

June, 2020

The Hidden Curve: Estimating the Spread of COVID-19 among People in ICE Detention

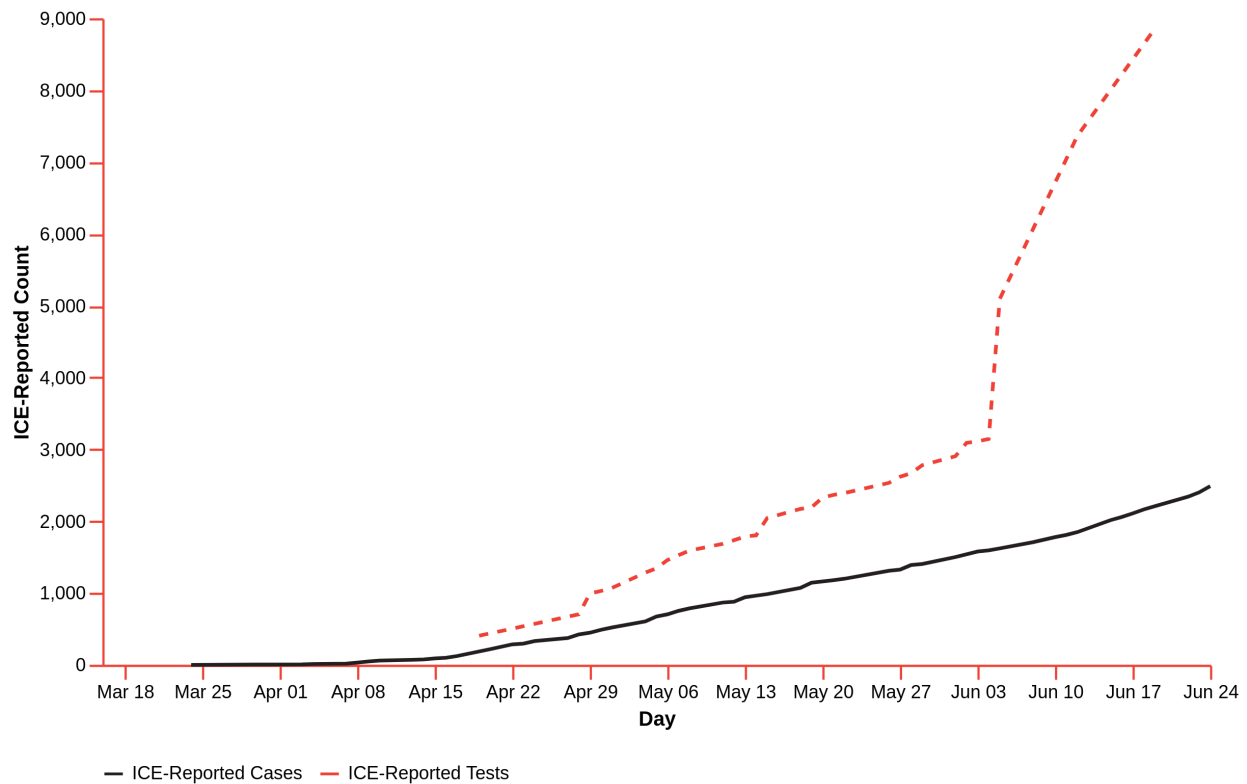
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Little is publicly known about the prevalence of COVID-19 in immigration detention facilities run by Immigration and Customs Enforcement (ICE). Conditions of confinement put people at high risk for contracting the virus, but ICE has shared little information with the public about what it may be doing to mitigate its spread.¹

As of May 31, 2020, ICE reported having tested 2,781 people in its custody, with 1,461 positive cases at just 60 of the more than 200 facilities it uses to detain adults and families.² ICE has not clarified whether the remaining tests are confirmed negative or still pending, which means that *a minimum* of 52 percent of people tested through May 31 had contracted COVID-19. More recently, ICE’s updated statistics as of June 24 show 2,489 positives among 8,858 people tested, suggesting a minimum of 28 percent through June 24.³ Figure 1 shows the cumulative number of tests and positive cases among detained people as reported by ICE through June 24, 2020. At the time of this report’s publication, two people have died in ICE custody as a result of COVID-19, and a third person reportedly died of COVID-19 shortly after release from detention.

Figure 1

ICE reported COVID-19 tests and positive cases



The basic statistics ICE has shared obscure information, such as the total number of people ICE has detained at any point since the first publicly-reported case of COVID-19. The ICE COVID-19 [webpage](#)

reports only on the number of *currently* detained people (23,429 as of June 24, 2020). However, calculations conducted by the Vera Institute of Justice (Vera) using ICE’s own [detention statistics](#) show that, at the time of writing, more than 66,000 people have been detained or newly booked into detention at any point since ICE’s first reported case of COVID-19. Similarly, ICE has changed the way it reports on positive cases to distinguish between “confirmed cases currently under isolation or monitoring”—the number it lists at the top of its COVID-19 page—and total confirmed cases since it started testing. Its method of reporting makes it impossible to answer basic questions of critical public interest such as how many currently detained people have been tested nationally and per facility, how many people have been released to hospitals or the community, or how many people with positive cases have been deported. Reports from around the country and ICE’s own testimony to Congress make it apparent that ICE continues to move people between facilities without testing people who appear asymptomatic, despite U.S. Centers for Disease Control and Prevention (CDC) recommendations that ICE restrict transfers.⁴

To demonstrate the possible prevalence of COVID-19 in detention, researchers at Vera’s Center on Immigration and Justice built an epidemiological model, based on methodologies developed by teams modeling the spread of COVID-19 in other congregate settings (see “The methodology behind Vera’s model,” below). Using the most recent publicly available ICE data, the model specifically explores how new book-ins to—and frequent transfers between—detention centers may be contributing to COVID-19’s spread among people in immigration detention. Through simulating a 60-day period beginning in mid-March 2020, Vera’s model estimated that nearly one in five people detained for any length of time during this period would be infected with COVID-19.

