at 721. As to the State interest at the heart of EO 2020-42, it seeks to “protect the health, safety, and welfare of citizens in” Michigan in the face of a deadly pandemic, a compelling interest. *Johnson*, 310 F.3d at 502. For the reasons discussed above, the Executive Order serves the compelling government interest through the means least restrictive under the circumstances. Thus, they do not violate the Plaintiffs’ right to intrastate travel. *Johnson*, 310 F.3d at 502-503.

b. Deprivation of Property

The Sixth Circuit has also recognized that a substantive due process violation occurs when arbitrary and capricious government action deprives an individual of a constitutionally protected property interest. *See Pearson v. City of Grand Blanc*, 961 F.2d 1211, 1216, 1217 (6th Cir. 1992); *see also Nectow v. City of Cambridge*, 277

²⁰ The State avers that, in the face of a global pandemic and upwards of thirty thousand Michiganders already infected, EO 2020-42 passes constitutional muster under intermediate scrutiny as well. While this section focuses on the EO’s constitutionality under a strict scrutiny review, the State also asserts there is a “reasonable fit” between EO 2020-42’s travel restrictions and the “significant, substantial, [and] important” State objective in containing the spread of COVID-19. *Tyler v. Hillsdale Cty. Sheriff’s Dep’t*, 837 F.3d 678, 693 (6th Cir. 2016) (outlining the test for intermediate scrutiny).

U.S. 183, 187–88 (1928) (holding that a court should not interfere unless the locality’s action “has no foundation in reason and is a mere arbitrary or irrational exercise of power having no substantial relation to the public health, the public morals, the public safety or the public welfare in its proper sense”) (internal quotation marks and citation omitted).

While challenges to arbitrary and capricious government action appear most frequently in cases involving zoning and other ordinances, *see, e.g., Vill. of Belle Terre v. Boraas*, 416 U.S. 1, 8 (1974), they are not necessarily limited to such cases, *see, e.g., Duke Power Co. v. Carolina Envtl. Study Group*, 438 U.S. 59, 82–83 (1978) (noting that federal economic regulations will be upheld “absent proof of arbitrariness or irrationality on the part of Congress”) (citation omitted).

Here, however, there is nothing illogical, arbitrary or capricious about the Governor’s promulgation of EO 2020-42. Given the characteristics of COVID-19, the restrictions ordered in the EO are necessary to protect the public from the spread of disease. “The fundamental nature of an individual’s interest in liberty . . . may, in circumstances where the government’s interest is sufficiently weighty, be subordinated to the greater needs of society.” *Salerno*, 481 U.S. at 750–51. Now is such a time.

c. Vagueness

Courts apply a two-part test to determine whether a law is unconstitutionally vague: first, the law must give a person of “ordinary intelligence a reasonable opportunity to know what is prohibited, so that [they] may act accordingly[;]” and second, the standards of enforcement must be precise enough to avoid “involving so

many factors of varying effect that neither the person to decide in advance nor the jury after the fact can safely and certainly judge the result.” *Grayned v. City of Rockford*, 408 U.S. 104, 108 (1972) (internal citation omitted); *Columbia Natural Resources v. Tatum*, 58 F.3d 1101, 1105 (6th Cir. 1995).

Here, while Plaintiffs’ motion mentions vagueness in passing, they offer no argument or analysis to demonstrate why EO 2020-42 is vague. Indeed, Plaintiffs offer no reasoning whatsoever to explain why EO 2020-42 cannot be understood by a person of ordinary intelligence, or why the standards of enforcement are imprecise. Instead, Plaintiffs contend that EO 2020-42 is vague because the Order lacks a rational basis. Not so. EO 2020-42 strikes a rational and reasonable balance between the need for unnecessary in-person contact to cease and the need for essential services to continue.

2. Second Amendment

a. EO 2020-42 is generally applicable and neutral, and the State does not need to show a compelling interest for enacting it.

EO 2020-42 does not single out gun stores for closure. Instead, the order requires *all* stores to close to prevent the spread of COVID-19 unless those stores provide services or sell items falling into a narrow group of services and products deemed to be essential. To be sure, EO 2020-42 applies broadly, but that is required to drastically reduce the number of interactions between individuals as a communicable virus with no known immunity threatens to rip through the population. Its breadth and generality are also what renders the EO

constitutional—it is generally applicable, and with regard to the constitutional rights of Michiganders, it is neutral. Because it is neutral, it does not violate the Second Amendment rights of the Plaintiffs. Neutral laws of general applicability are presumed constitutional, even when they encroach on an individual’s constitutional rights. See, e.g., *Church of the Lukumi Babalu Aye, Inc. v. City of Hialeah*, 508 U.S. 520, 531 (1993).

EO 2020-42 is neutral because it demands all stores—save a select few selling essential products—to shut down. That necessarily includes stores that sell guns and ammunition as well as stores that sell books, other media, religious products, and other items potentially protected by the First Amendment and other constitutional provisions. But it also requires stores shut down if they sell hair products, or sporting goods, or clothes, or any number of items to which the constitution does not guarantee a right of possession.

Which is precisely the point. EO 2020-42 does not discriminate. It does not target constitutionally protected items or activities, nor does it target anything outside the protections of the constitution. It is neutral, and it is generally applicable. Thus, it does not violate the Plaintiff’s Second Amendment rights. *Church of the Lukumi Babalu Aye, Inc.*, 508 U.S. at 531; see also *Employment Division, Department of Human Resources of Oregon v. Smith*, 494 U.S. 890 (1990).

In this case, the State enacted an emergency “public health regulation” that does not “single out” gun stores “for the imposition of its burden.” *Arcara v. Cloud Books, Inc.*, 478 U.S. 697, 704–707 (1986). The Second Amendment “is not

implicated by the enforcement of a public health regulation of general application” against stores that “happen to sell” guns. *Id.* at 707. Plaintiffs seek special protection from the EO for their favored constitutionally protected activity, but they cannot claim “special protection from governmental regulations of general applicability simply by virtue of their . . . protected activities.” *Id.* at 705. And the State need not create exemptions in its generally applicable EO to protect Plaintiffs’ Second Amendment rights. *See Smith*, 494 U.S. at 890.

b. Even if EO 2020-42 is not considered neutral in its application, it does not violate the Second Amendment.

EO 2020-42 does not infringe on the right of Plaintiffs to possess firearms, it orders that gun stores—like most other stores—temporarily shut down to prevent the spread of a contagious, deadly virus. EO 2020-42 therefore does not burden Plaintiffs’ conduct falling “within the scope of the Second Amendment right, as historically understood.” And if it does, it does so in furtherance of a “significant, substantial, or important” State objective.

There is a “reasonable fit” between EO 2020-42 and a “significant, substantial, or important” State objective. As argued above, the State’s objective has nothing to do with curtailing gun ownership or reducing gun sales and everything to do with reducing the number of people interacting with one another during a pandemic, squarely within the State’s responsibility to exercise its police power to keep Michiganders safe. EO 2020-42 represents the State’s most workable and systematic attempt to exercise that core power to reduce the number of daily human interactions in the State, and its tangential effect in delaying the purchase

of firearms from gun and ammunition stores does not violate a core Second Amendment right.

In *Heller*, the Supreme Court held that individuals have a right under the Second Amendment to possess a firearm and use that firearm for self-defense of their home. 554 U.S. at 574–625. The *Heller* Court warned that “[l]ike most rights, the right secured by the Second Amendment is not unlimited.” *Id.* at 625. It went on to note that it did not “cast doubt” on certain “longstanding” firearm regulations, including “laws imposing conditions and qualifications on the commercial sale of arms.” *Id.* at 626–27. These “longstanding” prohibitions and laws are “presumptively lawful regulatory measures.” *Id.* at 627, n. 26; *see also McDonald v. City of Chicago, Ill.*, 561 U.S. 742, 786 (2010) (affirming its language in *Heller* that “laws imposing conditions and qualifications on the commercial sale of arms” and presumptively valid).

Importantly here, “the act of selling firearms is not part or parcel of the right to ‘keep and bear arms,’” and the “Second Amendment does not confer a freestanding right to sell firearms.” *Teixeira v. Cty. of Alameda*, 873 F.3d 670, 687, 689 (9th Cir. 2017) (en banc).

In this circuit, laws regulating firearms that do not “burden conduct that falls within the scope of the Second Amendment right, as historically understood” are deemed constitutional against a Second Amendment challenge. *United States v. Greeno*, 679 F.3d 510, 518 (6th Cir. 2012). Laws that do burden conduct falling within the scope of the Second Amendment as historically understood and that

constitute a “severe burden” on a “core” Second Amendment right are subject to strict scrutiny from the Court, whereas laws that do not severely burden a core Second Amendment right get intermediate scrutiny. *See Tyler v. Hillsdale Cty. Sheriff’s Dep’t*, 837 F.3d 678, 690 (6th Cir. 2016).

To determine the appropriate level of scrutiny under *Greeno*, the Court must consider whether temporarily shutting down gun stores “burden[s] conduct that falls within the scope of the Second Amendment right, as historically understood,” 679 F.3d at 518, meaning possession of firearms and use of them in self-defense of one’s home. *Heller*, 554 U.S. at 574–625. But the Court in *Heller* went to great lengths to clarify that “laws imposing conditions and qualifications on the commercial sale of arms”—akin to the regulation here—are “presumptively valid.” *Id.* at 626–27, 627 n. 26; see also *McDonald* 561 U.S. at 786.

Plaintiffs cannot show that EO 2020-42 burdens their conduct historically protected by the Second Amendment. Plaintiffs do not have a Second Amendment right to have gun stores in their area open for business no matter the circumstances. Indeed, Plaintiffs do not have a Second Amendment right to purchase or acquire guns on demand. *See, e.g., Colo. Outfitters Ass’n v. Hickenlooper*, 24 F. Supp. 3d 1050 (D. Colo. 2014) (upholding background checks), *vacated on standing grounds*, 823 F.3d 537 (10th Cir. 2016); *Silvester v. Harris*, 843 F.3d 816 (9th Cir. 2016) (upholding waiting periods); *Libertarian Pty. of Erie Cty. v. Cuomo*, 300 F. Supp. 3d 424 (W.D.N.Y. 2018) (affirming licensing requirements),

appeal docketed, No. 18-386 (2d Cir. Feb. 8, 2018); *Heller v. District of Columbia*, 801 F.3d 264 (D.C. Cir. 2015) (upholding training requirements).

EO 2020-42 simply does not deprive Plaintiffs of the right to possess, use, buy, or acquire firearms. Therefore, Plaintiffs cannot show that EO 2020-42 “burden[s] conduct that falls within the scope of the Second Amendment right, as historically understood,” and the EO is constitutional. *See Greeno*, 679 F.3d at 518; *see also Nat’l Rifle Ass’n of Am., Inc. v. Bureau of Alcohol, Tobacco, Firearms, & Explosives*, 700 F.3d 185, 196 (5th Cir. 2012) (“[W]e state that a longstanding, presumptively lawful regulatory measure—whether or not it is specified on *Heller*’s illustrative list—would likely fall outside the ambit of the Second Amendment; that is, such a measure would likely be upheld at step one of our framework.”). Moreover, it cannot be said that the supposed right to have gun stores open in one’s area is a “core” Second Amendment right, particularly where the owners of the gun stores themselves do not have a “core” Second Amendment right to operate their store. *See Heller*, 554 U.S. at 626–27; *Teixeira*, 873 F.3d at 687, 689.

Assuming intermediate scrutiny as the correct rubric, the test is whether “the government’s stated objective” is “significant, substantial, or important,” and there must be a “reasonable fit between the challenged regulation and the asserted objective.” *Id.* at 693 (quoting *United States v. Chovan*, 735 F.3d 1127, 1139 (9th Cir. 2013)). “All that is required is a fit that is not necessarily perfect, but reasonable; that represents not necessarily the single best disposition but one whose scope is in proportion to the interest served.” *Id.* (citing *Neinast v. Bd. of Trs.*

of Columbus Metro. Library, 346 F.3d 585, 594 (6th Cir. 2003) (internal quotations omitted)).

When applying intermediate scrutiny to EO 2020-42, this Court must hold that EO 2020-42 does not violate Plaintiffs' Second Amendment rights. The State of Michigan, along with every state in this nation and almost every country across the globe, is faced with an unprecedented challenge in containing the outbreak of COVID-19. Absent State action, tens of thousands of Michiganders will die, and hundreds of thousands more will be sickened, many requiring hospitalization. This interest is certainly "significant, substantial, [and] important." *Tyler*, 837 F.3d at 693. And there is surely a "reasonable fit" between EO 2020-42's temporary restrictions—aimed at reducing the number of interactions between people and places to slow the spread of COVID-19—with the State's goal of reducing the impact COVID-19 will have on the healthcare industry and the health of Michiganders. *Id.* Under intermediate scrutiny, EO 2020-42 passes constitutional muster, and it does not violate Plaintiffs' Second Amendment rights.

And, even if the Court were to apply strict scrutiny, EO 2020-42 would pass muster for the same reasons articulated above.

3. Right of Association

The Supreme Court has recognized a "right of association," in certain circumstances. In *Roberts v. United States Jaycees*, 468 U.S. 609, 617–618 (1984), the Court noted two different sorts of "freedom of association" that are protected by the United States Constitution: one premised on the maintenance of certain intimate human relationships, and one premised on the right to engage in activities

protected by the First Amendment, “speech, assembly, petition for the redress of grievances, and the exercise of religion.”

Here, the “association” referenced in the Complaint – visiting the home of a relative – is not the sort of “intimate human relationship” referred to in *Roberts*.

Further, the Supreme Court has recognized that

[i]t is possible to find some kernel of expression in almost every activity a person undertakes—for example, walking down the street or meeting one’s friends at a shopping mall—but such a kernel is not sufficient to bring the activity within the protection of the First Amendment.

City of Dallas v. Stanglin, 490 U.S. 19, 25 (1989).

Therefore, the activities described in the complaint qualify neither as a form of “intimate association” nor as a form of “expressive association” as those terms were described in *Roberts*. And while the Supreme Court has recognized that the right of expressive association extends to groups organized to engage in speech that does not pertain directly to politics, *Griswold v. Connecticut*, 381 U.S. 479, 483 (1965), the Court has not recognized a generalized right of “social association” that includes the social activities described in the complaint in this case. *Stanglin*, 490 U.S. at 25.

Because no fundamental right is implicated, the “freedom of association” challenge in this case is analyzed under rational-basis scrutiny, which is the most relaxed and tolerant form of constitutional scrutiny. “The rational-basis standard is true to the principle that the Fourteenth Amendment gives the federal courts no power to impose upon the States their views of what constitutes wise economic or social policy.” *Dandridge v. Williams*, 397 U.S. 471, 485-486 (1970). “[I]t is only the

invidious discrimination, the wholly arbitrary act, which cannot stand consistently with the Fourteenth Amendment.” *New Orleans v. Dukes*, 427 U.S. 297, 303–304 (1976).

