(844) 333-7276
jmah@instituteaction.org

February 4, 2021

Department of Financial and Professional Regulation
Division of Professional Regulation
Complaint Intake Unit
100 West Randolph Street, Suite 9-300
Chicago, IL 60601

Dear Distinguished Board members of the Illinois Medical Disciplinary Board;

I write to request an investigation into Dr. Ngonzi Ezike's medical license and request the board agree to revoke Dr. Ezike's medical license on the basis that the Doctor Engaged in dishonorable, unethical or unprofessional conduct of a character likely to deceive, defraud or harm the public.

Dr. Ezike is the Director of the Illinois Department of Public Health. In that position, she was in charge of mounting a response to the Covid-19 response, working with Governor Pritzker. In her capacity as Director of the IDPH; Dr. Ezike was still acting under the color of law.

Section 242 of Title 18 refers to any person acting under color of any law to willfully deprive a person of a right or privilege protected by the Constitution or laws of the United States.

For the purpose of Section 242, acts under "color of law" include acts not only done by federal, state, or local officials within their lawful authority, but also acts done beyond the bounds of that official's lawful authority, if the acts are done while the official is purporting to or pretending to act in the performance of his/her official duties. Persons acting under color of law within the meaning of this statute include police officers, prisons guards and other law enforcement officials, as well as judges, care providers in public health facilities, and others who are acting as public officials.

I. Evidence of unethical and unprofessional conduct of a character to deceive, defraud, and harm the public.

A. On or about April 19th, 2020; during the daily Covid update Press Conference, Dr. Ngonzi Ezike, head of the IDPH, informed the public on How Covid Deaths are classified (EXHIBIT 1).

1. “Anyone who passes away after testing positive for the virus is included in that category”

2. “If you were in hospice and had already been given a few weeks to live, and then you also were found to have COVID, that will be counted as a COVID death. It means technically even if you died of a clear alternate cause, but you had COVID at the same time, it’s still listed as a COVID death. So, everyone who’s listed as a COVID death doesn’t mean that that was the cause of the death, but they had COVID at the time of death”

B. On May 9th, 2020 - Please find attached (EXHIBIT 2) an email attachment, titled “[FINAL] May 9 2020 Modeling Update (1)", which contains the slide (on page 18) stating: "Changes in the total number of test-positive cases or the fraction testing positive are an unreliable measure of shifts. These numbers should not be used to determine policy.” This is the report which was produced by CIVIS Analytics (the company coordinating the State's COVID-19 modeling) and the Governor's own hand-picked COVID-19 experts.

C. On September 05, 2020 - In an article published by the Belleville News-Democrat (EXHIBIT 3) and extremely relevant to this issue of "positivity rate" being UNRELIABLE, please review the statements (excerpted below) by Dr. Sarah Cobey, one of Governor Pritzker's COVID-19 "experts" and a genuine top-tier epidemiologist, to the Belleville News-Democrat. Note her stating: "the metrics they've proposed... not scientifically founded".

1. HEADLINE: You can't eat in a restaurant because of the COVID positivity rate. Is it accurate?

2. EXCERPT: "But the positivity rate is not a useful number without adequate testing, said Sarah Cobey, an associate professor at the University of Chicago who specializes in ecology and the evolution of pathogens. That is the case in some metro-east counties. "I have been very critical of their use of this metric and basically almost all of the metrics they've proposed so far because they are not scientifically founded," said Cobey, who has advised the Illinois Department of Public Health on tracking. "They're roughly right, but they're not metrics you want to hang your hat on." Cobey said the state wanted to use a metric the public could understand and calculate on its own. "We said, 'You're going to be losing scientific accuracy and probably credibility in the long run if you start using these other things,'" Cobey said. "They're pretty adamant that actual science is too much."

D. On December 24, 2020 - In a New York Times Magazine article by Emily Bazelon (EXHIBIT 4); Dr. Ngonzi Ezike, head of the IDPH, is quoted saying regarding the elderly population getting Vaccines first given they are the population the whole state of Illinois was put in lockdowns to protect:

1. "...Right. I think, though, there's a possible issue with the long-term-care population. Many of those people may **die anyway**, for other reasons, but then the conclusion could be, "Grandma got the vaccine and died the next week." These are elderly people with co-morbidities, and their death will coincide with the period after vaccination, but it will not be caused by the vaccine. I think that will be confusing for many people, however. So having health care workers get vaccinated [FIRST] and survive — that helps "

E. On January 13, 2021 - In an email from Stephanie Gratton, Attorney at the Illinois Department of Public Health (EXHIBIT 5); and responding to a "Freedom of Information Act request for public records sufficient enough to determine the cycle quantification (Cq) value for the test(s) used in IL to confirm a positive COVID-19 case":

1. "The Department is unable to identify any records responsive to your request. The Depart- ment's lab runs the ThermoFisher Taq-Path assay for SARS CoV-2. This assay analyzes samples using interpretive software and CT values are not given. The lab reports to the provider SARS CoV-2 Not Detected or Positive for SARS CoV-2. The Department cannot provide CT values from other test-ing labs across the state because it does not have access to this information. RT-PCR testing is not quantified and CT values are not reported with other ELR".

Medical professionals are regulated by the State of Illinois in order to promote the public welfare. See, Ballin Drugs, Inc. v. Illinois Department of Registration and Education, 166 Ill. App. 3d 520, 531, 519 N.E.2d 1151 (1988). The State of Illinois has a legitimate interest in regulating medical professionals in order to promote and protect the public welfare, and the Medical Practice Act was enacted in accordance with this goal. Potts v. Illinois Department of Registration and Education, 128 Ill. 2d 322, 333, 538 N.E.2d 1140 (1989).

I am aware that, in developing a scheme of regulation in this area, the general assembly has chosen to require that the Medical majority of members of the Disciplinary Board be physicians. (225 ILCS 60/7(A) (1998)). I believe it is reasonable to infer that, based on its composition, the Board brings to its disciplinary decisions the perspective of the medical profession. Such a perspective obviously entails a recognition of the considerable ramifications of suspending or revoking a license, and therefore suspension/revocation as a sanction is not likely to be lightly imposed.

At the same time; a Disciplinary Board composed of a majority of physicians deciding to not take any action against Dr. Ezike also standardizes her conduct and indiscretion in the evidence provided to be the gold standard for all other physicians in Illinois. The public should then expect other Physicians to use a diagnosis standard like the one Dr. Ezike used in classifying Covid deaths. This would lead to further decline in trust in public health practitioners. Should the public question a Doctor's motivation behind every diagnosis of cancer? Heart disease? Diabetes? Autism? Does the oath matter anymore?

For Doctors who previously were suspended or had their license revoked on diagnostic indiscretion; Do they have a claim to get their licenses back or unsuspended?

Administrative agencies, such as the Disciplinary Board, exercise purely statutory powers and possess no inherent or common law powers. Newkirk v. Bigard, 109 Ill. 2d 28, 37, 485 N.E.2d 321 (1985). Therefore, any authority the agency has to act must arise either from the express language of the Act, or by fair implication and intendment from those express provisions, as an incident to achieving the objectives for which the agency was created. City of Chicago v. Illinois Commerce Commission, 294 Ill. App. 3d 129, 136-37, 689 N.E.2d 241 (1997).

As noted above, the Medical Practice Act was enacted to ensure that the healthcare needs of the citizenry are being attended to by qualified, competent medical personnel. To that end, the Act gives the Disciplinary Board the explicit power to impose sanctions when certain specified violations have been proven. (225 ILCS 60/22 (1998)).

Administrative agencies are authorized, within the statutes which create them, to determine, define and implement such statutes through the adoption of rules and regulations. See e.g., Granite City Division of National Steel Co. v. Illinois Pollution Control Board, 155 Ill. 2d 149, 155, 613 N.E.2d 719 (1993); 225 ILCS 60/8(F). When an agency has acted in its rulemaking capacity, a court will not substitute its judgment for that of the agency. Granite City, 155 Ill. 2d at 162. By the same token, an agency is itself bound by the rules it promulgates, and must adhere to them. Kaszynski v. Department of Public Aid, 274 Ill. App. 3d 38, 45, 653 N.E.2d 1330 (1995).

I ask the Disciplinary Board to look over the evidence presented through the lens of validating if the actions of Dr. Ezike in public meet the high standards the Board expects of all physicians licensed in Illinois. Regardless of any empathy the distinguished medical professionals who seat on this Disciplinary Board may have for the extenuating circumstances that Dr. Ezike was under in 2020; The Board cannot negate the serious charge they have to protect the integrity of the medical profession in Illinois. The Board is bound by the rules it promulgates, and must adhere to them.

With my highest regards;

Justin Mahwikizi
Executive Director
The American Institute of Action

EXHIBIT 1

IDPH Director explains how Covid deaths are classified

00:00 01:03

April 20, 2020 2:13 am Lauren Melendez

CORONAVIRUS, NEWS, TOP STORIES

(CHICAGO) WEEK - State Health officials have acknowledged a bending of the "Covid Curve" seeing smaller spikes in positive cases, or rather, not as exponential of a jump as recorded weeks ago when virus testing capability was much lower.

Additionally, despite the additional virus-related deaths being reported everyday, Illinois Department of Public Health reports those numbers are decreasing too.

Still, the department's Director, Dr. Ngozi Ezike used part of her time during Sunday's health briefing to explain how the department determines if a death is related to Coronavirus.

Essentially, Dr. Ezike explained that anyone who passes away after testing positive for the virus is included in that category.

"If you were in hospice and had already been given a few weeks to live, and then you also were found to have COVID, that would be counted as a COVID death. It means technically even if you died of a clear alternate cause, but you had COVID at the same time, it's still listed as a COVID death. So, everyone who's listed as a COVID death doesn't mean that that was the cause of the death, but they had COVID at the time of the death." Dr. Ezike outlined.

She reiterated Illinois health officials will continue to work vigorously to protect the state's most vulnerable populations.

Lauren Melendez

EXHIBIT 2

State of IL COVID-19 Epi-Modeling Task Force Update

Prepared by Civis Analytics

May 9, 2020

Table of Contents

Executive Summary (1/3)

Overall, changes since last update

- *In addition to Statewide, now a deeper look at the 4 Project Restore regions.* Northwestern was able to produce model results for each of the 11 EMS regions; UIUC produced a model for each of the four Restore Illinois regions; UChicago produced 3 regional models (North-central, Northeast, and Central + Southern). All 3 of the groups' models were combined to provide separate views of the Restore Illinois regions.
- *Additional data.* Models are fit on approximately 2.5 additional weeks of data, and are making use of additional hospital census (ICU bed occupancy, hospital bed occupancy) data from EMResource. UChicago is also using data from a Chicago-area hospital system to inform some parameter choices.