Vera believes it is important to share these initial estimates as the researchers continue to refine the model to help shine a light on what could be happening to people inside detention centers. Vera’s estimates make clear that there is no scenario in which the data ICE has reported to the public reflects the true scope of the spread of COVID-19 in detention and that the actual number of positive cases may be up to 15 times higher than the figures reported by ICE as of mid-May.

The methodology behind Vera’s model

To estimate the spread of COVID-19 inside immigration detention facilities, Vera modeled ICE’s patterns of booking people into custody (“book-ins”), transferring them (“transfers”), and releasing people from custody to the community or through deportation (“book-outs”) within its network of hundreds of detention facilities and local jail beds.⁵ Vera produced these estimates based on ICE detention data from fiscal year 2016, which is the most recent full fiscal year of individual-level data available to the public.⁶ The model Vera designed is an extended version of a susceptible-exposed-infected-removed (SEIR) epidemiological model, adapted from a paper by Eric Lofgren et al.⁷ Given that available evidence suggests that the majority of people detained by ICE are 45 years old or younger, Vera used the “jail, low-risk adult” component of Lofgren’s model, which most closely aligns with the population demographics of

people in ICE detention centers.⁸ Details on how Vera implemented the model, and the derivations and values of the parameters the researchers used, are included in the [technical appendix](#).

Vera’s model presents a simulation covering a 60-day period following a “day 0,” on which there are zero COVID-19 cases among people in detention facilities. In this model, people booked-in to ICE detention facilities are set at a constant probability of having been exposed to COVID-19. Once an infected person is inside an ICE facility, the virus can spread to other people detained in that facility and to people in any other facility that ICE transfers them to.

This simulation is a simplified depiction of how COVID-19 may actually spread. Vera’s model accounts for spread only between people detained and does not simulate possible transmission of the virus between facility staff and detained people or between people detained by ICE and people detained by other agencies at the same facilities. Vera’s model tracks the progression of individual people’s conditions while they remain detained and does not account for risk or the progression of people’s conditions once they are no longer in custody (e.g., due to deportation or release). In these respects, this approach is a conservative one, yet the results still show a substantial likely underreporting of COVID-19 cases by ICE, the need for more testing, and a substantial risk to people in ICE custody.

Vera’s model is based on ICE detention data from fiscal year 2016, provisionally calibrated to March 2020 ICE initial book-ins and average daily population (ADP) to simulate a trajectory of ICE detentions and COVID-19 infections over a 60-day period. A second iteration of the model will extend the calibration beyond the March 2020 ICE book-ins and detention. This update will allow Vera to improve the accuracy of predictions and credibly extend the simulation past the original 60-day mark.

Vera’s model differs from the only other published model of COVID-19 infection in detention, recently released by Michael Irvine and colleagues in the *Journal of Urban Health*, in that Vera’s model produces a lower total infected share of the cumulatively detained population.⁹ This difference is due to how ICE’s movement of people is modeled and how the outbreak starts. Irvine et al. model static ICE facility populations that are subject to synchronized outbreaks across detention facilities. In contrast, Vera assumes a dynamic ICE facility population that reflects ICE continuing to book in people who may have COVID-19, accounts for ICE transferring people between facilities, and allows facilities to experience their first infections at randomly distributed times.

Vera’s model uses a transmission rate that is comparable to the one used in the Irvine et al. “pessimistic scenario.” In this comparable scenario, Irvine et al. estimate that 99 percent of their static populations of detained people would be infected by day 60. However, because Vera modeled dynamic—rather than static—ICE facility populations, the researchers arrived at different results: Vera’s simulations project a lower aggregate rise in cumulative infections compared to any of the Irvine et al. scenarios. Vera estimates that 19 percent of people detained at any point during a 60-day period would be infected by day 60.¹⁰ In addition, the Vera model predicts that the COVID-19 outbreak would not have peaked by day 60. Though these two models differ, they both require a certain amount of guesswork given that ICE shares little

actual data with the public, and they each provide a useful starting point for understanding what is surely an underreporting of infection on ICE’s part.