On rational basis review, the policy being challenged bears “a strong presumption of validity.” *F.C.C. v. Beach Commcn’s, Inc.*, 508 U.S. 307, 315 (1993). “This standard is highly deferential; courts hold statutes unconstitutional under this standard of review only in rare or exceptional circumstances.” *Doe v. Mich. Dep’t of State Police*, 490 F.3d 491, 501 (6th Cir. 2007)). “Under rational basis scrutiny,” the plaintiff bears the burden to show that the government action “is so unrelated to the achievement of any combination of legitimate purposes that the court can only conclude that the government’s actions were irrational.” *Michael v. Ghee*, 498 F.3d 372, 379 (6th Cir. 2007)).

Here, for the reasons already described at length above, the restriction on gatherings between persons from separate households is designed to limit the spread of the virus. There is an unquestionable rational basis for the restriction. Limiting contact between persons from separate households must be minimized and is constitutionally permissible under the circumstances.²¹

²¹ As previously noted, contrary to Plaintiffs’ assertions, EO 2020-42 does not prohibit using a private residence as a place for religious worship. Section 13 of EO 2020-42 exempts from enforcement “a place for religious worship, when used for religious worship.” This exemption from enforcement applies to religious worship held in a private residence.

4. Equal Protection

The Equal Protection Clause of the Fourteenth Amendment commands that no State shall “deny to any person within its jurisdiction the equal protection of the laws.” U.S. Const. Amend. XIV, § 1. The Supreme Court has stated that this language “embodies the general rule that States must treat like cases alike but may treat unlike cases accordingly.” *Vacco v. Quill*, 521 U.S. 793, 799 (1997). The States cannot make distinctions which either burden a fundamental right, target a suspect class, or intentionally treat one person differently from others similarly situated without any rational basis for the difference. *Id.*; *Village of Willowbrook v. Olech*, 528 U.S. 562, 564 (2000) (per curiam); *Radvansky v. City of Olmsted Falls*, 395 F.3d 291, 312 (6th Cir. 2005). When the disparate treatment burdens a fundamental right, strict scrutiny applies. *Bible Believers v. Wayne County*, 805 F.3d 228, 256 (6th Cir. 2015) (en banc); *Miller v. City of Cincinnati*, 622 F.3d 524, 538 (6th Cir. 2010). “The threshold element of an equal protection claim is disparate treatment.” *Scarborough v. Morgan Cty. Bd. of Educ.*, 470 F.3d 250, 260 (6th Cir. 2006).

In typical equal protection cases, plaintiffs generally allege that they have been arbitrarily classified as members of an identifiable group.” *Pers. Adm’r of Mass. v. Feeney*, 442 U.S. 256, 279 (1979). When the identifiable group has not been recognized as a suspect or quasi-suspect class, courts examine the classification under rational basis review. *See, e.g., Massachusetts Bd. of Ret. v. Murgia*, 427 U.S. 307, 312 (1976).

Here, Plaintiffs do not allege that they have been arbitrarily classified into a group that has been recognized as a suspect or quasi-suspect class. Further, EO 2020-42 contains generally applicable, temporary, and content-neutral measures. The rational basis supporting all of the challenged restrictions EO 2020-42 has been explained in detail in the preceding sections. Therefore, Plaintiffs' equal protection claims cannot be maintained as a matter of law.

5. Contract Clause

The Contracts Clause provides that “[n]o State shall . . . pass any . . . Law impairing the Obligation of Contracts.” U.S. Const. art. I § 10. The Sixth Circuit, however, has specifically held that an alleged Contracts Clause violation cannot give rise to a cause of action under 42 U.S.C. § 1983. *Kaminski v. Coulter*, 865 F.3d 339, 347 (6th Cir. 2017). Accordingly, Plaintiffs' have no likelihood of success on their Contract Clause claim.

All told, even under a traditional analysis of Plaintiffs' claims, the restrictions imposed in the Governor's Executive Order pass constitutional muster, and Plaintiffs are therefore not likely to succeed on the merits of their claims. On this basis, injunctive relief should be denied.

II. Plaintiffs have failed to establish irreparable injury

The second factor that a court must consider when deciding whether to issue a preliminary injunction is whether the plaintiff will suffer irreparable injury without the injunction. *Tumblebus, Inc. v. Cranmer*, 399 F.3d 754, 760 (6th Cir. 2005). “A plaintiff's harm from the denial of a preliminary injunction is irreparable if it is not fully compensable by monetary damages.” *Overstreet v. Lexington-*

Fayette Urban County Gov't, 305 F.3d 566, 578 (6th Cir. 2002). Courts have also held that a plaintiff can demonstrate that a denial of an injunction will cause irreparable harm if the claim is based upon a violation of the plaintiff's constitutional rights. *See, e.g., Connection Distrib. Co. v. Reno*, 154 F.3d 281, 288 (6th Cir. 1998) (recognizing that the loss of First Amendment rights, for even a minimal of time, constitutes irreparable harm) (citations omitted).

As demonstrated in the preceding sections, Plaintiffs' constitutional rights are not being violated. There is no other basis for irreparable harm asserted by the Plaintiffs. This factor favors Governor Whitmer.

III. The issuance of the injunction would cause harm to third parties and would not benefit the public interest

The third and fourth factors are similar—whether enforcement of the injunction will cause “substantial harm” to third parties, and whether it would serve the public interest. In regard to the fourth factor, the public interest “will not be as important as the other factors considered in the award of preliminary injunctive relief in actions involving only private interests, [but] it will be prominently considered in actions implicating government policy or regulation, or other matters of public concern.” 13 Moore's Federal Practice § 65.22 (Matthew Bender 3d. ed).

Here, issuing an injunction that precludes enforcement of any part of the Governor's Executive Order would harm third parties and would not benefit the public. The Executive Order was put in place after careful consideration of the unique nature of the threat facing Michigan and the advice of numerous individuals

and entities with unique expertise. A piecemeal lifting of restrictions by this Court, without regard to the State's carefully considered, deliberate, ongoing plan to combat the crisis and transition back to normalcy, increases the risk and potential harm to everyone. As a result, the third and fourth factors favor Governor Whitmer as well.

CONCLUSION AND RELIEF REQUESTED

Governor Whitmer respectfully requests this Court deny Plaintiffs' motion for temporary restraining order and preliminary injunction.

Respectfully submitted,

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Dated: April 23, 2020

CERTIFICATE OF SERVICE

I certify that on April 23, 2020, I electronically filed the foregoing papers with the Clerk of the Court using the ECF system, which will provide electronic copies to counsel of record, and I certify that my secretary has mailed by U.S. Postal Service the papers to any non-ECF participant.

/s/ Joseph T. Froehlich

Joseph T. Froehlich

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UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

HON. PAUL L. MALONEY

GRETCHEN WHITMER, in her
official capacity as Governor for the
State of Michigan, ALLEN
TELGENHOF, in his official
capacity as Charlevoix County
Prosecuting Attorney, BRIAN L.
MACKIE, in his official capacity
as Washtenaw County Prosecuting
Attorney, and WILLIAM J.
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MAG. PHILLIP J. GREEN

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EXHIBIT A

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Organization



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Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations

Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations

Scientific brief

29 March 2020

العربية

中文

Español



This version updates the 27 March publication by providing definitions of droplets by particle size and adding three relevant publications.

Modes of transmission of the COVID-19 virus

Respiratory infections can be transmitted through droplets of different sizes: when the droplet particles are $>5\text{-}10\ \mu\text{m}$ in diameter they are referred to as respiratory droplets, and when they are $<5\ \mu\text{m}$ in diameter, they are referred to as droplet nuclei.¹ According to current evidence, COVID-19 virus is primarily transmitted between people through respiratory droplets and contact routes.²⁻⁷ In an analysis of 75,465 COVID-19 cases in China, airborne transmission was not reported.⁸

Droplet transmission occurs when a person is in close contact (within 1 m) with someone who has respiratory symptoms (e.g., coughing or sneezing) and is therefore at risk of having his/her mucosae (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets. Transmission may also occur through fomites in the immediate environment around the infected person.⁸ Therefore,

transmission of the COVID-19 virus can occur by direct contact with infected people and indirect contact with surfaces in the immediate environment or with objects used on the infected person (e.g., stethoscope or thermometer).

Airborne transmission is different from droplet transmission as it refers to the presence of microbes within droplet nuclei, which are generally considered to be particles $<5\mu\text{m}$ in diameter, can remain in the air for long periods of time and be transmitted to others over distances greater than 1 m.

In the context of COVID-19, airborne transmission may be possible in specific circumstances and settings in which procedures or support treatments that generate aerosols are performed; i.e., endotracheal intubation, bronchoscopy, open suctioning, administration of nebulized treatment, manual ventilation before intubation, turning the patient to the prone position, disconnecting the patient from the ventilator, non-invasive positive-pressure ventilation, tracheostomy, and cardiopulmonary resuscitation.

There is some evidence that COVID-19 infection may lead to intestinal infection and be present in faeces. However, to date only one study has cultured the COVID-19 virus from a single stool specimen.⁹ There have been no reports of faecal–oral transmission of the COVID-19 virus to date.

Implications of recent findings of detection of COVID-19 virus from air sampling

To date, some scientific publications provide initial evidence on whether the COVID-19 virus can be detected in the air and thus, some news outlets have suggested that there has been airborne transmission. These initial findings need to be interpreted carefully.

A recent publication in the New England Journal of Medicine has evaluated virus persistence of the COVID-19 virus.¹⁰ In this experimental study, aerosols were generated using a three-jet Collison nebulizer and fed into a Goldberg drum under controlled laboratory conditions. This is a high-powered machine that does not reflect normal human cough conditions. Further, the finding of COVID-19 virus in aerosol particles up to 3 hours does not reflect a clinical setting in which aerosol-generating procedures are performed—that is, this was an experimentally induced aerosol-generating procedure.

There are reports from settings where symptomatic COVID-19 patients have been admitted and in which

no COVID-19 RNA was detected in air samples.¹¹⁻¹² WHO is aware of other studies which have evaluated the presence of COVID-19 RNA in air samples, but which are not yet published in peer-reviewed journals. It is important to note that the detection of RNA in environmental samples based on PCR-based assays is not indicative of viable virus that could be transmissible. Further studies are needed to determine whether it is possible to detect COVID-19 virus in air samples from patient rooms where no procedures or support treatments that generate aerosols are ongoing. As evidence emerges, it is important to know whether viable virus is found and what role it may play in transmission.

Conclusions

Based on the available evidence, including the recent publications mentioned above, WHO continues to recommend droplet and contact precautions for those people caring for COVID-19 patients. WHO continues to recommend airborne precautions for circumstances and settings in which aerosol generating procedures and support treatment are performed, according to risk assessment.¹³ These recommendations are consistent with other national and international guidelines, including those developed by the European Society of Intensive Care Medicine and Society of Critical Care Medicine¹⁴ and those currently used in Australia, Canada, and United Kingdom.¹⁵⁻¹⁷

At the same time, other countries and organizations, including the US Centers for Diseases Control and Prevention and the European Centre for Disease Prevention and Control, recommend airborne precautions for any situation involving the care of COVID-19 patients, and consider the use of medical masks as an acceptable option in case of shortages of respirators (N95, FFP2 or FFP3).¹⁸⁻¹⁹

Current WHO recommendations emphasize the importance of rational and appropriate use of all PPE,²⁰ not only masks, which requires correct and rigorous behavior from health care workers, particularly in doffing procedures and hand hygiene practices.²¹ WHO also recommends staff training on these recommendations,²² as well as the adequate procurement and availability of the necessary PPE and other supplies and facilities. Finally, WHO continues to emphasize the utmost importance of frequent hand hygiene, respiratory etiquette, and environmental cleaning and disinfection, as well as the importance of maintaining physical distances and avoidance of close, unprotected contact with people with fever or respiratory symptoms.

WHO carefully monitors emerging evidence about this critical topic and will update this scientific brief as more information becomes available.

References

1. World Health Organization. Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care. Geneva: World Health Organization; 2014 Available from: https://apps.who.int/iris/bitstream/handle/10665/112656/9789241507134_eng.pdf?sequence=1
2. Liu J, Liao X, Qian S et al. Community transmission of severe acute respiratory syndrome coronavirus 2, Shenzhen, China, 2020. *Emerg Infect Dis* 2020 doi.org/10.3201/eid2606.200239
3. Chan J, Yuan S, Kok K et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet* 2020 doi: 10.1016/S0140-6736(20)30154-9
4. Li Q, Guan X, Wu P, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med* 2020; doi:10.1056/NEJMoa2001316.
5. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; 395: 497–506.
6. Burke RM, Midgley CM, Dratch A, Fenstersheib M, Haupt T, Holshue M, et al. Active monitoring of persons exposed to patients with confirmed COVID-19 — United States, January–February 2020. *MMWR Morb Mortal Wkly Rep.* 2020 doi : 10.15585/mmwr.mm6909e1external icon
7. World Health Organization. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19) 16-24 February 2020 [Internet]. Geneva: World Health Organization; 2020 Available from: <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>
8. Ong SW, Tan YK, Chia PY, Lee TH, Ng OT, Wong MS, et al. Air, surface environmental, and personal protective equipment contamination by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from a symptomatic patient. *JAMA.* 2020 Mar 4 [Epub ahead of print].
9. Zhang Y, Chen C, Zhu S et al. [Isolation of 2019-nCoV from a stool specimen of a laboratory-confirmed case of the coronavirus disease 2019 (COVID-19)]. *China CDC Weekly.* 2020;2(8):123–4. (In Chinese)
10. van Doremalen N, Morris D, Bushmaker T et al. Aerosol and Surface Stability of SARS-CoV-2 as compared with SARS-CoV-1. *New Engl J Med* 2020 doi: 10.1056/NEJMc2004973
11. Cheng V, Wong S-C, Chen J, Yip C, Chuang V, Tsang O, et al. Escalating infection control response to the rapidly evolving epidemiology of the Coronavirus disease 2019 (COVID-19) due to SARS-CoV-2 in Hong Kong. *Infect Control Hosp Epidemiol.* 2020 Mar 5 [Epub ahead of print].