Executive Summary (2/3)

Updated State Models - Summary of latest results and conclusions

- Compared to the previous model forecasts, the updated forecasts are somewhat more pessimistic **(peak is later)** and also cover a somewhat wider range of possibilities. Possible explanations for this include that we're seeing a higher transmission rate in the last 2.5 weeks of data added to the models. For one of the groups, it's also possible that incorporating length-of-stay data provided by one of the hospital partners is a contributor to this as well.
- **Assuming no changes in mitigation**, hospital bed and ventilator resources from COVID-19 patients are **still sufficient**. Of course, this does not hold true if the state begins relaxing stay-at-home orders and other current restrictions without putting other counter-mitigations in place.
- Post-mitigation reproduction rates (R_0) remain near the tipping point of 1, not well below 1. If mitigations are lifted **without simultaneously implementing tight procedures** to monitor, detect and control outbreaks early, we can expect a **resulting surge** in cases and deaths.

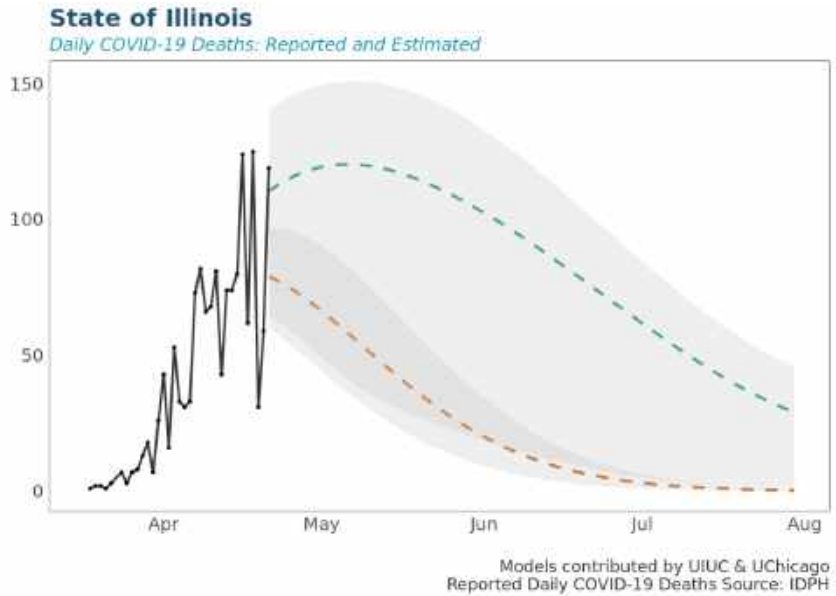
Executive Summary (3/3)

Model Results for Each of the Restore Illinois Health Regions

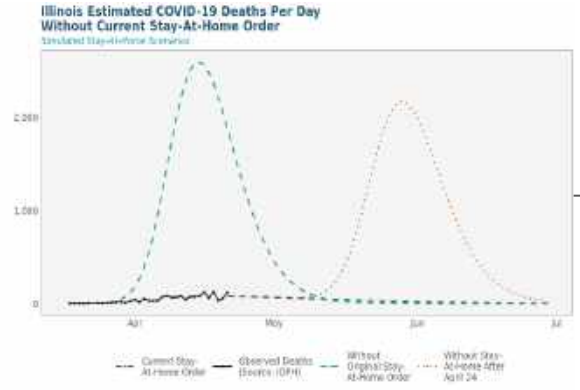
- Looking at the current model forecasts, if mitigations were held in place for the 4 regions defined by Project Restore, the epidemic would be under reasonable control. Lifting shelter in place on May 30th without other mitigation to reduce transmission could lead to a **second wave in each region**, even possibly in areas where there aren't currently many deaths.
- The approach as described by Project Restore is phased and therefore falls somewhere in between an indefinite continuation of current restrictions and a complete relaxation of mitigations. **More work is needed** to understand the model trajectories as a result of the state's phased approach to reopening. Our next update will include insights from simulations of different ways that partial relaxation of mitigations might affect the epidemic."
- Understanding that reopening IL in the next few weeks may be non-negotiable, the public health and epidemiologic experts who are part of this task force strongly recommend putting into place robust **processes for detecting signs of an outbreak, isolating cases and controlling widespread transmission early**. A preliminary introduction to these concepts is provided on slides 17-21.

Modeling Update

Recap: Models shared publicly on 4/22/20

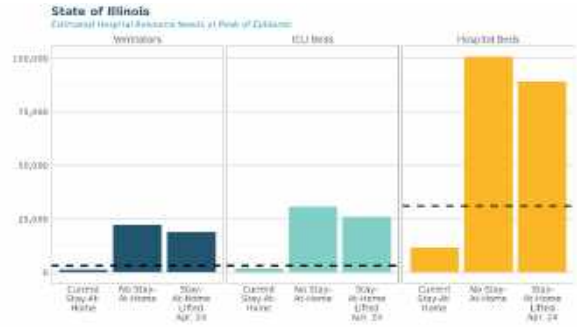


I. Statewide projections provided by UIUC and U Chicago; their Chicago/Cook County models were scaled by population size of state to do this

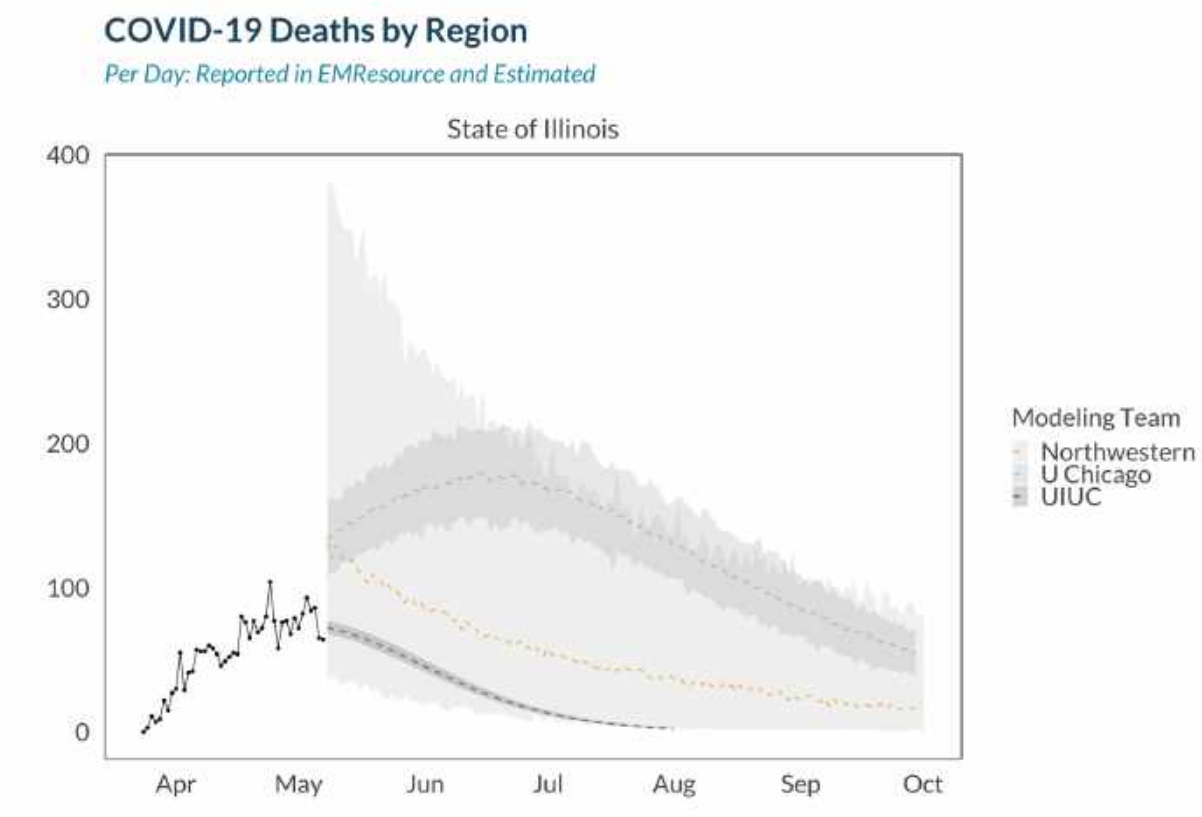


II. 2 scenarios simulated: (1) Stay-at-Home never implemented; and (2) Lifting Stay-at-Home abruptly on 4/23/20

III. Predicted peak hospital resource needs compared to resource capacity



Updated forecasts of COVID-19 for the State of IL

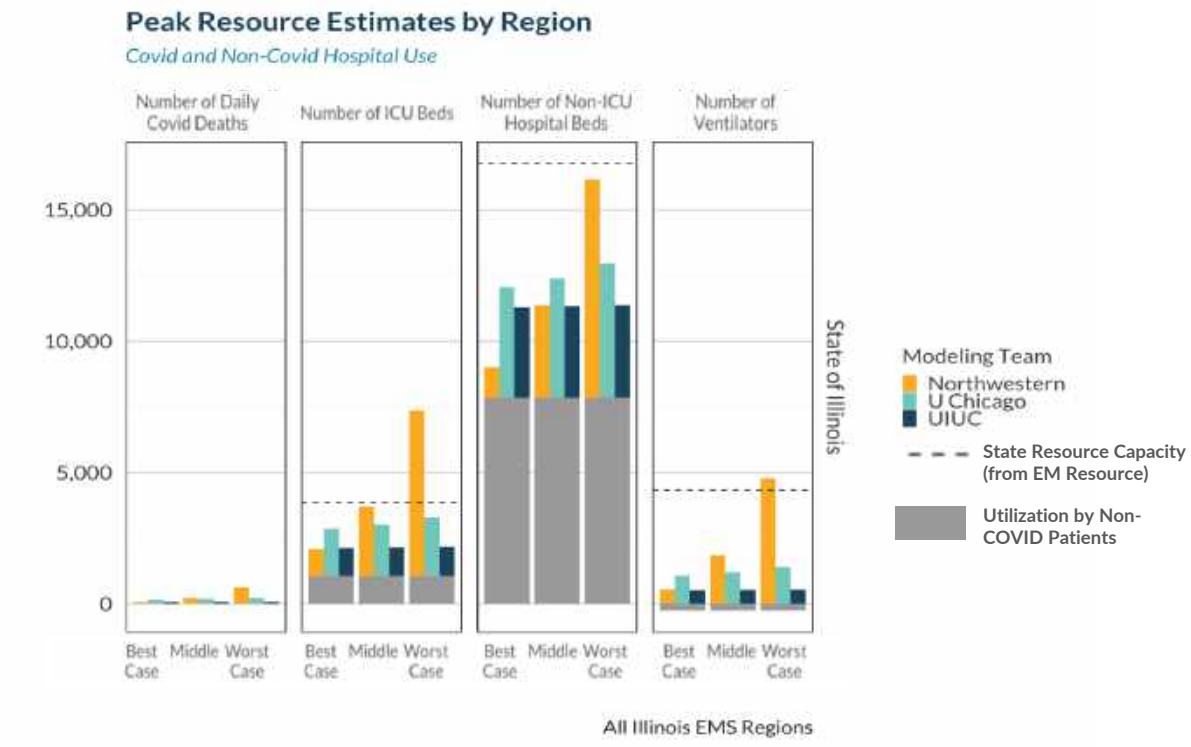


Key Takeaways

- Compared to the previous report, the range of the peak is wider (from now to mid-June)
- This is later than previously reported, possibly because in the additional 2.5 weeks of data, we haven't observed the declines in deaths and hospitalizations that were previously forecasted.