Initial results from Vera’s model

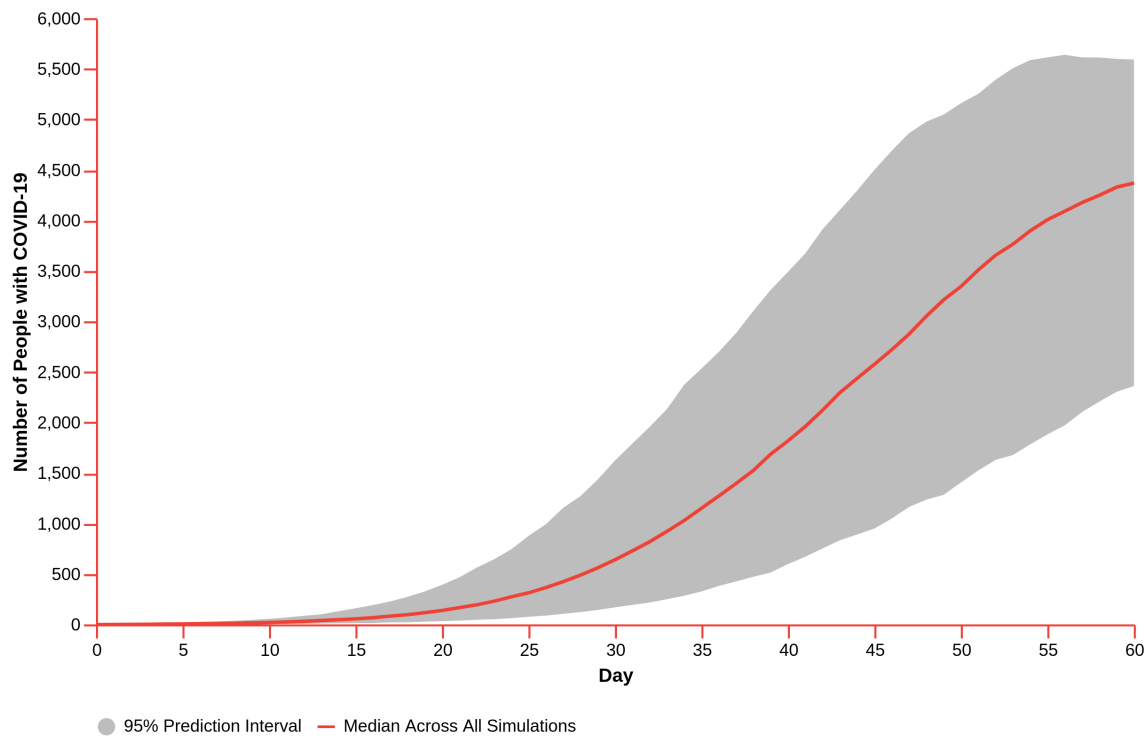
Because ICE has shared little information with the public beyond demonstrating that it has tested few people passing through its custody, Vera simulated many outcomes for a disease outbreak that could have occurred within a 60-day period.¹¹ To summarize patterns between repeated simulations, the results presented here are the median results of 500 simulations (unless otherwise noted).

This model assumes approximately 751 people booked in by ICE per day and 80,655 people cumulatively held in ICE detention at any point during the 60-day period. Due to limitations in the data ICE shares with the public, Vera could not use the true number of people ICE detained during this time in its model. Instead, the simulation shows a relationship between a given population and the number of people within that population who would be infected.¹²

The model predicts that on day 60, 15 percent of people within the currently detained population would have active COVID-19 cases (excluding those who have recovered from the virus), as shown in Figure 2. At the time of day 60, the outbreak would not yet have peaked.

Figure 2

Predicted daily number of COVID-19 cases



Cumulatively, the model predicts that by the end of the 60-day period:

- An estimated 15,549 people would contract COVID-19—which is 19 percent of people who were in ICE detention at any point during the simulation period.¹³ (See Figure 3.)
- An estimated 253 people would have COVID-19 cases that progress to the point of requiring serious medical attention such as hospitalization, presumably the kind of care that would not be possible from inside detention. (See Figure 4.) By day 60, at which point infections would not yet have peaked, an estimated 2 to 17 people would die in ICE custody from COVID-19.¹⁴

Vera’s model does not project disease progression for people who become infected with COVID-19 while in custody and who are subsequently booked out as a result of release or deportation, so it is likely that the number of people who would require serious medical intervention or who would die within the 60-day period may be even higher. Similarly, the model does not track disease progression for people who remain detained past day 60 of the simulation, which may result in an underestimate of the harm inflicted on detained people over a longer time frame.