12. Ong SW, Tan YK, Chia PY, Lee TH, Ng OT, Wong MS, et al. Air, surface environmental, and personal protective equipment contamination by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from a symptomatic patient. JAMA. 2020
13. WHO Infection Prevention and Control Guidance for COVID-19 available at <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control>
14. Surviving Sepsis Campaign: Guidelines on the Management of Critically Ill Adults with Coronavirus Disease 2019 (COVID-19). Intensive Care Medicine DOI: 10.1007/s00134-020-06022-5 <https://www.sccm.org/SurvivingSepsisCampaign/Guidelines/COVID-19>
15. Interim guidelines for the clinical management of COVID-19 in adults Australasian Society for Infectious Diseases Limited (ASID) <https://www.asid.net.au/documents/item/1873>
16. Coronavirus disease (COVID-19): For health professionals. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals.html>
17. Guidance on infection prevention and control for COVID-19 <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>
18. Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings. <https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html>
19. Infection prevention and control for COVID-19 in healthcare settings <https://www.ecdc.europa.eu/en/publications-data/infection-prevention-and-control-covid-19-healthcare-settings>
20. Rational use of PPE for COVID-19. https://apps.who.int/iris/bitstream/handle/10665/331498/WHO-2019-nCoV-IPCPPE_use-2020.2-eng.pdf
21. Risk factors of Healthcare Workers with Corona Virus Disease 2019: A Retrospective Cohort Study in a Designated Hospital of Wuhan in China. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa287/5808788>
22. Infection Prevention and Control (IPC) for Novel Coronavirus (COVID-19) Course. <https://openwho.org/courses/COVID-19-IPC-EN>

WHO continues to monitor the situation closely for any changes that may affect this interim guidance. Should any factors change, WHO will issue a further update. Otherwise, this scientific brief will expire 2 years after the date of publication.

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WHO reference number: WHO/2019-nCoV/Sci_Brief/Transmission_modes/2020.2

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Modes of transmission of virus causing COVID-19



UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

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official capacity as Governor for the
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TELGENHOF, in his official
capacity as Charlevoix County
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EXHIBIT B

Coronavirus Disease 2019 (COVID-19)

Social Distancing



Keep Your Distance to Slow the Spread

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Limiting face-to-face contact with others is the best way to reduce the spread of coronavirus disease 2019 (COVID-19).

What is social distancing?

Social distancing, also called “physical distancing,” means keeping space between yourself and other people outside of your home. To practice social or physical distancing:

- Stay at least 6 feet (2 meters) from other people
- Do not gather in groups
- Stay out of crowded places and avoid mass gatherings

In addition to [everyday steps to prevent COVID-19](#), keeping space between you and others is one of the best tools we have to avoid being exposed to this virus and slowing its spread locally and across the country and world.

When COVID-19 is spreading in your area, everyone should limit close contact with individuals outside your household in indoor and outdoor spaces. Since people can spread the virus before they know they are sick, it is important to stay away from others when possible, even if you have no symptoms. Social distancing is especially important for [people who are at higher risk of getting very sick](#)



prolonged period. Spread happens when an infected person coughs, sneezes, or talks, and droplets from their mouth or nose are launched into the air and land in the mouths or noses of people nearby. The droplets can also be inhaled into the lungs. Recent studies indicate that people who are infected but do not have symptoms likely also play a role in the spread of COVID-19.

It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or eyes. However, this is not thought to be the main way the virus spreads. COVID-19 can live for hours or days on a surface, depending on factors such as sun light and humidity. Social distancing helps limit contact with infected people and contaminated surfaces.

Although the risk of severe illness may be different for everyone, anyone can get and spread COVID-19. Everyone has a role to play in slowing the spread and protecting themselves, their family, and their community.

Tips for social distancing

- Follow guidance from authorities where you live.
- If you need to shop for food or medicine at the grocery store or pharmacy, stay at least 6 feet away from others.
 - Use mail-order for medications, if possible.
 - Consider a grocery delivery service.
 - Cover your mouth and nose with a [cloth face cover](#) when around others, including when you have to go out in public, for example to the grocery store.
 - Stay at least 6 feet between yourself and others, even when you wear a face covering.
- Avoid large and small gatherings in private places and public spaces, such a friend's house, parks, restaurants, shops, or any other place. This advice applies to people of any age, including teens and younger adults. Children should not have in-person playdates while school is out. To help maintain social connections while social distancing, learn [tips to keep children healthy while school's out](#).
- Work from home when possible.
- If possible, avoid using any kind of public transportation, ridesharing, or taxis.
- If you are a student or parent, talk to your school about options for digital/distance learning.

Stay connected while staying away. It is very important to stay in touch with friends and family that don't live in your home. Call, video chat, or stay connected using social media. Everyone reacts differently to stressful situations and having to socially distance yourself from someone you love can be difficult. [Read tips for stress and coping.](#)

What is the difference between quarantine and isolation?

Quarantine

Quarantine is used to keep someone who might have been exposed to COVID-19 away from others. Someone in self-quarantine stays separated from others, and they limit movement outside of their home or current place. A person may have been exposed to the virus without knowing it (for example, when traveling or out in the community), or they could have the virus without feeling symptoms. Quarantine helps limit further spread of COVID-19.

Isolation

Isolation is used to separate sick people from healthy people. People who are in isolation should stay home. In the home, anyone sick should separate themselves from others by staying in a specific "sick" bedroom or space and using a different bathroom (if possible).

What should I do if I might have been exposed? If I feel sick? Or have confirmed COVID-19?

If you think you have been exposed to COVID-19, [read about symptoms.](#)

If you or someone in your home might have been exposed

Self-Monitor

Be alert for symptoms. Watch for fever,* cough, or shortness of breath.

- Take your temperature if symptoms develop.

- Practice social distancing. Maintain 6 feet of distance from others, and stay out of crowded places.
- Follow [CDC guidance](#) if symptoms develop.

If you feel healthy but:

- [Recently had close contact](#) with a person with COVID-19, or
- Recently [traveled](#) from somewhere outside the U.S. or on a cruise ship or river boat

Self-Quarantine

- Check your temperature twice a day and watch for symptoms.
- Stay home for 14 days and self-monitor.
- If possible, stay away from people who are [high-risk](#) for getting very sick from COVID-19.

If you:

- Have been diagnosed with COVID-19, or
- Are waiting for test results, or
- Have symptoms such as cough, fever, or shortness of breath

Self-Isolate

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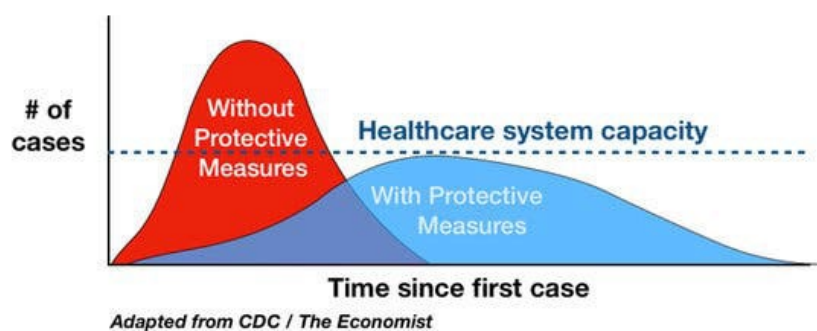
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Flattening the Coronavirus Curve

One chart explains why slowing the spread of the infection is nearly as important as stopping it.



The longer it takes for coronavirus to spread the population, the more time hospitals have to prepare. Drew Harris

By Siobhan Roberts

March 27, 2020

At the end of February, Drew Harris, a population health analyst at Thomas Jefferson University in Philadelphia, had just flown across the country to visit his daughter in Eugene, Ore., when he saw an article on his Google news feed. It was from [The Economist](#), and was about limiting the damage of the coronavirus.

The accompanying art, by the visual-data journalist Rosamund Pearce, based on a graphic that had appeared in a C.D.C. paper titled “[Community Mitigation Guidelines to Prevent Pandemic Influenza](#),” showed what Dr. Harris called two epi curves. One had a steep peak indicating a surge of coronavirus outbreak in the near term; the other had a flatter slope, indicating a more gradual rate of infection over a longer period of time.

The gentler curve results in fewer people infected at this critical moment in time — preventing a surge that would inundate the healthcare system and ultimately, one hopes, resulting in fewer deaths. “What we need to do is flatten that down,” said Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, during the coronavirus task force briefing at the White House on a Tuesday evening in early March. “You do that with trying to interfere with the natural flow of the outbreak.”

The infographic reminded Dr. Harris of something similar that he had designed years earlier for a pandemic preparedness training program. “Folks in the preparedness and public health community have been

thinking about all of these issues for many years,” Dr. Harris said in an email. “Understanding and managing surge is an important part of preparedness.” But during the training course, Dr. Harris’s students had struggled with the concept of reducing the epidemic curve, so he added a dotted line indicating hospital capacity — “to make clear what was at stake,” he said.

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After his visit with his daughter, Dr. Harris was waiting for his return flight in Portland when the first Oregon coronavirus case was [announced](#); he had dinner at a busy airport bar and thought about how quiet the place would be in a week or two when the reality of the outbreak set in. Once home, he recreated his graphic and posted it on [Twitter](#) and [LinkedIn](#), and was pleased to see the enthusiastic interest in flattening the curve.

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“Now I know what going viral means,” Dr. Harris said. (For a more detailed analysis, see a [recent paper](#) in The Lancet, “How will country-based mitigation measures influence the course of the COVID-19 epidemic?”)

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The following is an edited version of our email conversation.

What does it mean to “flatten the curve”?

The ideal goal in fighting an epidemic or pandemic is to completely halt the spread. But merely slowing it — mitigation — is critical. This reduces the number of cases that are active at any given time, which in turn gives doctors, hospitals, police, schools and vaccine-manufacturers time to prepare and respond, without becoming overwhelmed. Most hospitals can function with 10 percent reduction in staff, but not with half their people out at once.

Some commentators have argued for getting the outbreak over with quickly. That is a recipe for panic, unnecessary suffering and death. Slowing and spreading out the tidal wave of cases will save lives. Flattening the curve keeps society going.

What exactly do those two curves show?

Both curves add up the number of new cases over time. The more people reporting with the virus on a given day, the higher the curve; a high curve means the virus is spreading fast. A low curve shows that the virus is spreading slower — fewer people are diagnosed with the disease on any given day. Keeping the curve down — diminishing the rate at which new cases occur — prevents overtaxing the finite resources (represented by the dotted line) available to treat it.

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Think of the health care system capacity as a subway car that can only hold so many people at once. During rush hour, that capacity is not enough to handle the demand, so people must wait on the platform for their turn to ride. Staggering work hours diminishes the rush hour and increases the likelihood that you will get on the train and maybe even get a seat. Avoiding a surge of coronavirus cases can ensure that anyone who needs care will find it at the hospital.

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What sorts of mitigation measures help transform the red curve into the blue curve?

Diseases spread when one person gives it to one or more others, who go on to give it to more people, and so on. How fast this occurs depends on many factors, including how contagious the disease is, how many people are vulnerable and how quickly they get sick.

The difference between seasonal flu and coronavirus is that many people have full or partial immunity to the flu virus because they have had it before or were vaccinated against it. Far more people are vulnerable to coronavirus, so it has many more targets of opportunity to spread. Keeping people apart in time and space with social distancing measures, self-isolation and actual quarantine decreases opportunities for transmission.

To take the subway example again, a packed car — or a packed subway platform — is a great place to spread the virus. But reducing the number of people on the train or platform, by asking people to work from home or to stagger their working hours, enables individuals to stay farther apart, limiting the spread of the virus. That is social distancing in action.

Mitigation efforts keep people farther apart, making every transmission opportunity marginally less likely. This slows the spread. We should, and will, take the most vulnerable people out of the population altogether by keeping them totally separate. This is what Washington State is trying to do by limiting visitors to nursing homes. Think of this as a reverse quarantine.

What are you doing day-to-day in response to these unusual times?

Like most everyone else, I'm more aware of my surroundings and behaviors. I try to use a sleeve or elbow to open doors, and I wash my hands or use hand sanitizers after I touch a surface that might be contaminated. And I made sure to have a good supply of my prescription and nonprescription medications, just in case any shortages occur after the shutdown of Chinese pharmaceutical suppliers. I'm following the lead of my public health officials here in Philadelphia, where there is only one case as of Tuesday, and travel isn't restricted. I'm avoiding crowds and sick people. I am going out, and will continue to do so unless a quarantine is ordered or public places are closed.

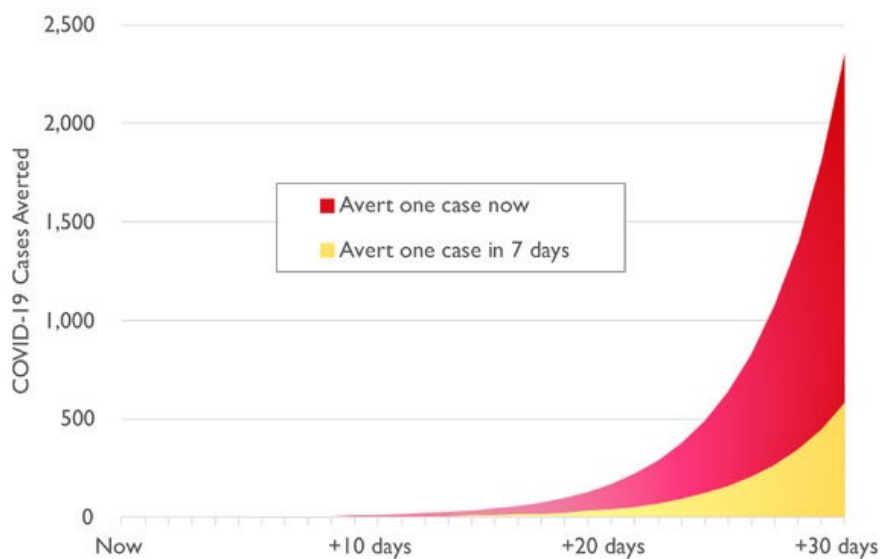
I know there is a good chance that I will catch the virus before a vaccine becomes available, but I also believe I'm very likely to do fine. I'm not in any high-risk group. But I worry about the more vulnerable folks and want

to do what I can to prevent the spread. I also worry about people who lack the resources I have. What happens to the self-employed, hourly workers and people in the gig economy when business stops? What about the homeless who depend upon charity and services for support? It's these second-order effects that could be just as devastating if this epidemic really takes off.

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March 5, 2020

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EXHIBIT D



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

GARLIN GILCHRIST II
LT. GOVERNOR

EXECUTIVE ORDER

No. 2020-4

Declaration of State of Emergency

The novel coronavirus (COVID-19) is a respiratory disease that can result in serious illness or death. It is caused by a new strain of coronavirus that had not been previously identified in humans and can easily spread from person to person.

COVID-19 has been identified as the cause of an outbreak of respiratory illness first detected in Wuhan City in the Hubei Province of China. Person-to-person spread of the virus has occurred in the United States, with some of those occurring in people with no travel history and no known source of exposure. On January 31, 2020, the United States Department of Health and Human Services Secretary Alex Azar declared a public health emergency for COVID-19, and affected state and local governments have also declared states of emergency.