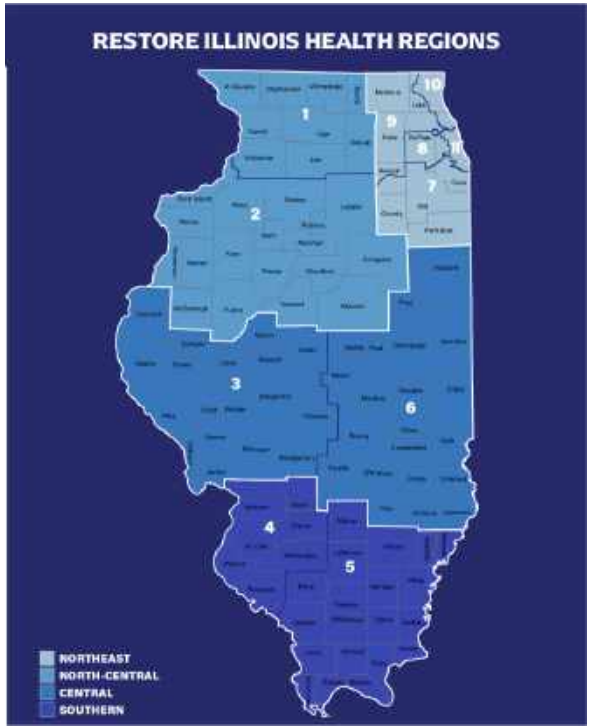
Models still predict that in most cases, the state will have adequate hospital resources to meet need at the projected peak

This is under the assumption that current level of mitigations will remain in place



Reopening Illinois

Model projections for each Restore Illinois Health Region



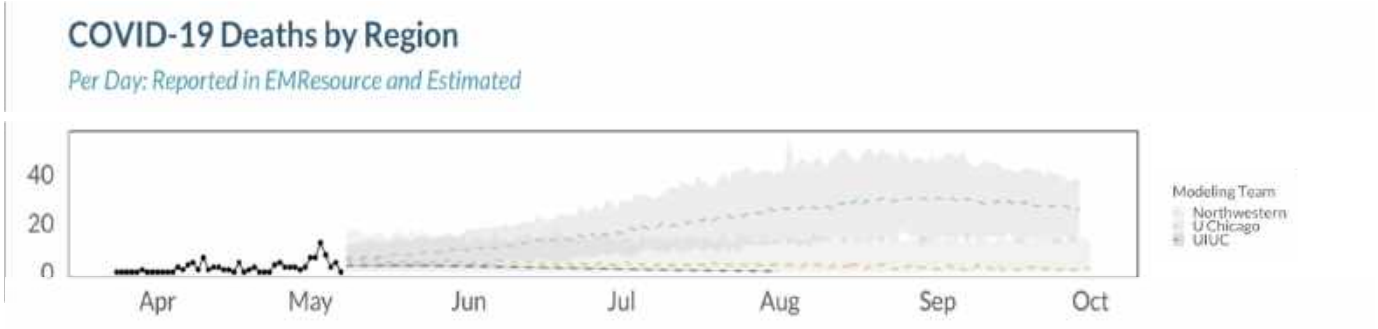
On 5/5/20, it was announced that as part of the Restore Illinois plan, the following EMS regions will be grouped into larger "superregions":

- North-Central IL: EMS Regions 1, 2
- Northeast IL: EMS Regions 7-11
- Central IL: EMS Regions 3, 6
- Southern IL: EMS Regions 4, 5

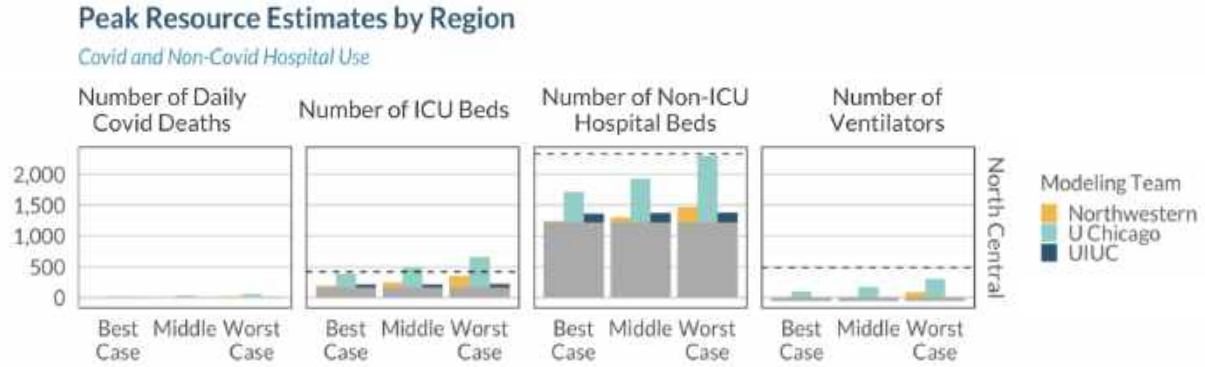
In the following pages, we've summarized the available results corresponding to the ***baseline scenario of what would occur if current mitigations (including stay-at-home orders) were held in place*** for each of these superregions.

Model Projections for North-Central IL

If current mitigations are held in place, UChicago predicts a gradual surge in cases peaking in early fall

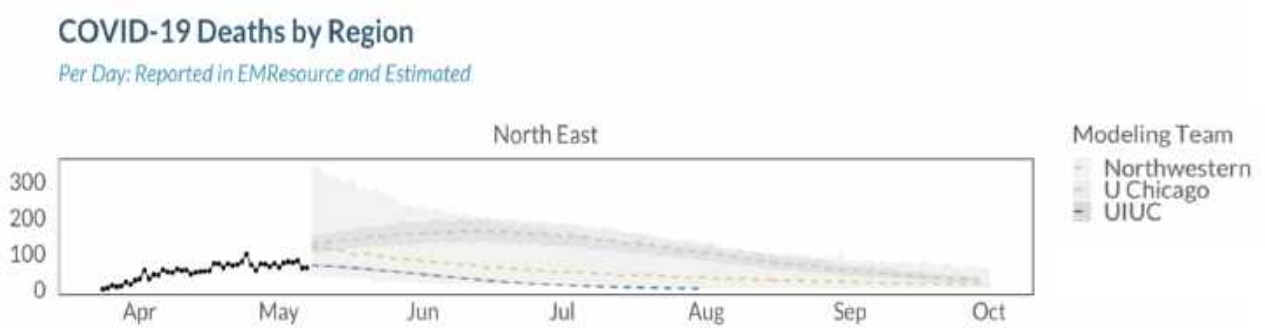


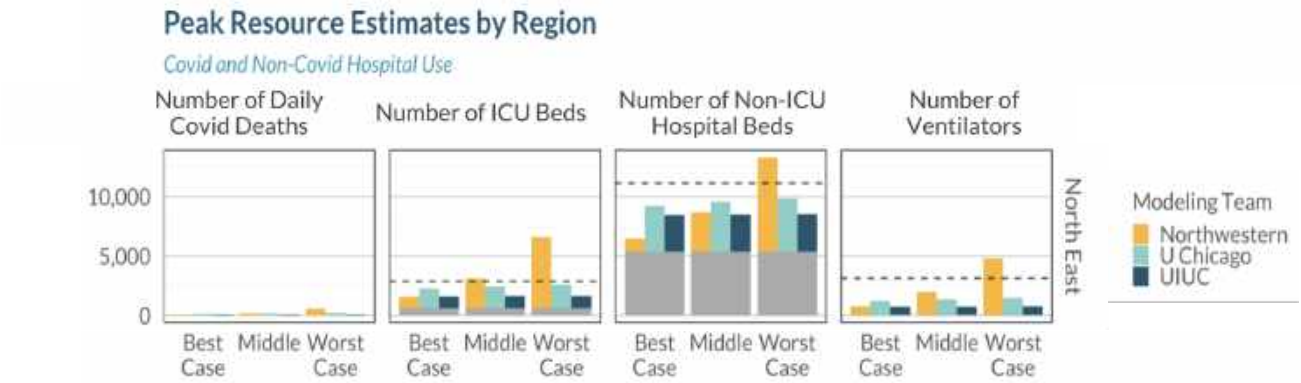
At the peak of the outbreak, UChicago estimates that ICU bed capacity will be met or exceeded in all cases and that non-ICU bed capacity will be met in the worst case scenario.



Model Projections for Northeast IL (Chicago area)

Because most cases have occurred in Chicago, the state's curves most resemble this region's curves

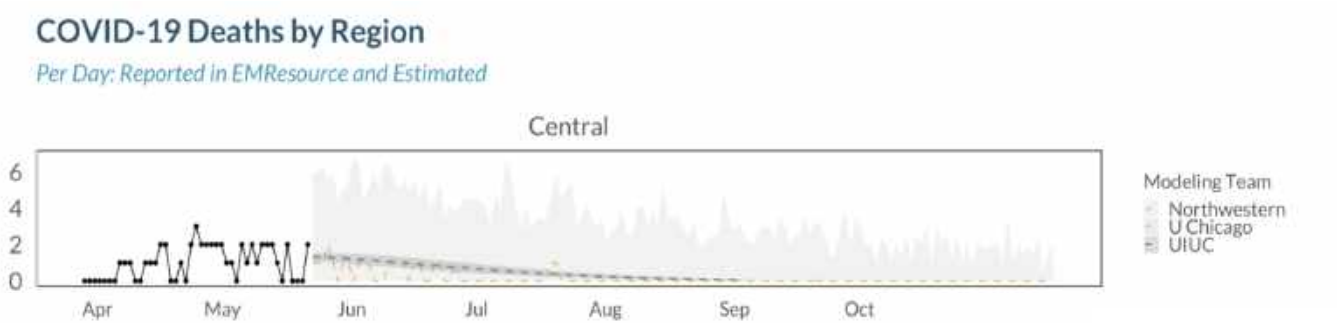


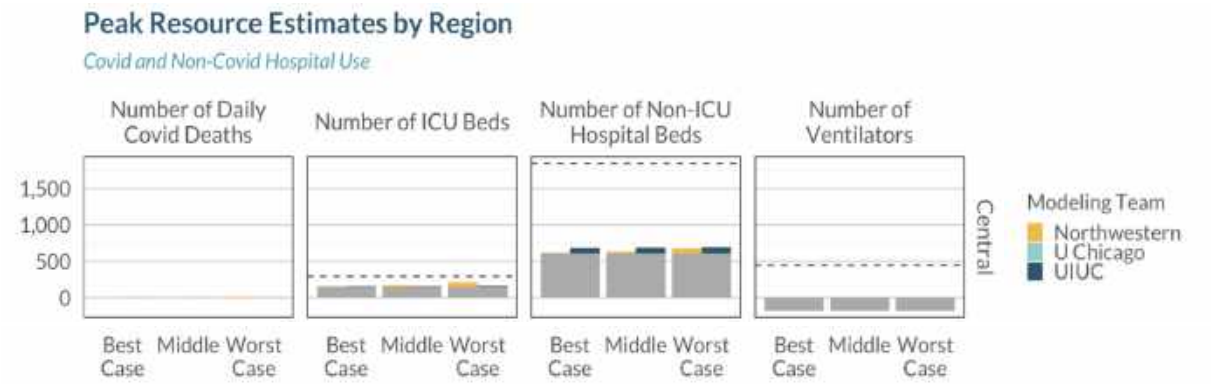


Model Projections for Central IL

Of the 4 superregions, Central has the most favorable projections for peak and resource capacity