Figure 3

Predicted cumulative COVID-19 cases in detention versus ICE-reported cases

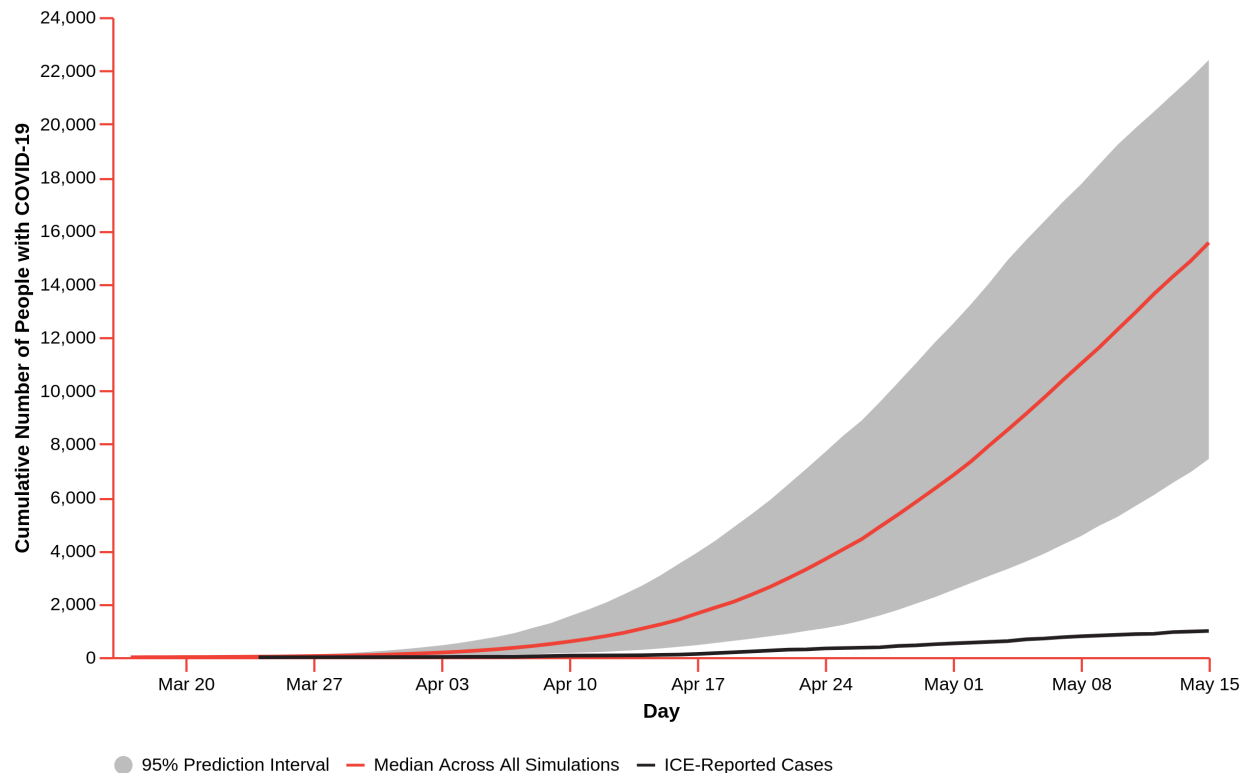
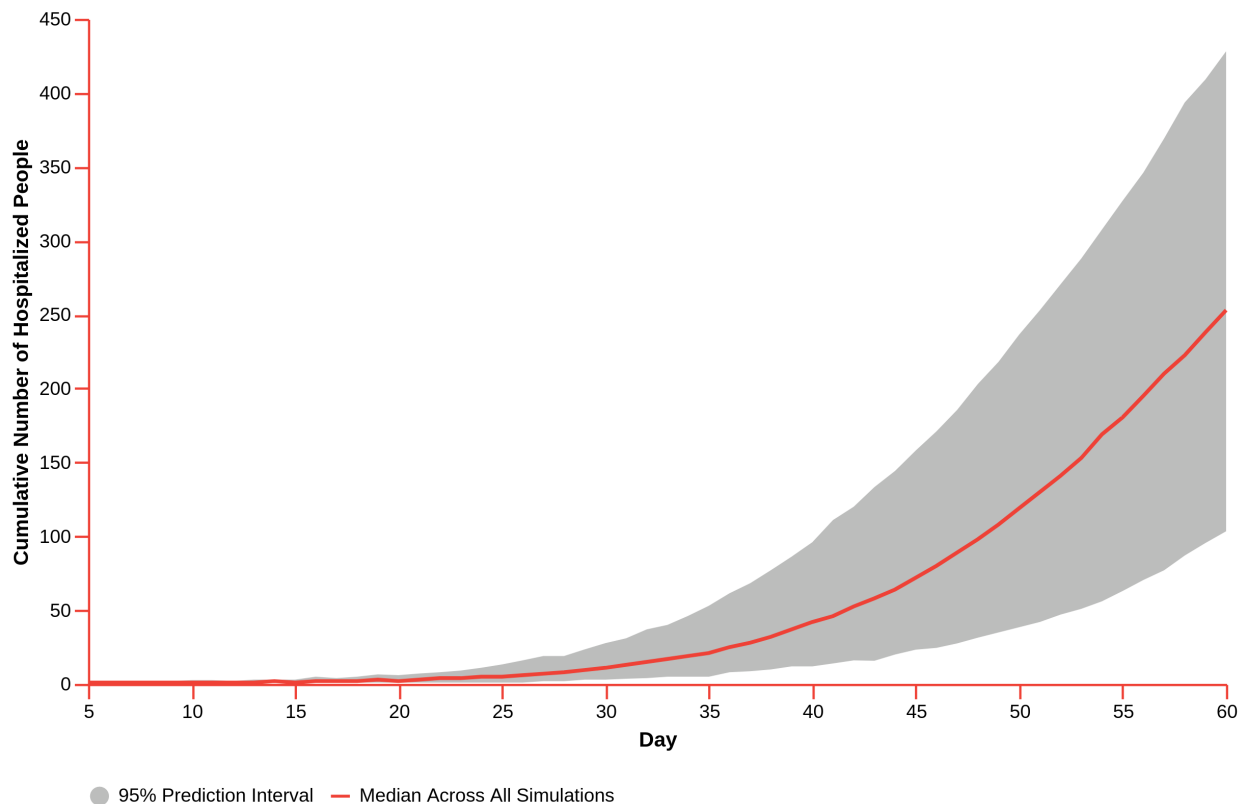


Figure 4

Predicted cumulative number of hospitalizations



Vera’s predictions differ drastically from the confirmed cases ICE has reported to date.