The State of Michigan has been taking proactive steps to prevent and prepare for the spread of this disease. On February 3, 2020, the Michigan Department of Health and Human Services (MDHHS) activated the Community Health Emergency Coordination Center, and has been working diligently with local health departments, health systems, and medical providers throughout Michigan to make sure appropriate screening and preparations for COVID-19 are being made. On February 28, 2020, I activated the State Emergency Operations Center to maximize coordination with state, local and federal agencies, as well as private partners, and to help prevent the spread of the disease. On March 3, 2020, I created four task forces comprising key state government agencies to coordinate the state's response and work closely with the appropriate community and non-governmental stakeholders to combat the spread of COVID-19 and assess the impact it may have on Michiganders' day-to-day lives. And throughout this time, the State has been working with schools, businesses, medical providers, local health departments, and residents to make sure they have the information they need to prepare for potential cases.

On March 10, 2020, MDHHS identified the first two presumptive-positive cases of COVID-19 in Michigan.

Section 1 of article 5 of the Michigan Constitution of 1963 vests the executive power of the State of Michigan in the governor.

SENATE ENROLLING
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The Emergency Management Act, 1976 PA 390, as amended, MCL 30.403(4), provides that “[t]he governor shall, by executive order or proclamation, declare a state of emergency if he or she finds that an emergency has occurred or that the threat of an emergency exists.”


The Emergency Powers of the Governor Act of 1945, 1945 PA 302, as amended, MCL 10.31(1), provides that “[d]uring times of great public crisis, disaster, rioting, catastrophe, or similar public emergency within the state, or reasonable apprehension of immediate danger of a public emergency of that kind, . . . the governor may proclaim a state of emergency and designate the area involved.”

Acting under the Michigan Constitution of 1963 and Michigan law, I order the following:

1. A state of emergency is declared across the State of Michigan.
2. The Emergency Management and Homeland Security Division of the Department of State Police must coordinate and maximize all state efforts that may be activated to state service to assist local governments and officials and may call upon all state departments to utilize available resources to assist.
3. The state of emergency is terminated when emergency conditions no longer exist and appropriate programs have been implemented to recover from any effects of the emergency conditions, consistent with the legal authorities upon which this declaration is based and any limits on duration imposed by those authorities.

Given under my hand and the Great Seal of the State of Michigan.

Date: March 10, 2020



 GRETCHEN WHITMER
 GOVERNOR

By the Governor:



 SECRETARY OF STATE



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EXHIBIT E



GRETCHEN WHITMER
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STATE OF MICHIGAN
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EXECUTIVE ORDER

No. 2020-5

Temporary prohibition on large assemblages and events, temporary school closures

The novel coronavirus (COVID-19) is a respiratory disease that can result in serious illness or death. It is caused by a new strain of coronavirus not previously identified in humans and easily spread from person to person. There is currently no approved vaccine or antiviral treatment for this disease.

On March 10, 2020, the Michigan Department of Health and Human Services identified the first two presumptive-positive cases of COVID-19 in Michigan. On that same day, I issued Executive Order 2020-4. This order declared a state of emergency across the state of Michigan under section 1 of article 5 of the Michigan Constitution of 1963, the Emergency Management Act, 1976 PA 390, as amended, MCL 30.401-.421, and the Emergency Powers of the Governor Act of 1945, 1945 PA 302, as amended, MCL 10.31-.33.

The Emergency Management Act vests the governor with broad powers and duties to “cop[e] with dangers to this state or the people of this state presented by a disaster or emergency,” which the governor may implement through “executive orders, proclamations, and directives having the force and effect of law.” MCL 30.403(1)-(2). Similarly, the Emergency Powers of the Governor Act of 1945, provides that, after declaring a state of emergency, “the governor may promulgate reasonable orders, rules, and regulations as he or she considers necessary to protect life and property or to bring the emergency situation within the affected area under control.” MCL 10.31(1).

To mitigate the spread of COVID-19 and to provide essential protections to vulnerable Michiganders and this state’s health care system and other critical infrastructure, it is reasonable and necessary to impose limited and temporary restrictions on large events and assemblages of people.

Acting under the Michigan Constitution of 1963 and Michigan law, I order the following:

1. Beginning on March 13, 2020 at 5:00 pm, and continuing through April 5, 2020 at 5:00 pm, all assemblages of more than 250 people in a single shared space and all events of more than 250 people are prohibited in this state, except for assemblages for the purpose of: industrial or manufacturing work; mass transit; or the purchase

of groceries or consumer goods. A single shared space includes but is not limited to a room, hall, cafeteria, auditorium, theater, or gallery. This prohibition does not abridge protections guaranteed by the state or federal constitution under these emergency circumstances.

2. Beginning on March 16, 2020, all elementary school buildings and secondary school buildings in this state must close to students for educational purposes through April 5, 2020. This requirement includes all public, nonpublic, and boarding schools in the state. This requirement does not apply to residential facilities at schools and childcare providers at schools.
3. Consistent with MCL 10.33 and MCL 30.405(3), a willful violation of this order shall constitute a misdemeanor.

Given under my hand and the Great Seal of the State of Michigan.

Date: March 13, 2020



 GRETCHEN WHITMER
 GOVERNOR

By the Governor:





 JOCELYN BENSON
 SECRETARY OF STATE

SECRETARY OF SENATE
2020 MAR 13 AM 11:43

FILED WITH SECRETARY OF STATE
 ON 3/13/20 AT 11:14 A.M.

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

HON. PAUL L. MALONEY

GRETCHEN WHITMER, in her
official capacity as Governor for the
State of Michigan, ALLEN
TELGENHOF, in his official
capacity as Charlevoix County
Prosecuting Attorney, BRIAN L.
MACKIE, in his official capacity
as Washtenaw County Prosecuting
Attorney, and WILLIAM J.
VAILLIENCOURT, JR., in his
official capacity as Livingston
County Prosecuting Attorney,

MAG. PHILLIP J. GREEN

Defendants.

Robert J. Muise (P62849)
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Joshua Booth (P53847)
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EXHIBIT F



STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

GRETCHEN WHITMER
GOVERNOR

GARLIN GILCHRIST II
LT. GOVERNOR

EXECUTIVE ORDER

No. 2020-9

Temporary restrictions on the use of places of public accommodation

The novel coronavirus (COVID-19) is a respiratory disease that can result in serious illness or death. It is caused by a new strain of coronavirus not previously identified in humans and easily spread from person to person. There is currently no approved vaccine or antiviral treatment for this disease.

On March 10, 2020, the Michigan Department of Health and Human Services identified the first two presumptive-positive cases of COVID-19 in Michigan. On that same day, I issued Executive Order 2020-4. This order declared a state of emergency across the state of Michigan under section 1 of article 5 of the Michigan Constitution of 1963, the Emergency Management Act, 1976 PA 390, as amended, MCL 30.401-.421, and the Emergency Powers of the Governor Act of 1945, 1945 PA 302, as amended, MCL 10.31-.33.

The Emergency Management Act vests the governor with broad powers and duties to “cop[e] with dangers to this state or the people of this state presented by a disaster or emergency,” which the governor may implement through “executive orders, proclamations, and directives having the force and effect of law.” MCL 30.403(1)-(2). Similarly, the Emergency Powers of the Governor Act of 1945, provides that, after declaring a state of emergency, “the governor may promulgate reasonable orders, rules, and regulations as he or she considers necessary to protect life and property or to bring the emergency situation within the affected area under control.” MCL 10.31(1).

To mitigate the spread of COVID-19, protect the public health, and provide essential protections to vulnerable Michiganders, it is reasonable and necessary to impose limited and temporary restrictions on the use of places of public accommodation.

Acting under the Michigan Constitution of 1963 and Michigan law, I order the following:

1. Beginning as soon as possible but no later than March 16, 2020 at 3:00 pm, and continuing until March 30, 2020 at 11:59 pm, the following places of public accommodation are closed to ingress, egress, use, and occupancy by members of the public:
 - (a) Restaurants, food courts, cafes, coffeehouses, and other places of public accommodation offering food or beverage for on-premises consumption;

- (b) Bars, taverns, brew pubs, breweries, microbreweries, distilleries, wineries, tasting rooms, special licensees, clubs, and other places of public accommodation offering alcoholic beverages for on-premises consumption;
- (c) Hookah bars, cigar bars, and vaping lounges offering their products for on-premises consumption;
- (d) Theaters, cinemas, and indoor and outdoor performance venues;
- (e) Libraries and museums;
- (f) Gymnasiums, fitness centers, recreation centers, indoor sports facilities, indoor exercise facilities, exercise studios, and spas;
- (g) Casinos licensed by the Michigan Gaming Control Board, racetracks licensed by the Michigan Gaming Control Board, and Millionaire Parties licensed by the Michigan Gaming Control Board; and
- (h) Places of public amusement not otherwise listed above.

Places of public accommodation subject to this section are encouraged to offer food and beverage using delivery service, window service, walk-up service, drive-through service, or drive-up service, and to use precautions in doing so to mitigate the potential transmission of COVID-19, including social distancing. In offering food or beverage, a place of public accommodation subject to this section may permit up to five members of the public at one time in the place of public accommodation for the purpose of picking up their food or beverage orders, so long as those individuals are at least six feet apart from one another while on premises.

This section does not prohibit an employee, contractor, vendor, or supplier of a place of public accommodation from entering, exiting, using, or occupying that place of public accommodation in their professional capacity.

2. The restrictions imposed by this order do not apply to any of the following:
 - (a) Places of public accommodation that offer food and beverage not for on-premises consumption, including grocery stores, markets, convenience stores, pharmacies, drug stores, and food pantries, other than those portions of the place of public accommodation subject to the requirements of section 1;
 - (b) Health care facilities, residential care facilities, congregate care facilities, and juvenile justice facilities;
 - (c) Crisis shelters or similar institutions; and
 - (d) Food courts inside the secured zones of airports.
3. For purposes of this order:

(a) "Place of public accommodation" means a business, or an educational, refreshment, entertainment, or recreation facility, or an institution of any kind, whether licensed or not, whose goods, services, facilities, privileges, advantages, or accommodations are extended, offered, sold, or otherwise made available to the public. Place of public accommodation also includes the facilities of private clubs, including country clubs, golf clubs, boating or yachting clubs, sports or athletic clubs, and dining clubs.

(b) "Place of public amusement" means a place of public accommodation that offers indoor services or facilities, or outdoor services or facilities involving close contact of persons, for amusement or other recreational or entertainment purposes. A place of public amusement includes an amusement park, arcade, bingo hall, bowling alley, indoor climbing facility, skating rink, trampoline park, and other similar recreational or entertainment facilities.

4. The director of the Department of Health and Human Services, the Michigan Liquor Control Commission, and the executive director of the Michigan Gaming Control Board must issue orders and directives and take other actions pursuant to law as necessary to implement this order.
5. This order does not alter any of the obligations under law of an employer affected by this order to its employees or to the employees of another employer.
6. Consistent with MCL 10.33 and MCL 30.405(3), a willful violation of this order is a misdemeanor.

Given under my hand and the Great Seal of the State of Michigan.



GRETCHEN WHITMER
GOVERNOR

Date: March 16, 2020

By the Governor:


SECRETARY OF STATE

SECRETARY OF SENATE
2020 MAR 16 PM1:38

SECRETARY OF SENATE
2020 MAR 16 PM1:38

FILED WITH SECRETARY OF STATE

ON 3/16/20 AT 1:10 P.M.

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

HON. PAUL L. MALONEY

GRETCHEN WHITMER, in her
official capacity as Governor for the
State of Michigan, ALLEN
TELGENHOF, in his official
capacity as Charlevoix County
Prosecuting Attorney, BRIAN L.
MACKIE, in his official capacity
as Washtenaw County Prosecuting
Attorney, and WILLIAM J.
VAILLIENCOURT, JR., in his
official capacity as Livingston
County Prosecuting Attorney,

MAG. PHILLIP J. GREEN

Defendants.

Robert J. Muise (P62849)
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Joseph T. Froehlich (P71887)
Joshua Booth (P53847)
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Michigan Dep't of Attorney General
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EXHIBIT G



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

GARLIN GILCHRIST II
LT. GOVERNOR

EXECUTIVE ORDER

No. 2020-11

Temporary prohibition on large assemblages and events, temporary school closures

Rescission of Executive Order 2020-5

The novel coronavirus (COVID-19) is a respiratory disease that can result in serious illness or death. It is caused by a new strain of coronavirus not previously identified in humans and easily spread from person to person. There is currently no approved vaccine or antiviral treatment for this disease.

On March 10, 2020, the Michigan Department of Health and Human Services identified the first two presumptive-positive cases of COVID-19 in Michigan. On that same day, I issued Executive Order 2020-4. This order declared a state of emergency across the state of Michigan under section 1 of article 5 of the Michigan Constitution of 1963, the Emergency Management Act, 1976 PA 390, as amended, MCL 30.401-.421, and the Emergency Powers of the Governor Act of 1945, 1945 PA 302, as amended, MCL 10.31-.33.

The Emergency Management Act vests the governor with broad powers and duties to “cop[e] with dangers to this state or the people of this state presented by a disaster or emergency,” which the governor may implement through “executive orders, proclamations, and directives having the force and effect of law.” MCL 30.403(1)-(2). Similarly, the Emergency Powers of the Governor Act of 1945, provides that, after declaring a state of emergency, “the governor may promulgate reasonable orders, rules, and regulations as he or she considers necessary to protect life and property or to bring the emergency situation within the affected area under control.” MCL 10.31(1).

To mitigate the spread of COVID-19 and to provide essential protections to vulnerable Michiganders and this state’s health care system and other critical infrastructure, it is reasonable and necessary to impose limited and temporary restrictions on large events and assemblages of people.

Executive Order 2020-5 imposed such restrictions. This order changes the temporary restrictions imposed on events and assemblages by Executive Order 2020-5, in light of the most recent guidance from the Centers for Disease Control and Prevention. This order does not change the scope of temporary restrictions imposed by Executive Order 2020-5 as to the closure of elementary school buildings and secondary school buildings. When the new restrictions set forth in this order take effect, Executive Order 2020-5 is rescinded.

While this order continues to permit certain assemblages and events, these assemblages and events should only occur as necessary and in adherence with the measures needed to mitigate the potential transmission of COVID-19, including social distancing, proper hand hygiene and respiratory etiquette, and using electronic communication platforms in lieu of in-person interaction as feasible.