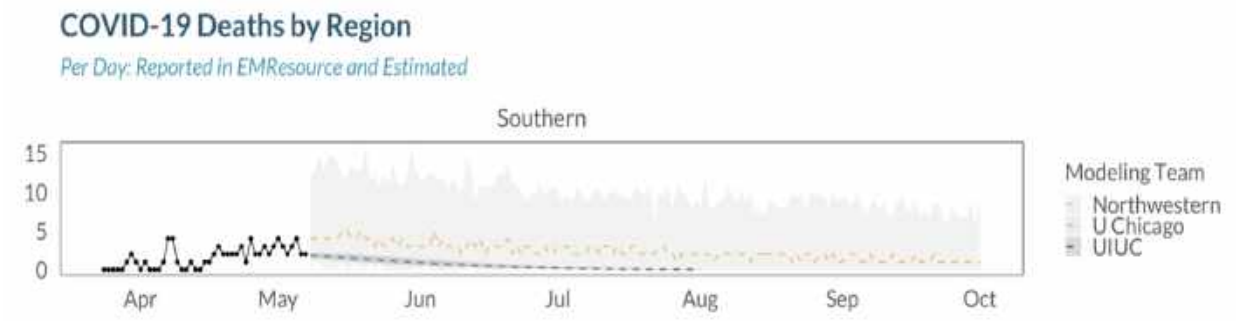
Central region has had very low activity to-date and all 3 of the modeling groups predict few deaths as long as transmission remains low. Central region also appears well-equipped with hospital resources.

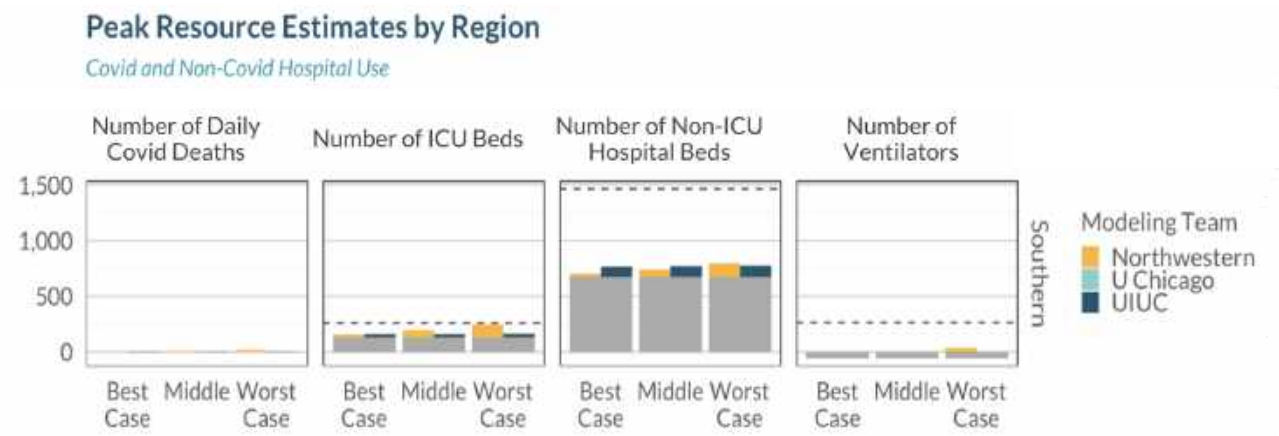


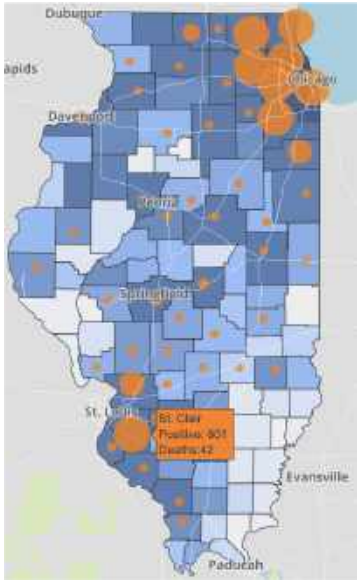


Model Projections for Southern IL

Southern IL superregion includes the East St. Louis area, where high activity is being observed







Sentinel Surveillance for Safely Reopening Illinois

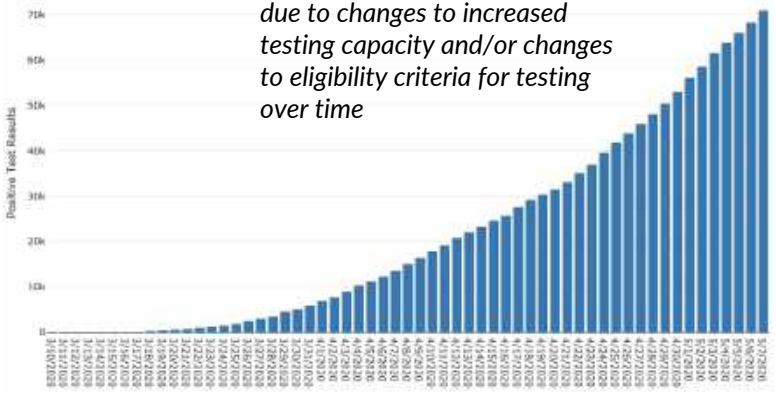
Monitoring, Detecting and Controlling Regional Outbreaks

Testing in sentinel surveillance population is absolutely critical to safely reopening the state

- As Illinois reopens, it's absolutely critical to prevent new outbreaks of COVID-19 in reopened areas. **All areas remain vulnerable**, since all populations are far from the herd immunity threshold. We estimate approximately **7-8% of the population of Illinois has gained immunity through infection, but 60-80% need immunity to avoid future outbreaks.**
- Safely reopening Illinois requires knowing as quickly and accurately as possible if it looks like current interventions aren't working and we need to introduce new strategies. The same detection systems would allow us to know as soon as possible if current interventions are working well and a region can move onto the next stage of reopening.
- We need a **strong, well-designed surveillance system** to get us **fast and actionable information** on **COVID-19 across Illinois**.

The Limitations of the Data We Have Today

It's unclear if these trends are due to changes to increased testing capacity and/or changes to eligibility criteria for testing over time



Source: IDPH

- Changes in the total number of test-positive cases or the fraction testing positive are an unreliable measure of shifts. These numbers should not be used to determine policy.
- Hospitalizations, ICU occupancy, and deaths are all later events in the course of disease, so these events are too late to estimate the rate of transmission in the community. For reference, **symptom onset precedes hospitalization by approximately 4.2 days, ICU admission by 6.7 days, and death by 11.7 days.**
- In the best of all worlds, we would assess changes in prevalence--which reveal current transmission rates--through random testing of the general population over time. But this is impractical due to costs.

Sentinel Surveillance: Using surrogate populations to track recent infections and transmission in the general population

Not just increased testing, but testing in a predefined population using consistent criteria

- We propose to track infection rates in two types of sentinel populations: (1) **pregnant women** presenting for delivery, and (2) a fixed number of **symptomatic individuals appearing daily at outpatient testing sites**.
- Tracking newly symptomatic infections means we will have more advance notice that trends are moving in the wrong direction, which will give us **more time to prepare to respond** than if we simply tracked hospitalizations or deaths.
- Another surrogate population that should be established are **patients admitted to the medical ICU**. As long as ICU capacity is not exceeded, this is a very reliable indicator of epidemic activity, and has been recommended for tracking influenza prevalence in epidemic settings. This is one of the strategies currently used in Hong Kong for COVID-19.
- Several of the members of our modeling task force have **significant expertise designing such programs** for respiratory viruses such as influenza and have already begun composing detailed plans for how COVID-19 surveillance testing could happen here in Illinois.

Next Steps

High-Level Project Plan

	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	...
Modeling Team							
Models v.1	Incorporating hospital data from IDPH ("EMResource) and creating projections through end of July, assuming current interventions remain in place)						
Model Refinements		Create statewide projections by running models for separate areas of IL and run scenarios e.g. lifting SIP sooner vs. later. Incorporate additional data from IDPH and hospitals.			Create regional models, incorporate detailed data from IDPH, aggregate to 4 Restore Illinois Health regions		
Civis Team							
Identifying & Onboarding New Data, e.g. IDPH line-level data and hospital data	• EMResource data (aggregate count data from hospitals) from IDPH • Line-Level data from IDPH • Line-Level and aggregate data from select health systems • Mobility data from IDOT, Google • Case management data on patients recovering from COVID-19						
Discovery interviews with additional modeling groups as identified	IDPH, CDPH (McKinsey), Cook County, UIUC, UChicago, NW, IHME	Northshore Health System, Vizient/SG2	Argonne National Laboratory	Others			
Consolidation of Modelers' Results and Productionizing into Reports, Dashboards			Status updates, pipeline building and dashboarding				

Appendix

Non-ICU, ICU and Ventilator Capacity for the Super Regions and State of IL

Geography	Northeast	North-Central	Central	Southern	All of Illinois
Hospital Bed Capacity	10,903	2,328	1,833	1,394	16,458
Adult ICU	2,826	409	289	240	3,764
Vent Capacity	2,780	450	360	240	3,830
Date of Extract	5/5/2020	5/5/2020	5/5/2020	5/5/2020	5/5/2020

Sources: EMResource on May 5, 2020

Additional capacity due to buildout of McCormick Place and other ACS needed to further refine these estimates.