Since ICE reported the first COVID-19 case for a person in detention on March 24, 2020, ICE has regularly updated the total number of confirmed COVID-19 cases on its website. Vera worked backward from the date of the first ICE-confirmed COVID-19 case to align the 60-day simulation period with the time frame of ICE-reported cases, setting March 17 as day one of the simulation (allowing for a seven-day expected lag between exposure to the virus and the onset of symptoms, as assumed in Vera’s model). Figure 3 illustrates the cumulative number of people with COVID-19 (predicted and ICE-reported). As of day 60 in the simulation, which corresponds to May 15, 2020, the model predicts the number of confirmed COVID-19 cases would be *15 times higher* than the number of confirmed cases ICE had reported by that date (15,549 cases predicted by the model versus 986 cases reported by ICE). The number of predicted cases far surpasses the number of COVID-19 tests ICE has reportedly administered to date. Indeed, the model predicts that by May 15, 2020, the number of COVID-19 cases among people in detention would be eight times higher than the number of tests ICE had even administered.

Vera’s model suggests that transfers pose additional, avoidable risk to detained people during the pandemic. Even before the pandemic, ICE did not publicly disclose the extent to which it

transferred people across its network of detention facilities. During the simulation period, much of the country was living under stay-at-home orders, and domestic and international travel as well as most border entries were significantly reduced in an effort to control the spread of COVID-19.¹⁵ Despite this, ICE continues to conceal its transfer activity from the public. If ICE continued to follow transfer patterns of fiscal year 2016, the last year it released data publicly on its transfers, the model shows that over the course of 500 simulations, ICE would conduct a median cumulative 1,744 transfers of people with active COVID-19 cases to other detention facilities by the end of the 60-day period. (See Figure 5.) This includes repeat transfers of the same people and transfers of people to facilities across state lines and to regions across the country.¹⁶ By day 60 of the simulation, 9 percent of people who ever had COVID-19 would be transferred at least once by ICE while actively contagious. Each map in the Figure 6 panel shows the cumulative transfers of people with COVID-19 by the end of a single run of the simulation. As federal and state governments grapple with the management and consequences of the pandemic, Vera’s analysis demonstrates that ICE transfers pose a substantial risk of transmission across the United States.