Acting under the Michigan Constitution of 1963 and Michigan law, I order the following:

1. Beginning on March 17, 2020 at 9:00 am, and continuing through April 5, 2020 at 5:00 pm, all assemblages of more than 50 people in a single indoor shared space and all events of more than 50 people are prohibited in this state. A single indoor shared space includes but is not limited to a room, hall, cafeteria, auditorium, theater, or gallery. The prohibition on assemblages set forth in this section does not apply to:
 - (a) health care facilities;
 - (b) workplaces or portions thereof not open to the public;
 - (c) the state legislature; and
 - (d) assemblages for the purpose of mass transit, the purchase of groceries or consumer goods, or the performance of agricultural or construction work.

The prohibition set forth in this section does not abridge protections guaranteed by the state or federal constitution under these emergency circumstances.

2. Beginning on March 16, 2020, all elementary school buildings and secondary school buildings in this state must close to students for educational purposes through April 5, 2020. This requirement includes all public, nonpublic, and boarding schools in the state. This requirement does not apply to residential facilities at schools and childcare providers at schools.
3. Consistent with MCL 10.33 and MCL 30.405(3), a willful violation of this order shall constitute a misdemeanor.
4. On March 17, 2020 at 9:00 am, Executive Order 2020-5 is rescinded.

Given under my hand and the Great Seal of the State of Michigan.

Date: March 16, 2020

Time: 6:07 pm



GRETCHEN WHITMER
GOVERNOR

By the Governor:



SECRETARY OF STATE



SECRETARY OF SENATE
2020 MAR 17 AM 10:47

FILED WITH SECRETARY OF STATE

ON 3/17/20 AT 10:22 A.M.

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

HON. PAUL L. MALONEY

GRETCHEN WHITMER, in her
official capacity as Governor for the
State of Michigan, ALLEN
TELGENHOF, in his official
capacity as Charlevoix County
Prosecuting Attorney, BRIAN L.
MACKIE, in his official capacity
as Washtenaw County Prosecuting
Attorney, and WILLIAM J.
VAILLIENCOURT, JR., in his
official capacity as Livingston
County Prosecuting Attorney,

MAG. PHILLIP J. GREEN

Defendants.

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EXHIBIT H



STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

GRETCHEN WHITMER
GOVERNOR

GARLIN GILCHRIST II
LT. GOVERNOR

EXECUTIVE ORDER

No. 2020-21

**Temporary requirement to suspend activities that
are not necessary to sustain or protect life**

The novel coronavirus (COVID-19) is a respiratory disease that can result in serious illness or death. It is caused by a new strain of coronavirus not previously identified in humans and easily spread from person to person. Older adults and those with chronic health conditions are at particular risk, and there is an increased risk of rapid spread of COVID-19 among persons in close proximity to one another. There is currently no approved vaccine or antiviral treatment for this disease.

On March 10, 2020, the Michigan Department of Health and Human Services identified the first two presumptive-positive cases of COVID-19 in Michigan. On that same day, I issued Executive Order 2020-4. This order declared a state of emergency across the state of Michigan under section 1 of article 5 of the Michigan Constitution of 1963, the Emergency Management Act, 1976 PA 390, as amended, MCL 30.401-.421, and the Emergency Powers of the Governor Act of 1945, 1945 PA 302, as amended, MCL 10.31-.33.

The Emergency Management Act vests the governor with broad powers and duties to “cop[e] with dangers to this state or the people of this state presented by a disaster or emergency,” which the governor may implement through “executive orders, proclamations, and directives having the force and effect of law.” MCL 30.403(1)-(2). Similarly, the Emergency Powers of the Governor Act of 1945, provides that, after declaring a state of emergency, “the governor may promulgate reasonable orders, rules, and regulations as he or she considers necessary to protect life and property or to bring the emergency situation within the affected area under control.” MCL 10.31(1).

To suppress the spread of COVID-19, to prevent the state’s health care system from being overwhelmed, to allow time for the production of critical test kits, ventilators, and personal protective equipment, and to avoid needless deaths, it is reasonable and necessary to direct residents to remain at home or in their place of residence to the maximum extent feasible.

This order takes effect on March 24, 2020 at 12:01 am, and continues through April 13, 2020 at 11:59 pm.

Acting under the Michigan Constitution of 1963 and Michigan law, I order the following:

1. This order must be construed broadly to prohibit in-person work that is not necessary to sustain or protect life.
2. Subject to the exceptions in section 7, all individuals currently living within the State of Michigan are ordered to stay at home or at their place of residence. Subject to the same exceptions, all public and private gatherings of any number of people occurring among persons not part of a single household are prohibited.
3. All individuals who leave their home or place of residence must adhere to social distancing measures recommended by the Centers for Disease Control and Prevention, including remaining at least six feet from people from outside the individual's household to the extent feasible under the circumstances.
4. No person or entity shall operate a business or conduct operations that require workers to leave their homes or places of residence except to the extent that those workers are necessary to sustain or protect life or to conduct minimum basic operations.
 - (a) For purposes of this order, workers who are necessary to sustain or protect life are defined as "critical infrastructure workers," as described in sections 8 and 9.
 - (b) For purposes of this order, workers who are necessary to conduct minimum basic operations are those whose in-person presence is strictly necessary to allow the business or operation to maintain the value of inventory and equipment, care for animals, ensure security, process transactions (including payroll and employee benefits), or facilitate the ability of other workers to work remotely.

Businesses and operations must determine which of their workers are necessary to conduct minimum basic operations and inform such workers of that designation. Businesses and operations must make such designations in writing, whether by electronic message, public website, or other appropriate means. Such designations, however, may be made orally until March 31, 2020 at 11:59 pm.

5. Businesses and operations that employ critical infrastructure workers may continue in-person operations, subject to the following conditions:
 - (a) Consistent with sections 8 and 9, businesses and operations must determine which of their workers are critical infrastructure workers and inform such workers of that designation. Businesses and operations must make such designations in writing, whether by electronic message, public website, or other appropriate means. Such designations, however, may be made orally until March 31, 2020 at 11:59 pm. Businesses and operations need not designate:

- (1) Workers in health care and public health.
 - (2) Workers who perform necessary government activities, as described in section 6.
 - (3) Workers and volunteers described in section 9(d).
- (b) In-person activities that are not necessary to sustain or protect life must be suspended until normal operations resume.
- (c) Businesses and operations maintaining in-person activities must adopt social distancing practices and other mitigation measures to protect workers and patrons. Those practices and measures include, but are not limited to:
- (1) Restricting the number of workers present on premises to no more than is strictly necessary to perform the business's or operation's critical infrastructure functions.
 - (2) Promoting remote work to the fullest extent possible.
 - (3) Keeping workers and patrons who are on premises at least six feet from one another to the maximum extent possible, including for customers who are standing in line.
 - (4) Increasing standards of facility cleaning and disinfection to limit worker and patron exposure to COVID-19, as well as adopting protocols to clean and disinfect in the event of a positive COVID-19 case in the workplace.
 - (5) Adopting policies to prevent workers from entering the premises if they display respiratory symptoms or have had contact with a person who is known or suspected to have COVID-19.
 - (6) Any other social distancing practices and mitigation measures recommended by the Centers for Disease Control.
6. All in-person government activities at whatever level (state, county, or local) that are not necessary to sustain or protect life, or to supporting those businesses and operations that are necessary to sustain or protect life, are suspended.
- (a) For purposes of this order, necessary government activities include activities performed by critical infrastructure workers, including workers in law enforcement, public safety, and first responders.
 - (b) Such activities also include, but are not limited to, public transit, trash pick-up and disposal, activities necessary to manage and oversee elections, operations necessary to enable transactions that support the work of a business's or operation's critical infrastructure workers, and the maintenance of safe and sanitary public parks so as to allow for outdoor recreation.

- (c) For purposes of this order, necessary government activities include minimum basic operations, as described in section 4(b). Workers performing such activities need not be designated.
- (d) Any in-person government activities must be performed consistently with the social distancing practices and other mitigation measures to protect workers and patrons described in section 5(c).

7. Exceptions.

- (a) Individuals may leave their home or place of residence, and travel as necessary:
 - (1) To engage in outdoor activity, including walking, hiking, running, cycling, or any other recreational activity consistent with remaining at least six feet from people from outside the individual's household.
 - (2) To perform their jobs as critical infrastructure workers after being so designated by their employers. (Critical infrastructure workers who need not be designated under section 5(a) may leave their home for work without a designation.)
 - (3) To conduct minimum basic operations, as described in section 4(b), after being designated to perform such work by their employers.
 - (4) To perform necessary government activities, as described in section 6.
 - (5) To perform tasks that are necessary to their health and safety, or to the health and safety of their family or household members (including pets). Individuals may, for example, leave the home or place of residence to secure medication or to seek medical or dental care that is necessary to address a medical emergency or to preserve the health and safety of a household or family member (including procedures that, in accordance with a duly implemented nonessential procedures postponement plan, have not been postponed).
 - (6) To obtain necessary services or supplies for themselves, their family or household members, and their vehicles. *Individuals must secure such services or supplies via delivery to the maximum extent possible.* As needed, however, individuals may leave the home or place of residence to purchase groceries, take-out food, gasoline, needed medical supplies, and any other products necessary to maintain the safety, sanitation, and basic operation of their residences.
 - (7) To care for a family member or a family member's pet in another household.

- (8) To care for minors, dependents, the elderly, persons with disabilities, or other vulnerable persons.
 - (9) To visit an individual under the care of a health care facility, residential care facility, or congregate care facility, to the extent otherwise permitted.
 - (10) To attend legal proceedings or hearings for essential or emergency purposes as ordered by a court.
 - (11) To work or volunteer for businesses or operations (including both and religious and secular nonprofit organizations) that provide food, shelter, and other necessities of life for economically disadvantaged or otherwise needy individuals, individuals who need assistance as a result of this emergency, and people with disabilities.
- (b) Individuals may also travel:
- (1) To return to a home or place of residence from outside this state.
 - (2) To leave this state for a home or residence elsewhere.
 - (3) To travel between two residences in this state.
 - (4) As required by law enforcement or a court order, including the transportation of children pursuant to a custody agreement.
8. For purposes of this order, critical infrastructure workers are those workers described by the Director of the U.S. Cybersecurity and Infrastructure Security Agency in his guidance of March 19, 2020 on the COVID-19 response (available [here](#)). Such workers include some workers in each of the following sectors:
- (a) Health care and public health.
 - (b) Law enforcement, public safety, and first responders.
 - (c) Food and agriculture.
 - (d) Energy.
 - (e) Water and wastewater.
 - (f) Transportation and logistics.
 - (g) Public works.
 - (h) Communications and information technology, including news media.
 - (i) Other community-based government operations and essential functions.

- (j) Critical manufacturing.
- (k) Hazardous materials.
- (l) Financial services.
- (m) Chemical supply chains and safety.
- (n) Defense industrial base.

9. For purposes of this order, critical infrastructure workers also include:

- (a) Child care workers (including workers at disaster relief child care centers), but only to the extent necessary to serve the children or dependents of critical infrastructure workers as defined in this order. This category includes individuals (whether licensed or not) who have arranged to care for the children or dependents of critical infrastructure workers.
- (b) Workers at designated suppliers and distribution centers, as described below.
 - (1) A business or operation that employs critical infrastructure workers may designate suppliers, distribution centers, or service providers whose continued operation is necessary to enable, support, or facilitate the work of its critical infrastructure workers.
 - (2) Such suppliers, distribution centers, or service providers may designate workers as critical infrastructure workers *only* to the extent those workers are necessary to enable, support, or facilitate the work of the original operation's or business's critical infrastructure workers.
 - (3) Designated suppliers, distribution centers, and service providers may in turn designate additional suppliers, distribution centers, and service providers whose continued operation is necessary to enable, support, or facilitate the work of their critical infrastructure workers.
 - (4) Such additional suppliers, distribution centers, and service providers may designate workers as critical infrastructure workers *only* to the extent that those workers are necessary to enable, support, or facilitate the work of the critical infrastructure workers at the supplier, distribution center, or service provider that has designated them.
 - (5) Businesses, operations, suppliers, distribution centers, and service providers must make all designations in writing to the entities they are designating, whether by electronic message, public website, or other appropriate means. Such designations may be made orally until March 31, 2020 at 11:59 pm.

- (6) Businesses, operations, suppliers, distribution centers, and service providers that abuse their designation authority shall be subject to sanctions to the fullest extent of the law.
 - (c) Workers in the insurance industry, but only to the extent that their work cannot be done by telephone or remotely.
 - (d) Workers and volunteers for businesses or operations (including both and religious and secular nonprofit organizations) that provide food, shelter, and other necessities of life for economically disadvantaged or otherwise needy individuals, individuals who need assistance as a result of this emergency, and people with disabilities.
 - (e) Workers who perform critical labor union functions, including those who administer health and welfare funds and those who monitor the well-being and safety of union members who are critical infrastructure workers, provided that any administration or monitoring should be done by telephone or remotely where possible.
10. Nothing in this order should be taken to supersede another executive order or directive that is in effect, except to the extent this order imposes more stringent limitations on in-person work, activities, and interactions. Consistent with prior guidance, a place of religious worship, when used for religious worship, is not subject to penalty under section 14.
 11. Nothing in this order should be taken to interfere with or infringe on the powers of the legislative and judicial branches to perform their constitutional duties or exercise their authority.
 12. This order takes effect on March 24, 2020 at 12:01 am, and continues through April 13, 2020 at 11:59 pm.
 13. The governor will evaluate the continuing need for this order prior to its expiration. In determining whether to maintain, intensify, or relax its restrictions, she will consider, among other things, (1) data on COVID-19 infections and the disease's rate of spread; (2) whether sufficient medical personnel, hospital beds, and ventilators exist to meet anticipated medical need; (3) the availability of personal protective equipment for the health-care workforce; (4) the state's capacity to test for COVID-19 cases and isolate infected people; and (5) economic conditions in the state.
 14. Consistent with MCL 10.33 and MCL 30.405(3), a willful violation of this order is a misdemeanor.

Given under my hand and the Great Seal of the State of Michigan.

Date: March 23, 2020

Time: 10:39 am



GRETCHEN WHITMER
GOVERNOR

By the Governor:



SECRETARY OF STATE



FILED WITH SECRETARY OF STATE

ON 3/23/2020 AT 11:51 Am

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

HON. PAUL L. MALONEY

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EXHIBIT I



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

GARLIN GILCHRIST II
LT. GOVERNOR

EXECUTIVE ORDER

No. 2020-42

**Temporary requirement to suspend activities that
are not necessary to sustain or protect life**

Rescission of Executive Order 2020-21

The novel coronavirus (COVID-19) is a respiratory disease that can result in serious illness or death. It is caused by a new strain of coronavirus not previously identified in humans and easily spread from person to person. There is currently no approved vaccine or antiviral treatment for this disease.