Modeling Team Experts

COVID-19 Modeling Team Leads		
University of Chicago	**Title**	**Contact**
Sarah Cobey, PhD	Associate Professor, Ecology and Evolution	cobey@uchicago.edu
University of Illinois at Urbana-Champaign		
Nigel Goldenfeld, PhD	Professor, Biological Physics	nigel@illinois.edu
Sergei Maslov, PhD	Professor, Biological Physics	maslov@illinois.edu
Northwestern University		
Jaline Gerardin, PhD	Assistant Professor of Preventive Medicine (Epidemiology) and McCormick School of Engineering	jgerardin@northwestern.edu
Argonne National Laboratory		
Charles Macal, PhD	Senior Technical Advisor & Social, Behavioral, and Decision Science Group Leader	macal@anl.gov
Jonathan Ozik, PhD	Computational Scientist	jozik@anl.gov


CIVIS®

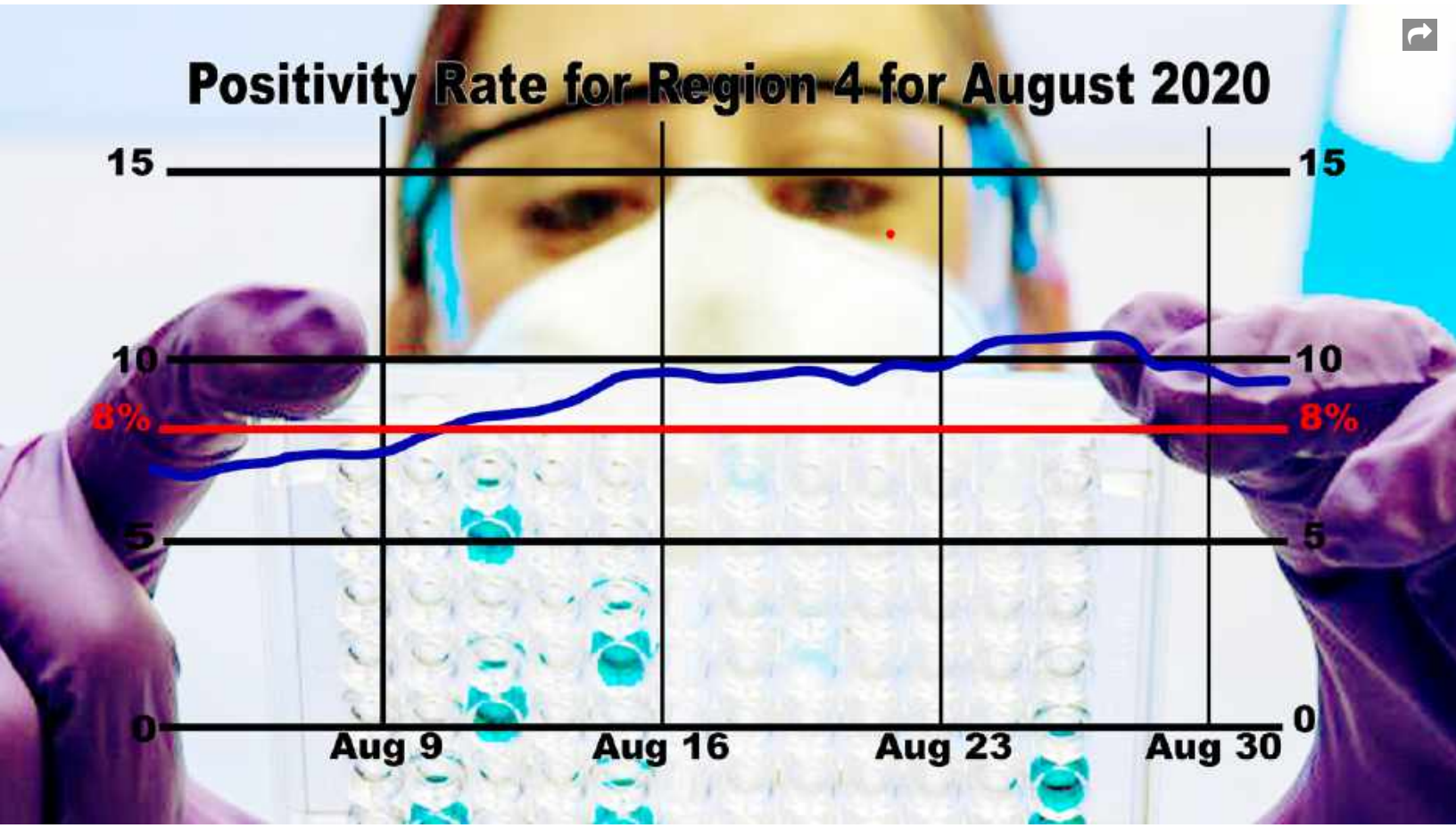
EXHIBIT 3

We REBUILD

You can't eat in a restaurant because of the COVID positivity rate. Is it accurate?

BY KELSEY LANDIS

SEPTEMBER 05, 2020 05:00 AM, UPDATED OCTOBER 15, 2020 12:11 PM



Several scientists were questioned about the accuracy of the coronavirus metrics used by IL Governor JB Pritzker to ban indoor dining in bars, restaurants and places to eat.

BY BELLEVILLE NEWS-DEMOCRAT

Listen to this article now

08:33 Powered by Trinity Audio

For the second time this year, Jeff Vogt will have to return to an all-takeout menu at

That's because the percentage of COVID-19 tests coming back positive in the metro-east surpassed 8% for three consecutive days on Aug. 18 — the official trigger for tougher restrictions.

It means layoffs and lost revenue at the restaurant known for its brisket and homemade sides. Yet Vogt admits he doesn't really understand why positivity rates seem to hold such power.

Protesters call for southern IL Congressman Mike Bost's resignation after riot in D.C.

"I try to read and educate myself and listen to the people who I think understand it," Vogt said. "I don't get it. I wish I understood it better."

Despite its pivotal role in tracking the virus and informing decisions about community response, scientists don't agree on how well positivity works as an indicator of where the virus is headed in a given region.

No one in the scientific community or state and local government says COVID-19 is anything less than a deadly problem. In the metro-east alone, 52 people succumbed in August. Hundreds more were infected and dozens hospitalized, with the long-term effects of the disease still unknown.

But the positivity rate is not a useful number without adequate testing, said Sarah Cobey, an associate professor at the University of Chicago who specializes in ecology and the evolution of pathogens. That is the case in some metro-east counties.

"I have been very critical of their use of this metric and basically almost all of the metrics they've proposed so far because they are not scientifically founded," said Cobey, who has advised the Illinois Department of Public Health on tracking. "They're roughly right, but they're not metrics you want to hang your hat on."

Cobey said the state wanted to use a metric the public could understand and calculate on its own.

There's no denying its simplicity. Divide the total number of tests by the number of positive tests and multiply by 100. Epidemiologists consider 5% an indicator that the virus is mostly controlled in a region.

Other scientists say the positivity rate is reliable and one of the best and only real time indicators available.

"You have to rely on things that are actually happening in real time and that computers can grab," said David Dowdy, associate professor of epidemiology at Johns Hopkins University. "The number of tests that are performed and the number of positive tests that are detected are two pretty easy indicators to find."

The perfect metric to capture the spread of COVID-19 doesn't exist, the scientists agree. But political pressure to find one mounted last week after Democratic Gov. J.B. Pritzker confused the public and regional leaders by treating two Illinois regions differently in implementing new restrictions.

It's time to revisit the positivity rate as the gold standard for restrictions, said state Sen. Paul Schimpf, R-Waterloo.

"We need to recognize that there is some concern about its accuracy."

WHAT IS THE POSITIVITY RATE?

Vogt, the Waterloo restaurant owner, isn't alone in feeling perplexed by the overall concept. Even some of the state's top epidemiologists are stumped as to why the state chose 8% positivity as the threshold for taking action to slow a resurgence of the virus.

"To be honest, there is no scientific explanation for those numbers," said Jaline Gerardin, assistant professor of preventative medicine at Northwestern University who has worked with the state on tracking the virus.

IDPH chose 8% as the threshold to help avoid potential confusion caused by rapidly changing restrictions, IDPH spokesman Cris Martinez said.

Once restrictions are activated by the 8% rate, a region has to show 6.5% test positivity or below for two weeks before the rules are relaxed. Setting the threshold for restrictions a full percentage point and a half higher allows for some wiggle room so rules aren't changing every day.

"It is not reasonable to expect people and business to follow control measures that change every few days," Martinez said.

Positivity can be useful in showing two things: whether enough testing is being done and how widespread the virus is. The two go hand-in-hand. When large portions of a population are tested, the positivity rate can be a reliable indicator that all, or close to all, infections have been identified, public health professionals say.

time.

A lot of testing can drive positivity down even as more cases are discovered, but “it’s not intended to be a true reflection of how many people in the general population have COVID-19,” said University of Illinois physics professor Nigel Goldenfeld, a key figure in Illinois’ pandemic response.

The problem in the metro-east is insufficient testing, said St. Clair County Chairman Mark Kern, and that those who are tested are likely symptomatic. The result is enormously high percentages that don’t accurately reflect how the virus is spreading.

For instance, Bond County in the metro-east on Tuesday reported a daily positivity rate of 55.6%. That’s because only 18 tests were conducted and 10 came back positive, Kern said.

High positivity drags down the cumulative rate for the metro-east region, which IDPH calls Region 4 and defines as Bond, St. Clair, Madison, Monroe, Washington and Randolph counties. When the overall rate surpasses the 8% threshold, the entire region sees restrictions even if just a few counties are the cause.

Lawmakers such as Schimpf and state Rep. Charlie Meier, R-Okawville, have urged the governor to use hospitalizations instead. Hospitalizations can be a good indicator of COVID-19’s presence, Gerardin said, but the data often lags behind by 10 to 17 days. Ideally, epidemiologists would have more up-to-date estimates of how transmission rates are changing.

Regardless, relying on the positivity rate that doesn’t reflect the real picture is unfair to businesses such as JV’s in Waterloo, Schimpf said.

“(Pritzker’s) plan relies on the positivity rate as a trigger for actions, even though we’ve clearly seen that in Region 4, the positivity rate does not contain sufficient accuracy or insight to meaningfully assess the spread of COVID-19,” Schimpf said. “ … It’s kind of unfair that a businesses like (JV’s) is being evaluated on a metric that includes stuff that they have no control over whatsoever.”

OTHER METRICS FOR TRACKING COVID

Economics aside, incomplete information about the virus’ spread makes it difficult for public officials to respond effectively, Cobey said. There are other metrics for tracking how widespread the virus is in a community and for making decisions.

One of them is a sentinel surveillance program that would track a group of people with similar characteristics, such as showing the same severity of symptoms for around the same period of time, and who are easy for health care professionals to reach for testing, Gerardin says. Scientists could glean information about the virus’ prevalence from the sample population.

“The advantage of that is that it is consistent,” Gerardin said.

Bringing the data together for a sentinel population would be “really challenging,” she added, because it means compiling test results, surveys and other details. Additionally, collecting a random sample that represents the population takes time, said Dowdy, the Johns Hopkins professor.

“You can’t do that on a daily basis,” Dowdy said. “It’s hard enough to figure out how to get a random sample of people. It’s really hard to do a good study that’s representative of the population, and by time you’ve done that, it’s already a month or so gone.”

the positivity rate fraction can show how many tests it took to reveal a positive case. This provides a better indication of whether testing is sufficient, the researchers say.

If it took 20 tests to find one case, it could indicate that more than just symptomatic people are getting tested. If the number of tests it took to find a positive is low, it could mean there are more undetected infections and reveal the need for more testing.

In a place like Bond County where few tests are performed at all, neither ratio works. There's no way to determine how widespread the virus is in a community when there's not enough testing.

Even an area with plenty of testing could have a misleading positivity rate, Dowdy said.

"If you have an area that does a lot of testing on a large part of their population, that's going to drive down their percent positive even if they have a reasonable amount of transmission in the community," Dowdy said. "There's not a single number that you can say, 'This indicates uncontrolled transmission.'"