Figure 5

Predicted cumulative ICE transfers of people with COVID-19 during 60-day period

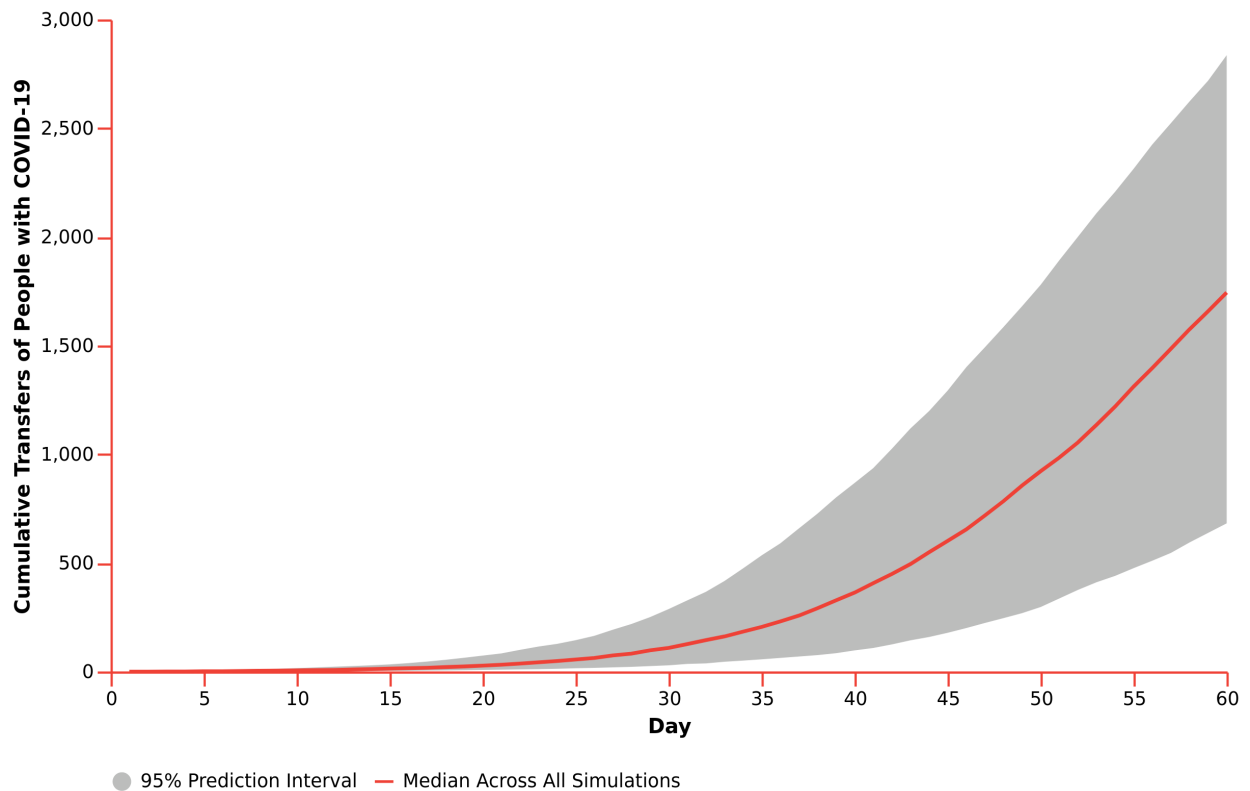
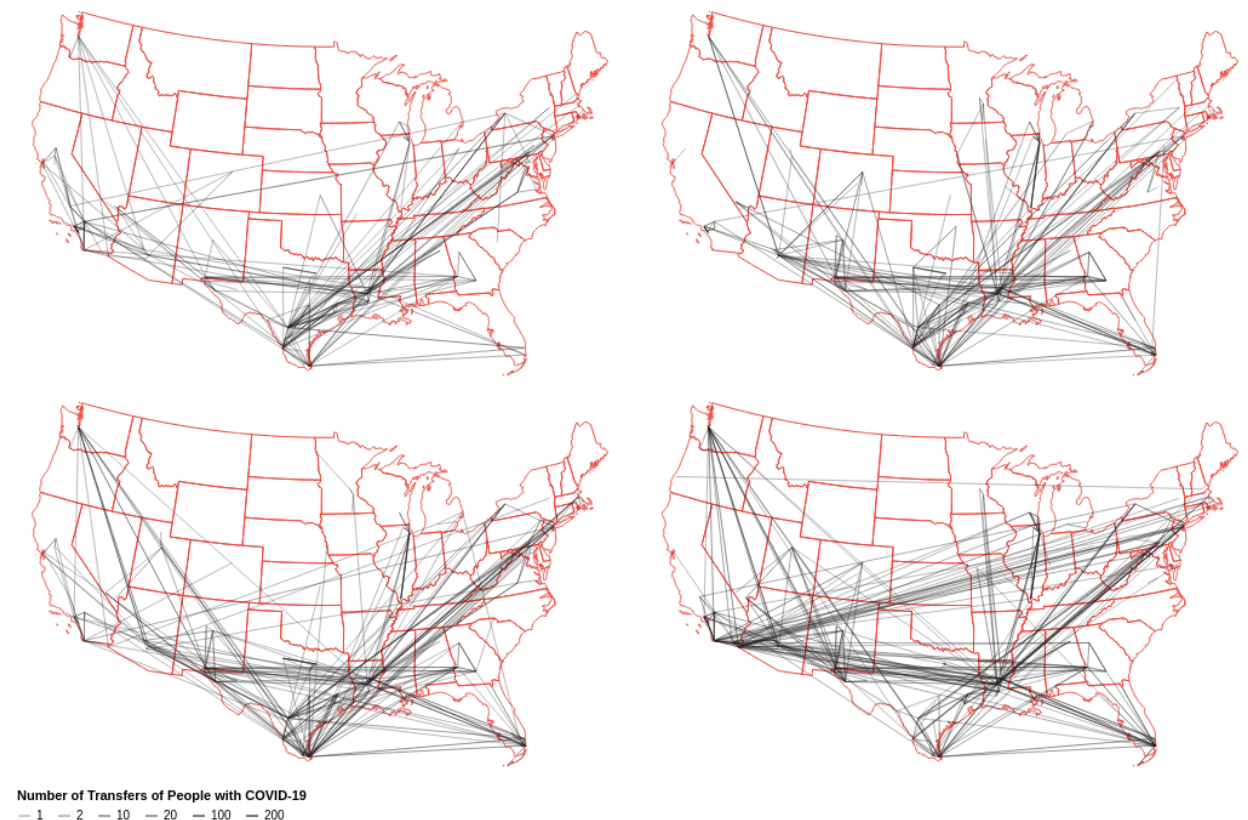


Figure 6

Predicted ICE transfers of people with COVID-19 during 60-day period



The four maps in this panel are a representative sample of the results from separate simulation runs, each showing the cumulative number of transfers of people with COVID-19 over the full 60-day period.

ICE is keeping the public in the dark

Vera’s attempt to model COVID-19 prevalence underscores that ICE continues to keep critical information from the public. Though ICE updates some basic numbers on its [detention statistics webpage](#) on a weekly basis and its [COVID-19 webpage](#) roughly once per weekday, these figures are insufficient for understanding what happens to people detained by ICE and how COVID-19 may be spreading within and between facilities. As the numbers shared on these pages are regularly replaced, it is difficult to understand how numbers change over time. Reported numbers can vary by levels of analysis (e.g., reported nationally in aggregate or per facility), time periods (e.g., year-to-date, month-to-date, snapshot on a given day), and by the population they refer to (e.g., whether they include detained people who have since been booked out of detention). This manner of reporting, along with missing information and a lack of publicly available data, makes it impossible to answer fundamental questions about ICE operations and their impact on people in detention:

How many people are being detained and where? Though ICE is providing weekly updates to the aggregate number of people booked in to detention nationally, it is not sharing where it apprehends people, who it prioritizes for apprehension, or the number of people it books in to each facility. In addition to reporting the national average daily populations for the fiscal year and month, ICE should report for each of its facilities the number of people booked in to custody, transferred in and out, and booked out for release or deportation. As ICE detention numbers continue to decline following changes to immigration policy that predate the pandemic, ICE should share patterns of its facility and bed use with the public whose taxpayer dollars fund these operations. To ensure ongoing accountability to the public, ICE should regularly release anonymized, individual-level detention data from its Enforcement Integrated Database (EID), just as the Executive Office for Immigration Review (EOIR) [releases anonymized records of immigration court proceedings](#) on a monthly basis.