On March 10, 2020, the Michigan Department of Health and Human Services identified the first two presumptive-positive cases of COVID-19 in Michigan. On that same day, I issued Executive Order 2020-4. This order declared a state of emergency across the state of Michigan under section 1 of article 5 of the Michigan Constitution of 1963, the Emergency Management Act, 1976 PA 390, as amended, MCL 30.401 et seq., and the Emergency Powers of the Governor Act of 1945, 1945 PA 302, as amended, MCL 10.31 et seq.

In the three weeks that followed, the virus spread across Michigan, bringing deaths in the hundreds, confirmed cases in the thousands, and deep disruption to this state's economy, homes, and educational, civic, social, and religious institutions. On April 1, 2020, in response to the widespread and severe health, economic, and social harms posed by the COVID-19 pandemic, I issued Executive Order 2020-33. This order expanded on Executive Order 2020-4 and declared both a state of emergency and a state of disaster across the State of Michigan under section 1 of article 5 of the Michigan Constitution of 1963, the Emergency Management Act, and the Emergency Powers of the Governor Act of 1945.

The Emergency Management Act vests the governor with broad powers and duties to "cop[e] with dangers to this state or the people of this state presented by a disaster or emergency," which the governor may implement through "executive orders, proclamations, and directives having the force and effect of law." MCL 30.403(1)-(2). Similarly, the Emergency Powers of the Governor Act of 1945 provides that, after declaring a state of emergency, "the governor may promulgate reasonable orders, rules, and regulations as he or she considers necessary to protect life and property or to bring the emergency situation within the affected area under control." MCL 10.31(1).

To suppress the spread of COVID-19, to prevent the state's health care system from being overwhelmed, to allow time for the production of critical test kits, ventilators, and personal protective equipment, and to avoid needless deaths, it is reasonable and necessary to direct residents to remain at home or in their place of residence to the maximum extent feasible. To that end, on March 23, 2020, I issued Executive Order 2020-21, ordering all people in Michigan to stay home and stay safe. The order limited gatherings and travel, and required workers who are not necessary to sustain or protect life to stay home.

The measures put in place by Executive Order 2020-21 have been effective, but this virus is both aggressive and persistent: on April 8, 2020, Michigan reported 20,346 confirmed cases of COVID-19 and 959 deaths from it. To win this fight, and to protect the health and safety of our state and each other, we must be just as aggressive and persistent. Though we have all made sacrifices, we must be steadfast. Accordingly, with this order, I find it reasonable and necessary to reaffirm the measures set forth in Executive Order 2020-21, clarify them, and extend their duration to April 30, 2020. This order takes effect on April 9, 2020 at 11:59 pm. When this order takes effect, Executive Order 2020-21 is rescinded.

Acting under the Michigan Constitution of 1963 and Michigan law, I order the following:

1. This order must be construed broadly to prohibit in-person work that is not necessary to sustain or protect life.
2. Subject to the exceptions in section 7 of this order, all individuals currently living within the State of Michigan are ordered to stay at home or at their place of residence. Subject to the same exceptions, all public and private gatherings of any number of people occurring among persons not part of a single household are prohibited.
3. All individuals who leave their home or place of residence must adhere to social distancing measures recommended by the Centers for Disease Control and Prevention ("CDC"), including remaining at least six feet from people from outside the individual's household to the extent feasible under the circumstances.
4. No person or entity shall operate a business or conduct operations that require workers to leave their homes or places of residence except to the extent that those workers are necessary to sustain or protect life or to conduct minimum basic operations.
 - (a) For purposes of this order, workers who are necessary to sustain or protect life are defined as "critical infrastructure workers," as described in sections 8 and 9 of this order.
 - (b) For purposes of this order, workers who are necessary to conduct minimum basic operations are those whose in-person presence is strictly necessary to allow the business or operation to maintain the value of inventory and equipment, care for animals, ensure security, process transactions (including payroll and employee benefits), or facilitate the ability of other workers to work remotely.

Businesses and operations must determine which of their workers are necessary to conduct minimum basic operations and inform such workers of that designation. Businesses and operations must make such designations in writing, whether by electronic message, public website, or other appropriate means. Workers need not carry copies of their designations when they leave the home or place of residence for work.

Any in-person work necessary to conduct minimum basic operations must be performed consistently with the social distancing practices and other mitigation measures described in section 10 of this order.

5. Businesses and operations that employ critical infrastructure workers may continue in-person operations, subject to the following conditions:
 - (a) Consistent with sections 8 and 9 of this order, businesses and operations must determine which of their workers are critical infrastructure workers and inform such workers of that designation. Businesses and operations must make such designations in writing, whether by electronic message, public website, or other appropriate means. Workers need not carry copies of their designations when they leave the home or place of residence for work. Businesses and operations need not designate:
 - (1) Workers in health care and public health.
 - (2) Workers who perform necessary government activities, as described in section 6 of this order.
 - (3) Workers and volunteers described in section 9(d) of this order.
 - (b) In-person activities that are not necessary to sustain or protect life must be suspended until normal operations resume.
 - (c) Businesses and operations maintaining in-person activities must adopt social distancing practices and other mitigation measures to protect workers and patrons, as described in section 10 of this order. Stores that are open to the public must also adhere to the rules described in section 11 of this order.
6. All in-person government activities at whatever level (state, county, or local) that are not necessary to sustain or protect life, or to support those businesses and operations that are necessary to sustain or protect life, are suspended.
 - (a) For purposes of this order, necessary government activities include activities performed by critical infrastructure workers, including workers in law enforcement, public safety, and first responders.
 - (b) Such activities also include, but are not limited to, public transit, trash pick-up and disposal (including recycling and composting), activities necessary to manage and oversee elections, operations necessary to enable transactions that support the work of a business's or operation's critical infrastructure

workers, and the maintenance of safe and sanitary public parks so as to allow for outdoor activity permitted under this order.

- (c) For purposes of this order, necessary government activities include minimum basic operations, as described in section 4(b) of this order. Workers performing such activities need not be designated.
- (d) Any in-person government activities must be performed consistently with the social distancing practices and other mitigation measures to protect workers and patrons described in section 10 of this order.

7. Exceptions.

- (a) Individuals may leave their home or place of residence, and travel as necessary:
 - (1) To engage in outdoor physical activity, consistent with remaining at least six feet from people from outside the individual's household. Outdoor physical activity includes walking, hiking, running, cycling, kayaking, canoeing, or other similar physical activity, as well as any comparable activity for those with limited mobility.
 - (2) To perform their jobs as critical infrastructure workers after being so designated by their employers. (Critical infrastructure workers who need not be designated under section 5(a) of this order may leave their home for work without being designated.)
 - (3) To conduct minimum basic operations, as described in section 4(b) of this order, after being designated to perform such work by their employers.
 - (4) To perform necessary government activities, as described in section 6 of this order.
 - (5) To perform tasks that are necessary to their health and safety, or to the health and safety of their family or household members (including pets). Individuals may, for example, leave the home or place of residence to secure medication or to seek medical or dental care that is necessary to address a medical emergency or to preserve the health and safety of a household or family member (including procedures that, in accordance with a duly implemented nonessential procedures postponement plan, have not been postponed).
 - (6) To obtain necessary services or supplies for themselves, their family or household members, their pets, and their vehicles.
 - (A) Individuals must secure such services or supplies via delivery to the maximum extent possible. As needed, however, individuals may leave the home or place of residence to

purchase groceries, take-out food, gasoline, needed medical supplies, and any other products necessary to maintain the safety, sanitation, and basic operation of their residences. Individuals may also leave the home to drop off a vehicle to the extent permitted under section 9(i) of this order.

- (B) Individuals should limit, to the maximum extent that is safe and feasible, the number of household members who leave the home for any errands.
 - (7) To care for a family member or a family member's pet in another household.
 - (8) To care for minors, dependents, the elderly, persons with disabilities, or other vulnerable persons.
 - (9) To visit an individual under the care of a health care facility, residential care facility, or congregate care facility, to the extent otherwise permitted.
 - (10) To attend legal proceedings or hearings for essential or emergency purposes as ordered by a court.
 - (11) To work or volunteer for businesses or operations (including both religious and secular nonprofit organizations) that provide food, shelter, and other necessities of life for economically disadvantaged or otherwise needy individuals, individuals who need assistance as a result of this emergency, and people with disabilities.
 - (12) To attend a funeral, provided that no more than 10 people are in attendance at the funeral.
- (b) Individuals may also travel:
- (1) To return to a home or place of residence from outside this state.
 - (2) To leave this state for a home or residence elsewhere.
 - (3) Between two residences in this state, through April 10, 2020. After that date, travel between two residences is not permitted.
 - (4) As required by law enforcement or a court order, including the transportation of children pursuant to a custody agreement.
- (c) All other travel is prohibited, including all travel to vacation rentals.
8. For purposes of this order, critical infrastructure workers are those workers described by the Director of the U.S. Cybersecurity and Infrastructure Security Agency in his guidance of March 19, 2020 on the COVID-19 response (available

here). This order does *not* adopt any subsequent guidance document released by this same agency.

Consistent with the March 19, 2020 guidance document, critical infrastructure workers include some workers in each of the following sectors:

- (a) Health care and public health.
- (b) Law enforcement, public safety, and first responders.
- (c) Food and agriculture.
- (d) Energy.
- (e) Water and wastewater.
- (f) Transportation and logistics.
- (g) Public works.
- (h) Communications and information technology, including news media.
- (i) Other community-based government operations and essential functions.
- (j) Critical manufacturing.
- (k) Hazardous materials.
- (l) Financial services.
- (m) Chemical supply chains and safety.
- (n) Defense industrial base.

9. For purposes of this order, critical infrastructure workers also include:

- (a) Child care workers (including workers at disaster relief child care centers), but only to the extent necessary to serve the children or dependents of workers required to perform in-person work as permitted under this order. This category includes individuals (whether licensed or not) who have arranged to care for the children or dependents of such workers.
- (b) Workers at suppliers, distribution centers, or service providers, as described below.
 - (1) Any suppliers, distribution centers, or service providers whose continued operation is necessary to enable, support, or facilitate another business's or operation's critical infrastructure work may designate their workers as critical infrastructure workers, provided

that only those workers whose in-person presence is necessary to enable, support, or facilitate such work may be so designated.

- (2) Any suppliers, distribution centers, or service providers whose continued operation is necessary to enable, support, or facilitate the necessary work of suppliers, distribution centers, or service providers described in subprovision (1) of this subsection may designate their workers as critical infrastructure workers, provided that only those workers whose in-person presence is necessary to enable, support, or facilitate such work may be so designated.
 - (3) Consistent with the scope of work permitted under subprovision (2) of this subsection, any suppliers, distribution centers, or service providers further down the supply chain whose continued operation is necessary to enable, support, or facilitate the necessary work of other suppliers, distribution centers, or service providers may likewise designate their workers as critical infrastructure workers, provided that only those workers whose in-person presence is necessary to enable, support, or facilitate such work may be so designated.
 - (4) Suppliers, distribution centers, and service providers that abuse their designation authority under this subsection shall be subject to sanctions to the fullest extent of the law.
- (c) Workers in the insurance industry, but only to the extent that their work cannot be done by telephone or remotely.
 - (d) Workers and volunteers for businesses or operations (including both religious and secular nonprofit organizations) that provide food, shelter, and other necessities of life for economically disadvantaged or otherwise needy individuals, individuals who need assistance as a result of this emergency, and people with disabilities.
 - (e) Workers who perform critical labor union functions, including those who administer health and welfare funds and those who monitor the well-being and safety of union members who are critical infrastructure workers, provided that any administration or monitoring should be done by telephone or remotely where possible.
 - (f) Workers at retail stores who sell groceries, medical supplies, and products necessary to maintain the safety, sanitation, and basic operation of residences, including convenience stores, pet supply stores, auto supplies and repair stores, hardware and home maintenance stores, and home appliance retailers.
 - (g) Workers at laundromats, coin laundries, and dry cleaners.

- (h) Workers at hotels and motels, provided that the hotels or motels do not offer additional in-house amenities such as gyms, pools, spas, dining, entertainment facilities, meeting rooms, or like facilities.
 - (i) Workers at motor vehicle dealerships who are necessary to facilitate remote and electronic sales or leases, or to deliver motor vehicles to customers, provided that showrooms remain closed to in-person traffic.
10. Businesses, operations, and government agencies that continue in-person work must adhere to sound social distancing practices and measures, which include but are not limited to:
- (a) Developing a COVID-19 preparedness and response plan, consistent with recommendations in Guidance on Preparing Workplaces for COVID-19, developed by the Occupational Health and Safety Administration and available [here](#). Such plan must be available at company headquarters or the worksite.
 - (b) Restricting the number of workers present on premises to no more than is strictly necessary to perform the business's, operation's, or government agency's critical infrastructure functions or its minimum basic operations.
 - (c) Promoting remote work to the fullest extent possible.
 - (d) Keeping workers and patrons who are on premises at least six feet from one another to the maximum extent possible.
 - (e) Increasing standards of facility cleaning and disinfection to limit worker and patron exposure to COVID-19, as well as adopting protocols to clean and disinfect in the event of a positive COVID-19 case in the workplace.
 - (f) Adopting policies to prevent workers from entering the premises if they display respiratory symptoms or have had contact with a person with a confirmed diagnosis of COVID-19.
 - (g) Any other social distancing practices and mitigation measures recommended by the CDC.
11. Any store that remains open for in-person sales under section 5 or 9(f) of this order must:
- (a) Establish lines to regulate entry in accordance with subsections (c) and (d) of this section, with markings for patrons to enable them to stand at least six feet apart from one another while waiting. Stores should also explore alternatives to lines, including by allowing customers to wait in their cars for a text message or phone call, to enable social distancing and to accommodate seniors and those with disabilities.

- (b) Consider establishing curbside pick-up to reduce in-store traffic and mitigate outdoor lines.
 - (c) For stores of less than 50,000 square feet of customer floor space, limit the number of people in the store (including employees) to 25% of the total occupancy limits established by the State Fire Marshal or a local fire marshal.
 - (d) For stores of more than 50,000 square feet:
 - (1) Limit the number of customers in the store at one time (excluding employees) to 4 people per 1,000 square feet of customer floor space. The amount of customer floor space must be calculated to exclude store areas that are closed under subprovision (2) of this subsection.
 - (2) Close areas of the store—by cordoning them off, placing signs in aisles, posting prominent signs, removing goods from shelves, or other appropriate means—that are dedicated to the following classes of goods:
 - (A) Carpet or flooring.
 - (B) Furniture.
 - (C) Garden centers and plant nurseries.
 - (D) Paint.
 - (3) By April 13, 2020, refrain from the advertising or promotion of goods that are not groceries, medical supplies, or items that are necessary to maintain the safety, sanitation, and basic operation of residences.
 - (4) Create at least two hours per week of dedicated shopping time for vulnerable populations, which for purposes of this order are people over 60, pregnant women, and those with chronic conditions like heart disease, diabetes, and lung disease.
 - (e) The director of the Department of Health and Human Services is authorized to issue an emergency order varying the capacity limits described in subsections (c) and (d) of this section as necessary to protect the public health.
12. No one shall advertise or rent a short-term vacation property except as necessary to assist in housing a health care professional or volunteer aiding in the response to the COVID-19 crisis.
13. Nothing in this order should be taken to supersede another executive order or directive that is in effect, except to the extent this order imposes more stringent limitations on in-person work, activities, and interactions. Consistent with prior

guidance, a place of religious worship, when used for religious worship, is not subject to penalty under section 17 of this order.