The governor's office and IDPH have shown a willingness to work on the data scientists think is more accurate, Cobey said. Meantime, she hopes the public doesn't take criticism of the state as an effort to sabotage genuine public health efforts.

"Some people will take any criticism of the response so far as an excuse to behave totally recklessly," Cobey said, "and I don't want that."

Jaline Gerardin, assistant professor of preventative medicine at Northwestern University who has worked with the state on tracking the virus. PROVIDED

KELSEY LANDIS

618-239-2101

Kelsey Landis is an Illinois state affairs and politics reporter for the Belleville News-Democrat. She joined the newsroom in January 2020 after her first stint at the paper from 2016 to 2018. She graduated from Southern Illinois University in 2010 and earned a master's from DePaul University in 2014. Landis previously worked at The Alton Telegraph. At the BND, she focuses on informing you about what your lawmakers are doing in Springfield and Washington, D.C., and she works to hold them accountable. Landis has won Illinois Press Association awards for her work, including the Freedom of Information Award.

EXHIBIT 4

People Are Dying. Whom Do We Save First With the Vaccine?

With limited doses available, and a pandemic claiming more lives every day, a complex moral calculus has begun. Five thinkers weigh the choices ahead.

By Emily Bazelon

Dec. 24, 2020

In mid-December, before a key vote by an advisory panel for the Centers for Disease Control and Prevention, a public debate flared up over what might well be the most momentous policy decision of 2021: how to distribute the Covid-19 vaccine. This particular fight centered on how to balance the vaccination of seniors (who die from the coronavirus at much higher rates than younger people) against that of essential workers (who, because they come into contact with many people over the course of any given day, risk getting sick themselves and becoming superspreaders).

That debate was just the first of what will be many contentious ones in the months to come, when supplies of Covid vaccine will surely be among the world's most precious, scarce resources. The calculation of how to prioritize various groups inevitably touches on all the fault lines that divide American society — race, class, age, geography, occupation and more — and ultimately bleeds into the question of our ethical obligations to the poorer nations of the world, which risk being forced to wait for lifesaving vaccine supplies while the wealthy save themselves first.

More starkly than most policy choices, these decisions will essentially determine who dies and who lives. We brought together five experts to talk about the collective ethical judgments that the world faces — and a logistical challenge that's as epic in scale as the pandemic itself.

The Panelists

Ngozi Ezike, an internist and pediatrician, is the director of the Illinois Department of Public Health. She previously worked for 15 years in the Cook County health system, where she delivered inpatient and outpatient care and directed medical services at the Cook County Juvenile Detention Center.

Gregg Gonsalves is a professor of epidemiology at the Yale School of Public Health and an AIDS and global health activist. He is also a 2018 MacArthur Fellow.

Juliette Kayyem is a professor at the Harvard Kennedy School, where she is the faculty chairwoman of the Security and Global Health program, and a former assistant secretary at the Department of Homeland Security. She is advising a number of public and private entities on pandemic response and vaccine distribution.

Siddhartha Mukherjee is a professor of medicine at Columbia University and a cancer physician and researcher. He is the author of "The Emperor of All Maladies: A Biography of Cancer," which was the winner of the 2011 Pulitzer Prize in general nonfiction. He is a founder of a vaccine-delivery platform called Othena.

Peter Singer is a bioethics professor at Princeton, author of "The Life You Can Save" and founder of the charity of the same name. His most recent book is "Why Vegan?"

Emily Bazelon, a staff writer for The New York Times Magazine, moderated the discussion, which has been edited and condensed for clarity, with material added from follow-up interviews.

Who Goes to the Front of the Vaccine Line?

Emily Bazelon: As vaccination begins, the C.D.C. has recommended that the first group of American recipients should be health care workers, who total approximately 21 million, and residents of nursing homes and other long-term-care facilities, another three million. This is called Phase 1a. For Phase 1b, the agency decided after much debate to recommend people age 75 and older, who number about 20 million, and also 30 million "frontline essential workers," including first responders; grocery-store, public-transit and postal workers; and teachers and day care providers. The states don't have to follow this federal guidance. Regardless, they have difficult decisions to make about how to rank subgroups within Phase 1a and 1b as the vaccine gradually rolls out. Dr. Ezike, as you look ahead, what do you see coming in Illinois?

Ngozi Ezike: Phase 1a seems to be the most straightforward. We are starting with health care workers on Covid units. Not just the clinicians but the person who delivers the food, the person who cleans the room and who turns the room over after a patient is transferred. So, people in direct contact with Covid patients, or the infectious particles. And then people who work in the emergency room and in urgent care. We also signed up for the pharmacy partnership program that the C.D.C. offered, and Walgreens and CVS will bring the vaccine to our long-term-care facilities. After that, there is a middle bucket of health care where the work is mostly outpatient but they have some interaction with the public. Then the group at the end of Phase 1a would be health care workers who are tele-working or administrative.

For Phase 1b, I haven't presented a plan to the governor yet, but this is where I am so far: I'm very concerned with the over-75 category. When I look at my data, the average age of death from Covid for a white person is 81, but for a Latinx person it's 67, and for a Black person it's 72. Many of the people in these groups don't even reach 75. I'm not sure what the right age brackets are, but I want to think about how to make it equitable and data-driven, based on the average age of death from Covid.

Bazelon: Race and ethnicity have become a flash point in this debate. Black and Latino and Native American communities have been hit especially hard by the virus, with death rates that are close to three times as high as they are for white and Asian people. But the idea of giving people priority for the vaccine based *only* on race has generated a lot of criticism, and the chair of the C.D.C. panel (the Advisory Committee on Immunization Practices) said that was never the plan.

Ezike: There are examples in medicine where the guidelines are different — for example, for prostate cancer, Black men are recommended to be screened at a younger age because the prevalence is higher in that population. We are also thinking in terms of preventing the spread of infection. Our highest case rates are in Latinx communities, where we have more multigenerational households.

Gregg Gonsalves: The virus has spread in the United States along the fault lines of social inequality. Vaccines and medical interventions won't roll out to protect people who have been hit hardest unless we allocate based on social vulnerability. The National Academies of Science, Engineering and Medicine has said we need to do this using the C.D.C.'s Social Vulnerability Index, which the agency developed for public-health emergencies. It can pinpoint geographic areas based on factors like living in crowded housing as well as socioeconomics and race and ethnicity. The index designates many rural communities, along with some urban ones, as at increased risk.

So for Phase 1b, if you have 10,000 doses of vaccines in a small city, you might reserve more of them for neighborhoods that rank higher for social vulnerability. These choices will be made differently in different places, but we shouldn't turn a blind eye to the disparate impacts of this epidemic.

Ezike: Absolutely. The goal is to get everyone vaccinated, but you push out doses in weighted numbers so high-risk areas get more vaccine first. We can stop a lot of the clusters that are nodes of infection if we get to those people who have no choice but to show up at work, often to feed their families, in high-risk, public-facing settings.

Peter Singer: It makes sense to protect those who are most vulnerable, whether the vulnerability is social or health-related. So if the evidence indicates that Black, Latino or Native American people have a higher risk of dying from the virus, they should be offered the vaccine ahead of others of the same age who are at lower risk because they are white or Asian. But a document that was circulated in November to A.C.I.P., the C.D.C. panel, suggested that the fact that racial and ethnic minorities are underrepresented among those older than 65 is a reason for giving lower priority to that age group as a whole and instead vaccinating more than 100 million "essential workers" ahead of them. The effect would be that more people over all would die — and also that more members of racial and ethnic minorities would die, because the higher fatality rate in older people would outweigh their lower share of representation in that age group. That's absurd. Equity for disadvantaged minorities can't tell us to distribute vaccines in a manner that will mean more deaths in those communities themselves.

Fortunately, the C.D.C. has not adopted this view. Instead it has recommended priority only for the much smaller group of "frontline essential workers." The case for doing this is stronger than the misconceived notion of equity that appears to have been the grounds for the original suggestion.

Bazelon: Allocation involves trade-offs. In the United States, at press time, we have about 100 million complete vaccinations (two shots each) on the way from Pfizer-BioNTech by the end of July and another 100 million from Moderna planned by the end of June. But for months, it seems clear, demand will far outstrip supply. What do you think about the priorities that the C.D.C. has recommended so far, and what about the remaining groups at potentially heightened risk — people who are over 65, people who have a high-risk medical condition, essential workers who don't fall within the "frontline" definition the C.D.C. used, people who are homeless or in congregated settings like jail and prison. What moral framework do we use for deciding who goes where in line?

Singer: The objective that we should aim for is to reduce *years* of life lost. I know a lot of people are talking just about saving lives. But I do think that it's different whether somebody dies at 90 or 50 or a younger age still. So, in my view, that's what we should be looking at.

Bazelon: The British government plans to first vaccinate people age 80 and older, along with frontline health workers, then people 75 and over, and so on through age 65, before everyone else.

‘The virus has spread in the United States along the fault lines of social inequality.’

Singer: The basis for the British government’s plan is, of course, to treat those who are at the highest risk of dying and thus to minimize the number of deaths. But it is also important to consider what your life would be like if you don’t die.

It might still be that we should protect 90-year-olds first, based on data suggesting that 90-plus are at eight times the risk of dying from the virus as people around 70, whereas their life-expectancy difference is roughly something like four and a half years as against 15 years for 70-year-olds. If that’s correct, then the higher risk to the 90-year-olds outweighs the difference in life expectancy.

But even there I would make some exceptions. I don’t know whether the public-health systems are going to be able to do this or whether the political leaders are able to accept it, but if we are talking about everybody in an elderly-care home getting vaccinated, I think we should ask questions about the quality of their lives. Going back many years, looking at ethical issues about end-of-life decisions, many doctors tell me that when patients have severe dementia, they do not treat conditions like pneumonia. Even though you could treat it with antibiotics relatively simply, they say, there’s a time to let a patient go. If a patient is not capable of expressing a view on whether or not to receive treatment — and that includes vaccination — families should be consulted, and they should make the call. We shouldn’t just go through nursing homes and automatically vaccinate those who are not capable of giving consent.

Now, in other cases, obviously with health care workers, there is an indirect benefit to vaccination. It’s not just their lives that we’re trying to save, we’re trying to protect the lives of the people that they serve.

Juliette Kayyem: To me the question of priorities for Phase 1b is like a badly bruised airplane coming down for a landing. You put the oxygen mask on those who can help. You save the helpers, and then you help others. In this case, that’s the frontline essential workers.

Singer: Setting priorities in this phase should depend on the impact on essential services. For services in which workers are mostly young, and even if they get the virus they’re not likely to have severe symptoms, and they will not be absent from work or will be absent only briefly, then maybe you don’t have to vaccinate them first. But if we have essential services that are really being set back by the fact that people are getting the virus — for example, if we’re at risk of not having enough truck drivers to deliver the vaccine — that would be a reason to give these workers high priority.