Who is being tested? At the national level, ICE has released the *cumulative* number of COVID-19 tests administered, yet pairs this information with the *current* (not cumulative) number of people detained and the current number of positive COVID-19 cases. It has not provided information on the number of tests conducted among the currently detained population, nor has it disclosed who is eligible for testing, how tests are counted (e.g., what typical lags occur between date tested and date confirmed, whether pending tests are included in the total number), or if anyone has been tested before transfer or release/deportation. For each facility, ICE reports only the current and total number of cases. ICE does not pair that information with current or cumulative numbers of people detained or with the number of negative or pending tests. As of May 31, 2020, ICE had reported confirmed COVID-19 cases in only 60 of the more than 200 facilities it uses. It is unclear if it has performed any tests in facilities with no positive cases to date.

How are sick and at-risk people being treated? While ICE has shared a document detailing its COVID-19 pandemic response requirements as of April 10, 2020, it does not report information that would allow the public to understand the extent to which it is following these regulations.¹⁷ ICE has not provided detailed additional information about the people with confirmed COVID-19 cases in its care, including the number of people hospitalized, recovered, and released from each facility. The public knows very little about how people in detention are being treated and what is being done to minimize risk of exposure.

Who has been released and under what criteria? ICE has shared few details about people who have been released from custody to minimize risk or improve their access to care. Aside from reporting the number of people released through judicial orders (465 people as of June 11, 2020), ICE does not report on the number of people released or deported on an ongoing basis, even at a national aggregate level.¹⁸

Who is being transferred and why? The transfer of people with COVID-19 between detention facilities affects the spread of the virus within the receiving facilities and the surrounding communities. Vera's model predicts that, under fiscal year 2016 transfer patterns, the risk posed by this practice may be substantial. While ICE has not made information about current transfers publicly available, it is apparent that ICE has not stopped transferring people between facilities and is not testing the people it moves. In

areas housing ICE detention centers, local stakeholders must be informed whether the federal government is transferring people from facilities with high numbers of COVID-19 cases. This information is necessary to ensure community safety and to give local healthcare providers the opportunity to guarantee adequate capacity.

ICE's lack of transparency makes it difficult to predict the risks confronting people being held for civil immigration reasons. However, as Vera's model demonstrates, the true scale of the spread of COVID-19 in ICE detention is likely to be shockingly high. ICE has caused preventable harm and continues to endanger people's lives and wellbeing—both inside and outside of its facilities—with its policies and ongoing operations.

Acknowledgements

The authors would like to acknowledge the following people and organizations who made this work possible: David Hausman for providing ICE detention data acquired through the Freedom of Information Act (FOIA); the authors of Lofgren et al. 2020 for access to their SEIR model, along with their generosity in explaining the workings of their model; Recidiviz for our use of their model as a template for how a discrete-time model can be specified. Vera also acknowledges how useful data from the Marshall Project, Transactional Records Access Clearinghouse (TRAC) at Syracuse University, and Freedom for Immigrants has been in modeling our work.

Endnotes

¹ See Vera Institute of Justice, "Coronavirus Guidance for the Criminal and Immigration Legal Systems," March 2020, <https://perma.cc/2BQ8-R9NP>.

² Vera routinely archives data from ICE's [COVID-19 Guidance webpage](#), which ICE replaces with updated numbers on a near-daily basis (with the exception of weekends). Across these archived snapshots, ICE reported a total of 98 distinct names of facilities at which people have tested positive for COVID-19 between March 24, 2020, and June 24, 2020. Vera researchers classified these 98 facility names as 64 known detention centers and one local hospital. At the time of this report, 63 facilities were listed with present or former COVID-19 cases; one facility, "LA Staging," was included on the page on June 1 and 2 but has since been excluded from reporting. ICE is not responsible for the custody of unaccompanied children. The Office of Refugee Resettlement has not published information on COVID-19 cases among children in its custody.

³ The number of confirmed cases did not increase proportionally to keep pace with the number of increased tests. This may indicate that ICE is reporting pending tests in its total count.

⁴ In a federal court hearing on May 27, an attorney representing ICE stated that ICE was not testing people who were asymptomatic and that ICE is not able to test people prior to transferring them to other facilities, noting "...ideally if we had the capacity to do so, we would test everybody before transfers were done to make sure that they were not infected, but that capacity does not exist." See Monique O. Madan, "ICE Admits to Transferring Detainees with COVID-19, Says It Can't Test Everybody," *Miami Herald*, May 27, 2020, <https://www.miamiherald.com/news/local/immigration/article243031176.html>; The U.S. Centers for Disease Control and Prevention (CDC), *Interim Guidance on Management of Coronavirus Disease 2019 (COVID-19) in Correctional and Detention Facilities*, (Atlanta, Georgia: CDC, March 2020), <https://perma.cc/SG5C-WQL8>.

⁵ ICE reports 137 dedicated detention facilities on its website, but relies on a network of several hundred facilities where it may detain small numbers of people. See <https://perma.cc/LF5L-ZQQH>.