14. Nothing in this order should be taken to interfere with or infringe on the powers of the legislative and judicial branches to perform their constitutional duties or exercise their authority.
15. This order takes effect on April 9, 2020 at 11:59 pm and continues through April 30, 2020 at 11:59 pm. When this order takes effect, Executive Order 2020-21 is rescinded. All references to that order in other executive orders, agency rules, letters of understanding, or other legal authorities shall be taken to refer to this order.
16. I will evaluate the continuing need for this order prior to its expiration. In determining whether to maintain, intensify, or relax its restrictions, I will consider, among other things, (1) data on COVID-19 infections and the disease's rate of spread; (2) whether sufficient medical personnel, hospital beds, and ventilators exist to meet anticipated medical need; (3) the availability of personal protective equipment for the health-care workforce; (4) the state's capacity to test for COVID-19 cases and isolate infected people; and (5) economic conditions in the state.
17. Consistent with MCL 10.33 and MCL 30.405(3), a willful violation of this order is a misdemeanor.

Given under my hand and the Great Seal of the State of Michigan.

Date: April 9, 2020

Time: 2:07 pm



GRETCHEN WHITMER
GOVERNOR

By the Governor:

SECRETARY OF STATE

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KIMBERLY BEEMER, PAUL
CAVANAUGH, and ROBERT MUISE,

Plaintiffs,

No. 1:20-cv-00323

v

HON. PAUL L. MALONEY

GRETCHEN WHITMER, in her
official capacity as Governor for the
State of Michigan, ALLEN
TELGENHOF, in his official
capacity as Charlevoix County
Prosecuting Attorney, BRIAN L.
MACKIE, in his official capacity
as Washtenaw County Prosecuting
Attorney, and WILLIAM J.
VAILLIENCOURT, JR., in his
official capacity as Livingston
County Prosecuting Attorney,

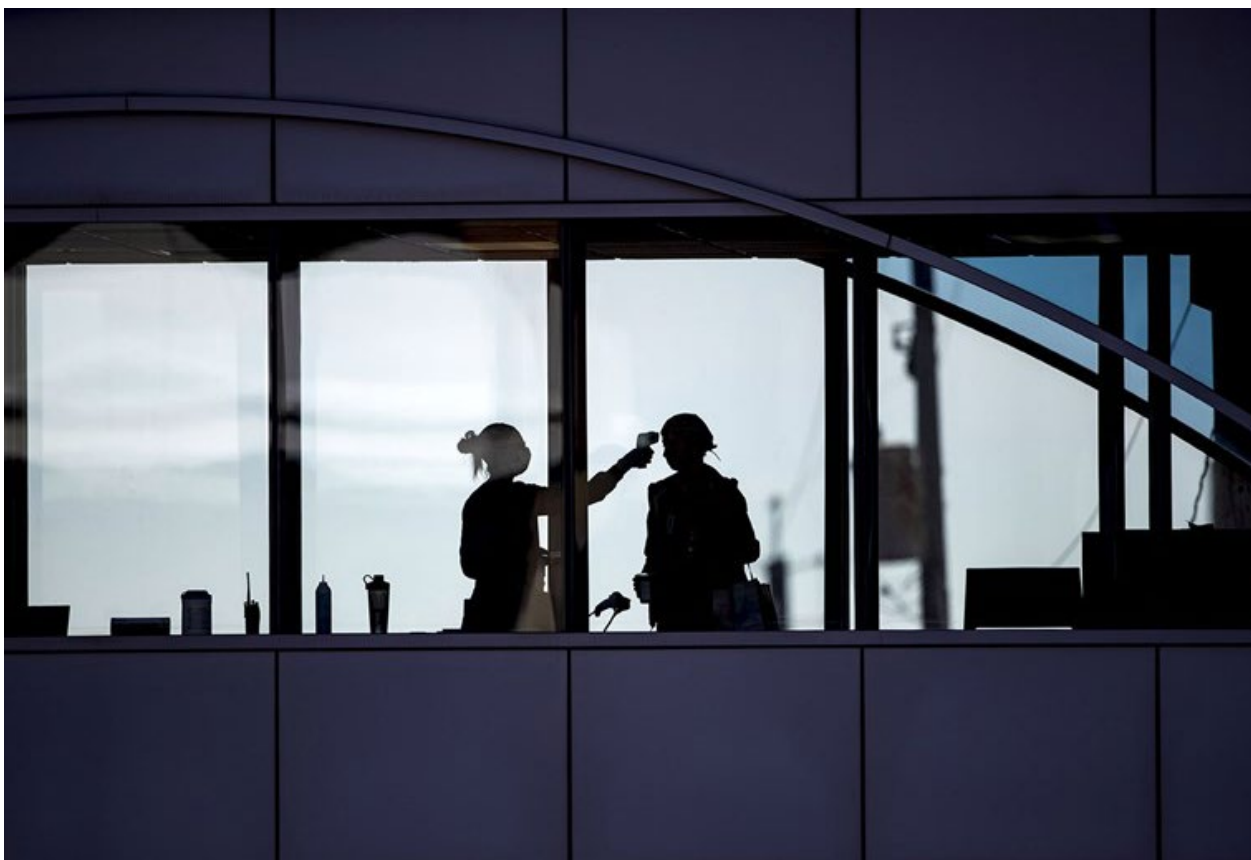
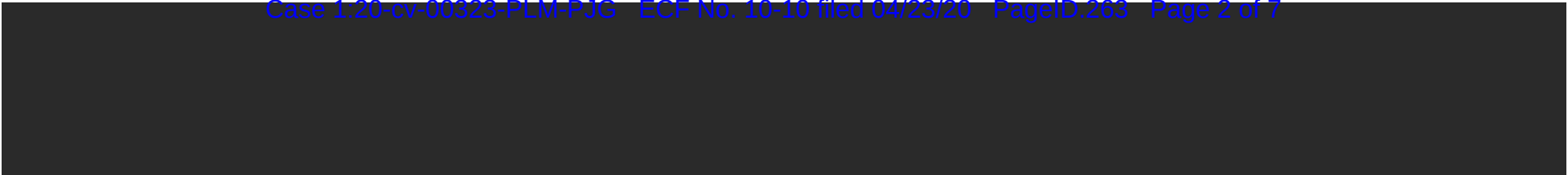
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EXHIBIT J



— Amid coronavirus concerns, a healthcare worker takes the temperature of a visitor to Essentia Health who was crossing over a skywalk bridge from the adjoining parking deck, Friday, April 10, 2020, in Duluth, Minn. Alex Kormann / AP file

April 20, 2020, 9:01 AM EDT

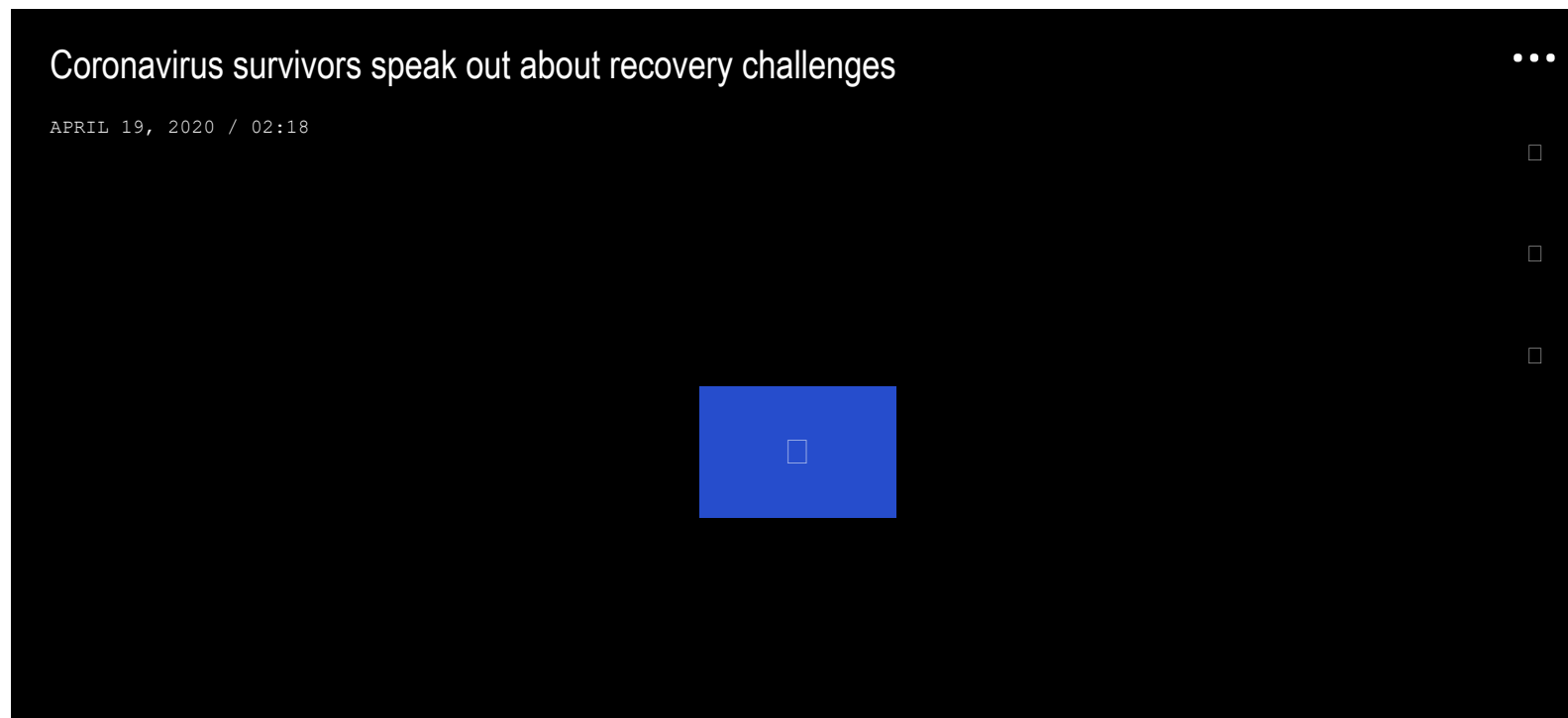
By The Associated Press

A flood of new research suggests that far more people have had the coronavirus without any symptoms, fueling hope that it will turn out to be much less lethal than originally feared.

While that's clearly good news, it also means it's impossible to know who around you may be contagious. That complicates decisions about returning to work, school and normal life.

Full coverage of the coronavirus outbreak

In the last week, reports of silent infections have come from a homeless shelter in Boston, a U.S. Navy aircraft carrier, pregnant women at a New York hospital, several European countries and California.





The head of the U.S. Centers for Disease Control and Prevention [says](#) 25 percent of infected people might not have symptoms. The vice chairman of the Joint Chiefs of Staff, Gen. John Hyten, thinks it may be as high as 60 percent to 70 percent among military personnel.

None of these numbers can be fully trusted because they're based on flawed and inadequate testing, said Dr. Michael Mina of Harvard's School of Public Health.

Collectively, though, they suggest "we have just been off the mark by huge, huge numbers" for estimating total infections, he said.

Worldwide, more than 2.3 million infections and more than 160,000 deaths have been confirmed. The virus has caused nearly unprecedented economic and social harm since its existence was reported in early January.

Stealth cases

Based on known cases, health officials have said the virus usually causes mild or moderate flu-like illness. Now evidence is growing that a substantial number of people may have no symptoms at all.

Scientists in Iceland screened 6 percent of its population to see how many had previously undetected infections and [found](#) that about 0.7 percent tested positive. So did 13 percent of a group at higher risk because of recent travel or exposure to someone sick.

Related

HEALTH

say virus tests crucial to identifying 'Trojan horses'

Aboard the aircraft carrier USS Theodore Roosevelt, where one crew member died from the virus, “the rough numbers are that 40 percent are symptomatic,” said Vice Adm. Phillip Sawyer, deputy commander of naval operations. The ratio may change if more develop symptoms later, he warned.

In New York, a hospital [tested](#) all pregnant women coming in to deliver over a two-week period. Nearly 14 percent of those who arrived with no symptoms of coronavirus turned out to have it. Of the 33 positive cases, 29 had no symptoms when tested, although some developed them later.

Previously, tests on passengers and crew from the Diamond Princess cruise ship [found](#) nearly half who tested positive had no symptoms at the time. Researchers [estimate](#) that 18 percent of infected people never developed any.

Flawed methods

These studies used tests that look for bits of the virus from throat and nose swabs, which can miss cases. Someone can test negative one day if there’s not much virus to detect and then positive the next.

Symptoms also may not appear when someone is tested but turn up later. One [Japanese study](#) found more than half of those who had no symptoms when they tested positive later felt sick.

Recommended

CORONAVIRUS

2020 ELECTION

'You may have been exposed to the virus': What to expect when a contact tracer calls you 7 Wisconsin coronavirus infections linked to election day, health official says

Better answers may come from newer tests that check blood for antibodies, substances the immune system makes to fight the virus. But the accuracy of these, too, is still to be determined.

On Friday, researchers reported results from antibody tests on 3,300 people in California's Santa Clara county: Between 1.5 percent and 2.8 percent have been infected, they claimed. That would mean 48,000 to 81,000 cases in the county — more than 50 times the number that have been confirmed.

Download the [NBC News app](#) for full coverage of the coronavirus outbreak

The [work](#) has not been formally published or reviewed, but some scientists were quick to question it. Participants were recruited through Facebook ads, which would attract many people likely to be positive who have had symptoms and want to know if the coronavirus was the reason. Some neighborhoods also had way more participants than others, and “hot spots” within the county might have made infections seem more common than they are elsewhere.

Ships, maternity wards and single counties also don't provide data that can be used to generalize about what's happening elsewhere. And many of the figures have come from snapshots, not research on wide populations over time.

Next steps

Antibody testing in particular needs to be done “in an unbiased approach” on groups of people that are representative of the geographic, social, racial and other conditions, Mina said.

The CDC and other groups [plan](#) such studies, and they could guide public health advice on returning to normal life for people in certain areas.

If infections are more widespread than previously understood, it's possible that more people have developed some level of immunity to the virus. That could stifle the spread through what's called herd immunity, but scientists caution that there is still much to learn about whether mild illnesses confer immunity and how long it might last.