Bazelon: That makes me think of teachers. The service of in-person schools has been cut off in parts of the country for 10 months now. This has come at a huge cost to kids, in terms of learning loss and social and emotional development. Some vulnerable kids aren’t in school at all. Children generally have borne a greater share of the burden of the virus than we often talk about.

Gonsalves: If schools should be last to close, first to open, perhaps we should put teachers right up there. In the recommendations for Phase 1b, the A.C.I.P. split the difference in some ways by saying the next round should go to people age 75 or older and also to frontline essential workers, including teachers. They are looking both to reduce mortality and keep society functioning.

Kayyem: Education is critical infrastructure. We didn’t designate it as such, as we did with electricity and water or the food-supply chain. But it turns out that a society cannot move, literally cannot flow, if parents are at home because of kids. The economic impact has been huge. And on the other side of this pandemic, the long-term impact for kids who were already behind is disastrous. Shame on us for not treating school as critical infrastructure before this. We should fix that. And the number of vaccinations we need to open the schools, for teachers and staff — 6.6 million in public schools — is relatively small relative to the general population.

Bazelon: In thinking in terms of years of life saved, research suggests that children who fall behind because of elementary-school closures are likely to have shorter life expectancies, on average. The same may be true of older students as a result of lower graduation rates.

Gonsalves: There are other trade-offs to consider, outside of schools. Suppose we’re interested in preventing the most new infections, not the most deaths. Then we’re looking for places where transmission is high, like prisons and meatpacking plants.

Kayyem: For people in jail and prison, whom the C.D.C. did not include in the first or second phases, I don’t have a legitimate argument for why they are different, in terms of vaccine priority, than people in senior care homes. It’s the same pool: people who don’t control their own movement, who are disparately impacted, especially elderly prisoners.

Gonsalves: It’s hard to make these complex trade-offs. Look, my parents were schoolteachers. I’d put teachers at the front of the line too. But to say how I would have written the recommendations for A.C.I.P. — I don’t know. Science can help frame these choices, and we should rely on the data to guide us but also understand we are making social, value choices as well.

Bazelon: Is it useful to have a federal authority, meaning the C.D.C., that makes recommendations to the states?

Ezike: Oh, absolutely. And I recently had a call with some of my counterparts in neighboring states. If we can decide on vaccine priorities as a collective, there’s also power in numbers.

Siddhartha Mukherjee: As a scientist and as an immunologist, I'd like to bring up another consideration — or another kind of value. I see value in more broadly distributing at least a little vaccine in the earlier phases so that we can understand its success and failure rates in the real world, across various populations. In the trials that have been done so far, Pfizer's and Moderna's vaccines were each tested on 30,000 to 40,000 people. Now we are in a phase of massive expansion. We need a broader range of people to figure out, Is this really working? Is it really preventing infections across all the groups that need to be protected? Six months from now, we don't want to still be asking that question.

Gonsalves: This is a huge issue. I don't think the vaccine makers have cut corners on safety, but to understand the long-term effects, we have to formally evaluate the vaccines in the broader population, not just watch passively to see what happens.

Mukherjee: For instance, we'd like to know how the vaccine affects women who are pregnant and people who are partially immuno-compromised, and young kids. And we'd like to know about drug-vaccine interactions — if a particular drug you're taking changes the effectiveness of the vaccine. Remember, we are going to try to vaccinate billions of people. And so, we really need to understand as deeply as possible. That's not an easy task.

Photo illustration by Tyler Comrie

How Does the Rollout Work?

Bazelon: The ethical considerations about who gets priority for the vaccine loom very large if we imagine people waiting for many months, whereas if you imagine people waiting for weeks, then they become less fraught. How long will it take to get all the high-risk groups vaccinated? When will the vaccine get to the general population, and how do we know we'll have enough?

Covid-19 Vaccines ›

Answers to Your Vaccine Questions

If I live in the U.S., when can I get the vaccine?

While the exact order of vaccine recipients may vary by state, most will likely put medical workers and residents of long-term care facilities first. If you want to

understand how this decision is getting made, this article will help.

When can I return to normal life after being vaccinated?

If I've been vaccinated, do I still need to wear a mask?

Will it hurt? What are the side effects?

Will mRNA vaccines change my genes?

Kayyem: Are you asking whether your kids can get out of the house this summer?

Bazelon: Yes, I'd like to know that!

Kayyem: I think the answer is yes. I'll talk in terms of seasons, not dates, because there are some big things we don't know yet. First, how soon does the C.D.C. approve the Johnson & Johnson vaccine? That's the one I really like, because it might work as one shot, not two, and it doesn't have to be kept cold, which just makes it easier from a logistics perspective. So that's an important unknown piece. Then also, President Trump has not yet invoked the Defense Production Act for vaccination. That would ensure that we are compelling or incentivizing U.S. companies to ramp up production of syringes and needles, gloves, storage facilities and anything else we need to support the whole enterprise. I don't know how much the Biden team can see into what's happening now, but they'll want to keep money and supplies pumping until the whole population is vaccinated.

Look, the hardest part is done. We have the vaccine. But the rollout won't be perfect. You're going to have broken-down trucks and lost packages and people who should have shown up and didn't show up. You are going to hear the story of this 65-year-old man and the woman of his dreams whom he has been married to for 40 years, and she is 64, so they're separated by three months in the vaccine line.

But I think by spring, we'll start to reach the general population. And we will get better and faster as more vaccines get approved. Manufacturing will move faster. We will have a new administration that can look past a president's ego. Think of it like a tidal wave, starting slowly and then getting bigger. I have confidence that by this summer we will be well en route, if not all the way back, to normal-ish, a term I've been using because I'm not sure we know what normal is anymore.

Bazelon: As immunity starts to ramp up, even in small numbers, if it's among the high-risk groups, does that take some of the pressure off, does it improve some of the outcomes?

Gonsalves: Well, remember that the primary endpoint for many of the vaccine trials was mitigation of disease and not necessarily prevention of transmission. We're all hoping that it's going to turn out that the vaccines also prevent transmission. And as we vaccinate older people, we're going to see the fatality rate drop in this group, and guess what, it's going to look like things are getting better. But that could be an excuse for us to let down our guard over the next few months. Rochelle Walensky, who is President-elect Biden's choice for C.D.C. director, recently explained why we have to keep wearing masks and to social distance in the context of the vaccine rollout. She compared the virus to a forest fire. The vaccine is the fire hose that can put it out. With a small brush fire, water meets fire and quickly extinguishes it. But if the forest fire is raging, as the virus has been raging and continues to rage, the potency of the vaccine will be diluted by the sheer force of infections. A fire hose can do little good faced with a wall of flame.

Another problem is that there hasn't been a lot of money for the rollout coming from Congress to the states and localities. The new stimulus package is a start, but without more funding from the new Congress, our efforts to get to somewhere normal-ish by the summer will be hampered. If there's anything I want people to think about, it's that what happens on Jan. 5, in the Georgia races for the Senate, will determine a lot of our future.

Mukherjee: When you talk about trucks breaking down, that's one problem. There's a second, equally important but I think neglected logistical problem, which a company I co-founded, Othena, is trying to solve. The Pfizer and the Moderna vaccines require booster shots. They need to be tracked, and they need monitoring and auditing. What's the reminder system for telling you to come back for your second dose and for tracking which populations are getting the vaccine? This is a data-management challenge. We are piloting Othena software to address this issue in Orange County and other places in the country.

Current software systems are not patient-based, and vaccination will only be scalable if patients can manage their own vaccination.

Ezike: These are significant issues. And we need to be able to see which communities are getting appropriate uptake of the vaccine. But then, when I do virtual town halls with Latinx groups, I get a lot of questions: What are you doing with this patient information? How do I know it's not going to be used and reported to authorities to get me deported? So, we are balancing and trying to keep track of all these different concerns.

Mukherjee: Building trust means not just trust in the safety of the vaccine but also trust that your information will be secure and won't be misused. These are solvable problems but they require technology. There are advanced encryption mechanisms available. They allow you to give information without disclosing all of your identifying details, while still allowing for searchability. We want that to be digitized, and we want to know as a nation how many people have been vaccinated.

Kayyem: As we think about what the world looks like in the process of getting herd immunity, if you want to leave the country, international airlines such as Qantas are suggesting that they will be requiring proof of vaccination for passengers. Security for the Japan Olympics now includes health security, and there's a serious debate in Japan about vaccine verification for not just athletes but also for spectators.

Singer: Qantas will require vaccination verification not only to protect crews and other passengers but also because Australia, where it is based, is close to eliminating local transmission of the virus. Currently everyone arriving from overseas has to quarantine in special high-security hotels for two weeks, at their own expense, before going into the community. Vaccination certificates could replace that.

We need other strategies to incentivize people to get vaccinated. Employers could require vaccination certificates for employees whose work brings them into contact with others.

Mukherjee: Deploying a vaccine just in the United States, not even talking about the world, to more than 300 million people without the digital infrastructure, which we lack currently, it sounds to me like madness.

Gonsalves: But the information problem started a long time ago. If you look at the data collection over the course of the pandemic, with no disrespect to the states, we have had fragmentary data collection on basic things like cases, tests, deaths, hospitalizations. At the county level, things get much worse. We have very little longitudinal data on age, race, ethnicity.

And if we're going to build trust, it's not just saying, "Hey, a new vaccine is coming." It's working with community leaders to help people understand how good this new intervention is. But talking is not enough. It's investing real resources in the very same communities that have been hardest hit and that we've ignored for years.

Kayyem: My big worry has been the polling that showed lots of people not willing to take the vaccine. Including people in high-risk communities. But I'm hopeful that's starting to shift. It looks like "no" does not mean "never." It means: "I want to make sure that you build trust in my community. I'll be hundredth in line, I just don't want to be first." And that seems to me something that we can work with. You get the validators, you get the community leaders. You get a fair process of allocation in place that people can understand. And you get the logistics right. If that's working well, people will have confidence in the vaccine, because it will be delivered well. People think, Oh, it's just logistics. But if the process works, it will help achieve the policy goal of assuring communities that might be nervous.

Ezike: I think what Juliette is saying is true. My team and I have done the virtual town halls with churches, with first ladies of churches, reaching out to the Black population. There's just the fear of going first. If we only said, "We really want to support the groups that have been disproportionally hit, and, Black people, you're at the front of the line," some of them would go running. People who are skeptical would think, No, no, no, we're not doing that. But I think by putting health care workers first, this part of the Black community would think, OK, cool, you can't be trying to take out all your doctors!

Bazelon: We need them!

Ezike: Right. I think, though, there's a possible issue with the long-term-care population. Many of those people may die anyway, for other reasons, but then the conclusion could be, "Grandma got the vaccine and died the next week." These are elderly people with co-morbidities, and their death will coincide with the period after vaccination, but it will not be *caused* by the vaccine. I think that will be confusing for many people, however. So having health care workers get vaccinated and survive — that helps people get the confidence to say: "OK, I'm ready now. I'm lining up." I think there's going to be this big push at the end when people are like, "So far, so good."

What About the Rest of the World?