⁶ This dataset was provided to Vera by David Hausman of Stanford University's Immigration Policy Lab and was originally obtained through a Freedom of Information Act (FOIA) request. Vera used this data to calculate average daily populations and daily inter-facility transfer probabilities. The researchers then scaled down the number of people booked in to custody to provisionally calibrate to March 2020 ICE-reported initial book-ins and average daily population (ADP), leading to a decrease in overall facility populations throughout the 60-day simulation period.

⁷ Vera's model was adapted from Eric Lofgren, Kristian Lum, Aaron Horowitz, Brooke Madubonwu, Kellen Myers, and Nina H. Fefferman, "The Epidemiological Implications of Incarceration Dynamics in Jails for Community, Corrections Officer, and Incarcerated Population Risks from COVID-19," <https://perma.cc/U9FG-PHH7>.

⁸ Based on data that Freedom for Immigrants collected from 5,823 people detained by ICE, Vera determined that roughly 80 percent of people in their sample were 45 years old or younger. See Freedom for Immigrants, "Detention by the Numbers," accessed May 29, 2020, <https://perma.cc/D74D-JU4J>. The Transactional Records Access Clearinghouse found a median age of 30 among people deported by ICE in fiscal year 2012 and fiscal year 2013. See Transactional Records Access Clearinghouse, "ICE Deportations: Gender, Age, and Country of Citizenship," April 9, 2014, <https://perma.cc/2UF2-RH5N>.

⁹ For the only other published model of COVID-19 infection in ICE detention, see Michael Irvine, Daniel Coombs, Julianne Skarha, Brandon del Pozo, Josiah Rich, Faye Taxman, and Traci C. Green, "Modeling COVID-19 and Its Impacts on U.S. Immigration and Customs Enforcement (ICE) Detention Facilities, 2020," *Journal of Urban Health* (2020), <https://perma.cc/7YH3-7447>.

¹⁰ Irvine et al. estimate in their optimistic scenario that 36 percent of detained people will be infected within 60 days and 72 percent will be infected by day 90. Readers may be interested in FiveThirtyEight's explanation of why COVID-19 models often arrive at different results. See Maggie Koerth, Laura Bronner, and Jasmine Mithani, "Why It's So Freaking Hard to Make a Good COVID-19 Model," FiveThirtyEight, March 31, 2020, <https://perma.cc/D7Z7-A4R9>.

¹¹ Researchers typically run simulations numerous times to produce a range of outcomes and then summarize the results to show the center of the distribution of outcomes. On each day in the 60-day period of the Vera simulation, each detained person's probability for disease progression was independent of their probability for transfer or book out, with the exception of people who were hospitalized on that day or had died and were restricted from being transferred or booked-out in the simulation. Depending on each person's varied outcomes, repeated simulations yielded different results.

¹² The results of Vera's simulation indicate the order of magnitude of the spread of COVID-19 among people who ICE has detained. The actual simulation numbers should not be interpreted as precise predictions for several reasons. First, given the absence of empirical studies of the spread of COVID-19 in detained or incarceration settings, Vera used educated guesses to select model parameters based on available information and choices made in other COVID-19 papers. Second, because of the unavailability of current ICE data, the model uses historical data to model the system of ICE detention. Vera's simulation is only provisionally calibrated to the reported March 2020 trends in the number of people that ICE currently detains or books-in to detention. Third, ICE's lack of testing and the resulting uncertainty about when the first people in each facility may have been infected led, in large part, to the non-trivial variability represented by the wide prediction intervals generated by the simulation. To summarize, ICE's lack of transparency makes it hard to build an accurate model.

¹³ The fraction of the currently detained population with active COVID-19 cases as of day 60 can be less than the fraction of the cumulative detained population that was ever infected. The first contributor to this difference is the number of people who have recovered from COVID-19 prior to day 60 and remain detained; they are counted in the numerator for cumulative infections but not current infections on day 60. The second contributor to this difference is that by day 60, people whom ICE books out of detention are replaced by people booked in who, due to a relatively shorter detention duration, are less likely to be infected, thus lowering the currently infected fraction of people in detention on day 60.

¹⁴ This range of 2 to 17 people represents the 95 percent prediction interval for cumulative deaths in ICE custody from COVID-19 by day 60.

¹⁵ Michael D. Shear and Zolan Kanno-Youngs, "Trump Administration Plans to Extend Virus Border Restrictions Indefinitely," May 13, 2020, *The New York Times*, <https://perma.cc/1369-44WR>.

¹⁶ Some unknown number of detention facilities in use during fiscal year 2016 may no longer be in use today. ICE has reportedly detained people at 29 additional facilities as of April 2020, which were not found in its fiscal year 2016 detention data, including several newer facilities in Texas (Montgomery ICE Processing Center, El Valle Detention Facility, Prairieland Detention Facility, Limestone County Detention Center, Webb County Detention Center, Coastal Bend Detention Facility, Dallas County Jail) and Louisiana (Winn Correctional Center, Jackson Parish Correctional Center, Richwood Correctional Center, Catahoula Correctional Center, LaSalle Correctional Center Olla, River Correctional Center).

¹⁷ U.S. Immigration and Customs Enforcement, "Enforcement and Removal Operations: COVID-19 Pandemic Response Requirements," April 10, 2020, <https://perma.cc/1B39-YE55>.

¹⁸ U.S. Immigration and Customs Enforcement, "ICE Guidance on COVID-19: Judicial Releases," (page updated regularly) <https://www.ice.gov/coronavirus#tab3>