It will probably be months before enough reliable testing has been done to answer those questions and others, including how widespread infections have been and the virus's true mortality rate, which has only been estimated so far.

"If they've all seen the virus before, then maybe you can relax in that neighborhood" and ease social distancing, Mina said. "We're not anywhere close where we need to be" on antibody testing to do that yet, he said.

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— The Associated Press



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EXHIBIT K

CORRESPONDENCE



Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1

TO THE EDITOR: A novel human coronavirus that is now named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (formerly called HCoV-19) emerged in Wuhan, China, in late 2019 and is now causing a pandemic.¹ We analyzed the aerosol and surface stability of SARS-CoV-2 and compared it with SARS-CoV-1, the most closely related human coronavirus.²

We evaluated the stability of SARS-CoV-2 and SARS-CoV-1 in aerosols and on various surfaces and estimated their decay rates using a Bayesian regression model (see the Methods section in the Supplementary Appendix, available with the full text of this letter at NEJM.org). SARS-CoV-2 nCoV-WA1-2020 (MN985325.1) and SARS-CoV-1 Tor2 (AY274119.3) were the strains used. Aerosols (<5 μm) containing SARS-CoV-2 ($10^{5.25}$ 50% tissue-culture infectious dose [TCID₅₀] per milliliter) or SARS-CoV-1 ($10^{6.75-7.00}$ TCID₅₀ per milliliter)

were generated with the use of a three-jet Collision nebulizer and fed into a Goldberg drum to create an aerosolized environment. The inoculum resulted in cycle-threshold values between 20 and 22, similar to those observed in samples obtained from the upper and lower respiratory tract in humans.

Our data consisted of 10 experimental conditions involving two viruses (SARS-CoV-2 and SARS-CoV-1) in five environmental conditions (aerosols, plastic, stainless steel, copper, and cardboard). All experimental measurements are reported as means across three replicates.

SARS-CoV-2 remained viable in aerosols throughout the duration of our experiment (3 hours), with a reduction in infectious titer from $10^{3.5}$ to $10^{2.7}$ TCID₅₀ per liter of air. This reduction was similar to that observed with SARS-CoV-1, from $10^{4.3}$ to $10^{3.5}$ TCID₅₀ per milliliter (Fig. 1A).

SARS-CoV-2 was more stable on plastic and stainless steel than on copper and cardboard, and viable virus was detected up to 72 hours after application to these surfaces (Fig. 1A), although the virus titer was greatly reduced (from $10^{3.7}$ to $10^{0.6}$ TCID₅₀ per milliliter of medium after 72 hours on plastic and from $10^{3.7}$ to $10^{0.6}$ TCID₅₀ per milliliter after 48 hours on stainless steel). The stability kinetics of SARS-CoV-1 were similar (from $10^{3.4}$ to $10^{0.7}$ TCID₅₀ per milliliter after 72 hours on plastic and from $10^{3.6}$ to $10^{0.6}$ TCID₅₀ per milliliter after 48 hours on stainless steel). On copper, no viable SARS-CoV-2 was measured after 4 hours and no viable SARS-CoV-1 was measured after 8 hours. On cardboard, no viable SARS-CoV-2 was measured after 24 hours and no viable SARS-CoV-1 was measured after 8 hours (Fig. 1A).

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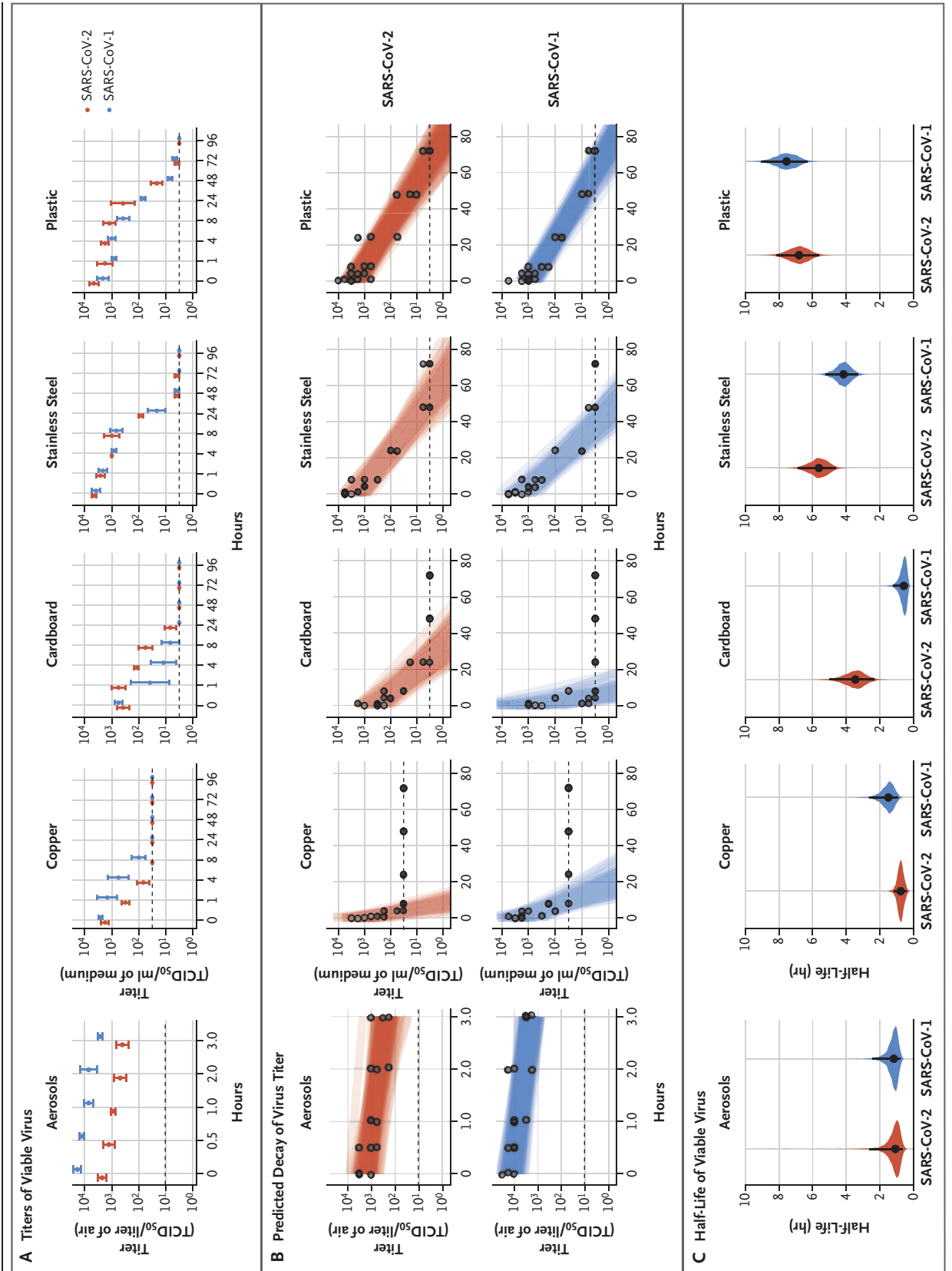


Figure 1 (previous page). Viability of SARS-CoV-1 and SARS-CoV-2 in Aerosols and on Various Surfaces.

As shown in Panel A, the titer of aerosolized viable virus is expressed in 50% tissue-culture infectious dose (TCID₅₀) per liter of air. Viruses were applied to copper, cardboard, stainless steel, and plastic maintained at 21 to 23°C and 40% relative humidity over 7 days. The titer of viable virus is expressed as TCID₅₀ per milliliter of collection medium. All samples were quantified by end-point titration on Vero E6 cells. Plots show the means and standard errors (I bars) across three replicates. As shown in Panel B, regression plots indicate the predicted decay of virus titer over time; the titer is plotted on a logarithmic scale. Points show measured titers and are slightly jittered (i.e., their horizontal positions are modified by a small random amount to reduce overlap) along the time axis to avoid overplotting. Lines are random draws from the joint posterior distribution of the exponential decay rate (negative of the slope) and intercept (initial virus titer) to show the range of possible decay patterns for each experimental condition. There were 150 lines per panel, including 50 lines from each plotted replicate. As shown in Panel C, violin plots indicate posterior distribution for the half-life of viable virus based on the estimated exponential decay rates of the virus titer. The dots indicate the posterior median estimates, and the black lines indicate a 95% credible interval. Experimental conditions are ordered according to the posterior median half-life of SARS-CoV-2. The dashed lines indicate the limit of detection, which was $3.33 \times 10^{0.5}$ TCID₅₀ per liter of air for aerosols, $10^{0.5}$ TCID₅₀ per milliliter of medium for plastic, steel, and cardboard, and $10^{1.5}$ TCID₅₀ per milliliter of medium for copper.

Both viruses had an exponential decay in virus titer across all experimental conditions, as indicated by a linear decrease in the \log_{10} TCID₅₀ per liter of air or milliliter of medium over time (Fig. 1B). The half-lives of SARS-CoV-2 and SARS-CoV-1 were similar in aerosols, with median estimates of approximately 1.1 to 1.2 hours and 95% credible intervals of 0.64 to 2.64 for SARS-CoV-2 and 0.78 to 2.43 for SARS-CoV-1 (Fig. 1C, and Table S1 in the Supplementary Appendix). The half-lives of the two viruses were also similar on copper. On cardboard, the half-life of SARS-CoV-2 was longer than that of SARS-CoV-1. The longest viability of both viruses was on stainless steel and plastic; the estimated median half-life of SARS-CoV-2 was approximately 5.6 hours on stainless steel and 6.8 hours on plastic (Fig. 1C). Estimated differences in the half-lives of the two viruses were small except for those on cardboard (Fig. 1C). Individual replicate data were noticeably “noisier” (i.e., there was more varia-

tion in the experiment, resulting in a larger standard error) for cardboard than for other surfaces (Fig. S1 through S5), so we advise caution in interpreting this result.

We found that the stability of SARS-CoV-2 was similar to that of SARS-CoV-1 under the experimental circumstances tested. This indicates that differences in the epidemiologic characteristics of these viruses probably arise from other factors, including high viral loads in the upper respiratory tract and the potential for persons infected with SARS-CoV-2 to shed and transmit the virus while asymptomatic.^{3,4} Our results indicate that aerosol and fomite transmission of SARS-CoV-2 is plausible, since the virus can remain viable and infectious in aerosols for hours and on surfaces up to days (depending on the inoculum shed). These findings echo those with SARS-CoV-1, in which these forms of transmission were associated with nosocomial spread and super-spreading events,⁵ and they provide information for pandemic mitigation efforts.

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1. Coronavirus disease (COVID-2019) situation reports. Geneva: World Health Organization, 2020 (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>).
2. Wu A, Peng Y, Huang B, et al. Genome composition and divergence of the novel coronavirus (2019-nCoV) originating in China. *Cell Host Microbe* 2020;27:325-8.
3. Bai Y, Yao L, Wei T, et al. Presumed asymptomatic carrier transmission of COVID-19. *JAMA* 2020 February 21 (Epub ahead of print).
4. Zou L, Ruan F, Huang M, et al. SARS-CoV-2 viral load in upper respiratory specimens of infected patients. *N Engl J Med* 2020;382:1177-9.
5. Chen YC, Huang LM, Chan CC, et al. SARS in hospital emergency room. *Emerg Infect Dis* 2004;10:782-8.

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Epidemiologic and Survival Trends in Amyloidosis, 1987–2019

TO THE EDITOR: Amyloidosis is a group of rare disorders caused by deposition of misfolded proteins as insoluble fibrils, which leads to progressive multiorgan failure and death.¹ The past 30 years have seen remarkable advances in diagnostic imaging, more accurate identification of fibrils, and (in recent years) the first approved treatments.^{2,3}

We report here data on 11,006 patients who received a diagnosis of amyloidosis during the period from 1987 through October 2019. All

data were obtained from the United Kingdom National Amyloidosis Centre database. The number of cases increased by 670% from the period 1987–1999 to the period 2010–2019 (Fig. 1A). Systemic light-chain (AL) amyloidosis remained the most common type and accounted for 55% of all cases (Fig. 1B). With the advances in therapies that target plasma cells, overall survival among patients with AL amyloidosis increased from a median of 18 months among patients who received a diagnosis before 2005 to

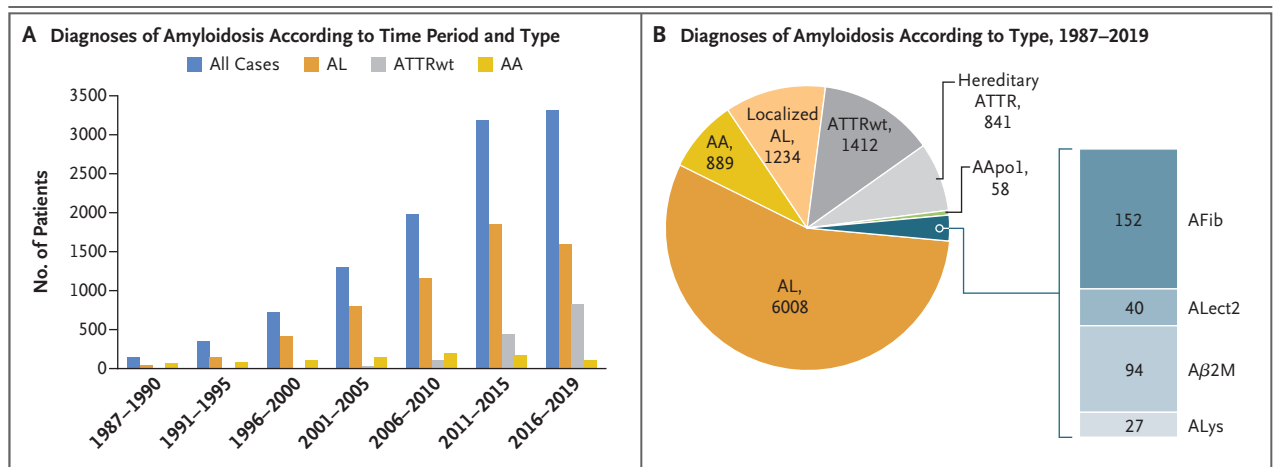


Figure 1. Diagnoses of Amyloidosis over Three Decades and Amyloidosis Types.

Panel A shows data for 11,006 cases of amyloidosis diagnosed from 1987 to 2019. Panel B shows data for the 10,755 cases for which fibril type could be determined accurately. AA denotes amyloid A, AApo1 amyloid apolipoprotein A-I, Aβ2M amyloid beta₂-microglobulin, AFib amyloid fibrinogen, ALect2 amyloid leukocyte chemotactic factor 2, AL light chain, ALys amyloid lysozyme, ATTR transthyretin-associated, and ATTRwt wild-type ATTR.