Gonsalves: If you follow Peter's age-based utilitarianism, we should give priority to immunizing the people in the Global South. That's where most of the young people on this planet live.

Singer: I totally agree. Getting vaccines to the Global South should be a very high priority.

Gonsalves: But right now, most of the vaccinations are being sucked up by Europe, Australia, New Zealand, the U.K. and the United States and Canada. The People's Vaccine Alliance, which includes Amnesty International and Oxfam, just released a report saying that in 70 lower-income countries, only one out of 10 people will get access to the vaccine in 2021. We're setting up a kind of medical apartheid over the next couple of months, and even couple of years, in which the virus will be under control in the United States and Europe and some other places, but if you're coming from another country with no proof of immunity and trying to get a student visa to the United States, good luck.

Ezike: Thinking more globally, as I think of Nigeria, my father's birthplace — access to vaccine, access to testing, all of that is limited there. We're not seeing a significant number of deaths in Nigeria, and that's fortunate. But if transmission was rampant, given how much Nigerians travel abroad, it would have serious reverberations beyond the country's borders.

Bazelon: Rich countries appear to be planning to hoard vaccine. The European Union has ordered enough to immunize its residents twice. Britain and the United States could inoculate everyone four times, if the supplies they have lined up are delivered, and Canada six times, according to a New York Times analysis of data on vaccine contracts. The World Health Organization and others have led an international effort called Covax, which commits a billion doses to less-wealthy countries. But that's still not enough for anything like equitable distribution.

Gonsalves: Here we go again, right? I mean, I'm an epidemiologist. I'm also an AIDS activist. And in 1996 we had the advent of a highly active antiretroviral therapy, and where did it go? It went to the industrialized North. And within a few years, everybody was clamoring for it all over the planet.

Mukherjee: Companies in India are making hundreds of millions of doses of Covid vaccines. China and Russia have vaccines, too. But we don't know whether any of these vaccines have been tested with the same rigor as the Pfizer and Moderna vaccines. To me, this is the most unfortunate thing about vaccine testing that's happened by far. The only data that we have about the Chinese vaccine comes from the United Arab Emirates and Bahrain, and we don't know the efficacy of it. They say it's 86 percent; we don't know real numbers. The Russian vaccine also has very little information released. Then there's the AstraZeneca vaccine, which has run into data problems.

And yet, these are the very vaccines that are likely to reach the many millions. Really, there's a challenge of distribution here that's also an ethical challenge. The United States is getting ultracold vaccines deployed in aircraft across the United States, whereas the vaccines that are the easiest and perhaps the most amenable to vaccinating hundreds of millions of people have gone through relatively poor evaluations.

One thing that we could do as a community of epidemiologists and immunologists is to ask the manufacturers to release the data publicly so we can evaluate how good or bad these other vaccines are that are being produced in the hundreds of millions of doses. We will never conquer the North-South divide completely in the short run, but at least we can mitigate some of the problems.

Singer: I also agree that it's important to get these other vaccines through proper trials as soon as possible. To date, human-challenge trials have not been part of vaccine development, but researchers in the United Kingdom hope to start them in January. According to 1DaySooner, which advocates for volunteers, nearly 40,000 are willing to take part. If you can give people a vaccine and then deliberately expose them to the virus, you get results much faster. And you can study the antibody responses and the immune responses, because you can house volunteers in a residential quarantine facility where they'd be available for that kind of testing. I recognize that they don't have the representative demographics that you would want, but these trials do offer the possibility of getting much speedier results.

Gonsalves: Yes, evaluate other vaccines that are easier to store and ship. But even if there are cold-chain issues with distributing the Pfizer and Moderna vaccines in poorer countries, it's not impossible. These are the vaccines we have right now, which work. We have to break the patent on them. We would not have worldwide access to antiretroviral therapy if countries like India and Thailand weren't making generic versions of patent drugs, whether or not the original manufacturers agreed.

Mukherjee: I was formerly an Indian citizen. India as a country got into trouble, politically and internationally, from breaking patents on drugs for antiretroviral therapies for H.I.V. The world regime right now is not very sympathetic to breaking vaccine patents. And I just don't see that happening in the short run.

It's so important for the vaccine data to be cleaned up and presented properly so that we can understand what the trade-offs are. Because even if we break the patents, I just don't see Pfizer, with a vaccine that must be kept at –70 degrees, deploying it to 1.3 billion people in India. I just don't see it.

Singer: I think everybody, except the drug companies that had the patents, applauds the fact that the patents were broken in the case of H.I.V. and antiretrovirals. It should be possible to do that again here. It may be that a certain portion of money needs to go to those companies to compensate them for the loss. That shouldn't be beyond the means of affluent nations.

There are other proposals for funding vaccine development on the table, including the Health Impact Fund, which has been discussed by some European governments, and would pay companies based on performance. Instead of patenting vaccines or other treatments, developers could opt to receive payments (from a pool of funds contributed by governments or philanthropists) based on the success of their products, worldwide. So pharmaceutical companies would have an incentive to develop the products that help people the most and distribute them as widely as possible.

Mukherjee: When one of the easily deployable vaccines is available, if every one of America's billionaires put a fraction of their wealth into deploying it to the Global South, worldwide vaccination would become an achievable goal.

Singer: The economist Richard Thaler wrote in The Times recently about letting celebrities and wealthy people jump the vaccination queue by bidding for spots at an auction. That would show they wanted to get the vaccine, which would help encourage other people to get immunized. And Thaler thought the money could go to people who are suffering because, for example, the virus cost them their jobs. My idea is that instead of dollars, people should bid on sending units of vaccine to the Global South.

Mukherjee: Peter, what if you could jump the queue, and get 10 doses of vaccine for your friends and family, if you contribute 5,000 or 10,000 or 500,000 doses for the Global South. Would you be open to such an option?

Singer: Yes, I would be, I think. Clearly, for a utilitarian like me, the benefits greatly outweigh the costs.

Gonsalves: It won't happen. But there will be huge numbers of rich people who will jump the line for the vaccine and not give anything back.

Are the Stakes Even Higher Than We Realized?

Kayyem: The first part of 2021 is going to be a split screen — the horror and the hope. On one side are people rolling up their sleeves and getting inoculated. On the other are people dying in terrible numbers in the United States.

It's hard to be magnanimous in that situation. And I totally think we should be out in the world supporting vaccine distribution to those in need, but I look at this country right now and I also recognize there's this aspect of holding on for dear life over the next couple months. This is why vaccine nationalism is so strong. And it's why vaccine diplomacy by China, for example, is a major part of geopolitics in 2021. While we're on our knees struggling, China is going around the world, spending money to support other countries in purchasing vaccines and making lots of friends. People ask me, as a matter of homeland security and national security, what are President-elect Biden's five major priorities, and my answer is Covid, Covid, Covid, Covid, Covid. For decades we provided the world a market economy with a lot of freedoms —

Mukherjee: And medicines.

Kayyem: And medicines. The alternative to that was a market economy with limited freedoms — China. But a country's strength is its capacity to be resilient. And now we are groping. We have not proved our resiliency yet. And that's a problem not just for national security but for free-market democracy.

Gonsalves: Kind of like what happened here under our noses, right? Everything seemed fine, until it wasn't. Over the past 10 years we've had massive cuts in public-health funding at the state and local level. Barely 3 percent of our health care dollars are spent on public health and prevention. We invest in the most sophisticated health care technologies but ignore the social-welfare programs that undergird people's health in many of our peer nations: No wonder we're ranked 17th in the world for life expectancy by the U.N. We let our great public-health system collapse. Looking at us, the world has to think, Are they really a role model?

Kayyem: Dr. Ezike, what worries you the most? Is there a point of failure we're not thinking of?

Ezike: We will have significant issues if some new adverse event with the vaccine comes to light. In the unlikely event that something goes very wrong, it could reverse all of the progress we've made in trust of vaccine science. I'm thinking of kids not getting their regular required vaccinations. Public health will suffer for generations to come.

Bazelon: That makes me really nervous. It means the stakes are even higher than I realized — and something is bound to go wrong, isn't it?

Mukherjee: And remember, this is not simple. It's not, Go to CVS, get one jab and come out. This requires a booster, to be taken on time, post-vaccine monitoring and not mixing up vaccines. This keeps me up at night: Imagine some small percent of people saying, I got a terrible fever from the first dose, I don't want to go back for the second one. The good news is that Pfizer's data suggests the first dose is actually quite effective by itself.

Bazelon: Is it effective enough that it's OK if people just take one dose?

Mukherjee: No, no, no. That would be bad news for a thousand reasons, including the possibility of viral resistance, which would be a disaster. But some part of me wishes that a priority up front in the United States was a much more conventional vaccine, which could be deployed more simply.

Bazelon: Will everyone here get vaccinated at the first opportunity?

Mukherjee: I will.

Kayyem: I'd bump Sid if he's ahead of me. (Laughter.)

Gonsalves: I will.

Singer: I will, though I think in Australia we're not getting it till March, so you will be ahead of me.

Bazelon: Well, not me. I'm low priority, which is as it should be, though I can't wait to get that shot. Or shots.

Singer: I'm pretty safe here, so I'm not too worried about waiting.

Ezike: I'll get the vaccine. I actually don't have a choice at this point.

Bazelon: I feel as if you should get it on TV.

Ezike: That's in the works. Though I have to wait my turn.

Kayyem: I want to say one more thing: We do have permission to hope, because of the vaccines, and all of us here can help to give that permission. But it has to be said every time, where the country is right now, with more than 300,000 people dead, it is unforgivable. It did not have to be this way.

Singer: In Australia, we haven't hit 1,000 dead, and our population is about a 15th of the United States. Perhaps that shows what's possible.

Emily Bazelon is a staff writer for the magazine and the Truman Capote fellow for creative writing and law at Yale Law School. Her book "Charged" won the Los Angeles Times Book Prize for 2020 in the current-interest category.

EXHIBIT 5

PUBLIC RECORD RELEASED THROUGH FOIA TO THE PROTECT PARENTS' RIGHTS TEAM

From: DPH.FOIA <DPH.FOIA@illinois.gov>
Date: Wed, Jan 13, 2021 at 11:42 AM
Subject: Freedom of Information Act Request DPH 3246 FOIA: 2020 PAC 65929
To: [redacted] <[redacted]@gmail.com>
Cc: ssilverman@atg.state.il.us <ssilverman@atg.state.il.us>

Dear Ms. [redacted]

This email is in response to your recent Freedom of Information Act request for public records sufficient enough to determine the cycle quantification (Cq) value for the test(s) used in IL to confirm a positive COVID-19 case.

The Department is unable to identify any records responsive to your request. The Department's lab runs the ThermoFisher TaqPath assay for SARS CoV-2. This assay analyzes samples using interpretive software and CT values are not given. The lab reports to the provider SARS CoV-2 Not Detected or Positive for SARS CoV-2. The Department cannot provide CT values from other testing labs across the state because it does not have access to this information. RT-PCR testing is not quantified and CT values are not reported with other ELR.

Sincerely,

Stephanie Gratton
Attorney
Illinois Department of Public Health