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Raising the Bar: ICU Beds and Certificates of Need

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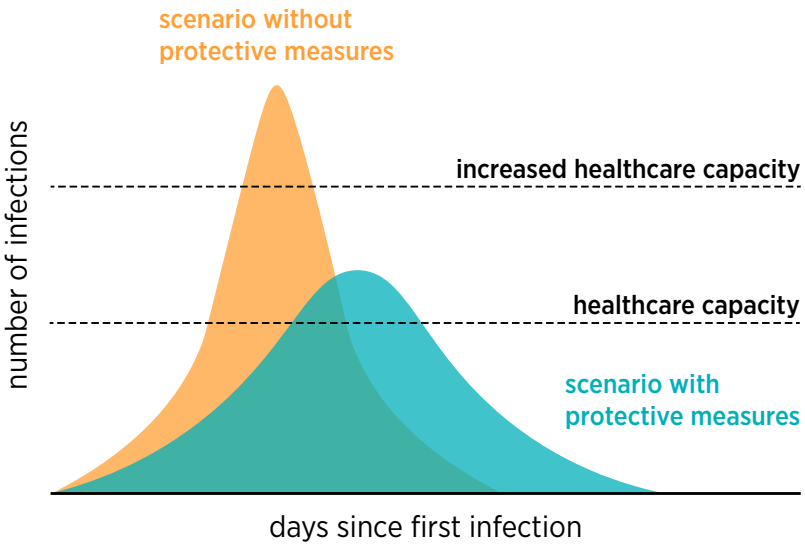
The nation is on a mission to "flatten the curve." The goal is not so much to reduce the total number of COVID-19 infections—though that would be ideal—but to reduce the number of infections at any one time, so as to ensure that the nation's healthcare resources are not overwhelmed.[1] While it has received less attention, a secondary goal should be to "raise the bar" by increasing the nation's capacity to handle those cases that do arise (see figure 1).[2] Certificate-of-need (CON) laws may contribute to diminished healthcare capacity, and their elimination can help raise the bar so that the nation is ready for the next healthcare crisis.

Figure 1. America Should Flatten the Curve *and* Raise the Bar



In the next section, we briefly describe CON laws and their relationship with cost, quality, and access. In section II, we use intensive care unit (ICU) bed shortage projections to examine how CON regulation of hospital beds relates to shortages. We find that those states that require a CON for hospital beds are more than twice as likely to experience projected ICU bed shortages. On average, these states are expected to experience an ICU bed shortage of about 8,000 beds (about 9 beds per 10,000 residents). By contrast, states that do not require a CON for hospital beds are expected to experience an average shortage of about 114 ICU beds (about 1 bed per 10,000 residents). We also find that the temporary suspension of CON has no statistically significant relationship to ICU bed shortages.

I. A BRIEF INTRODUCTION TO CERTIFICATE-OF-NEED LAWS

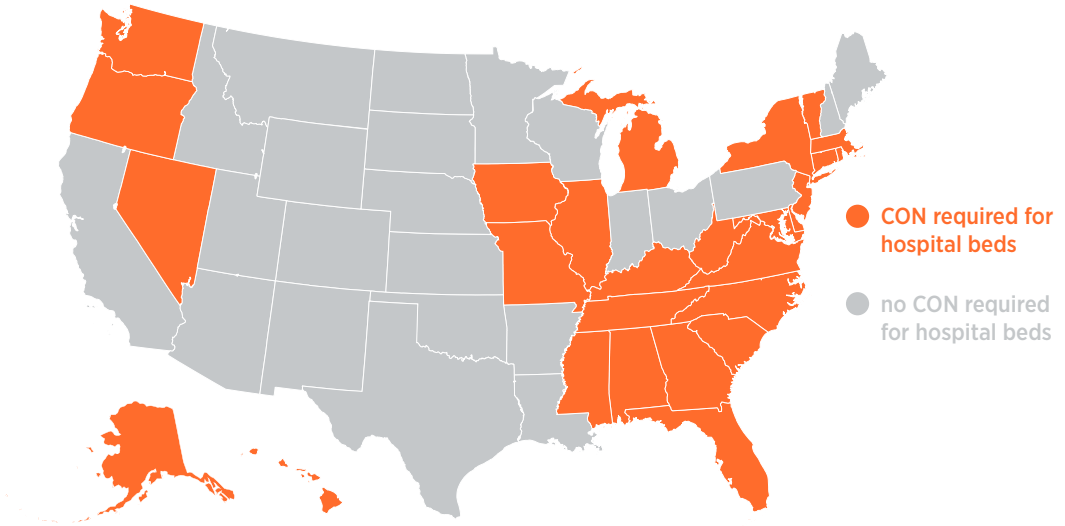
In 35 states and the District of Columbia, healthcare providers must obtain permission from a regulator before they may open new facilities, expand existing ones, or acquire new equipment. These CON requirements vary from state to state and cover a variety of services and equipment, including new or expanded hospitals, hospital beds, medical imaging technologies, drug rehabilitation centers, mental health facilities, and neonatal ICUs. Unlike other varieties of regulation, CON is not intended to assess a provider's qualifications, credentials, or safety record. Instead, CON charges regulators with assessing the provider's claim that the medical service is actually needed.

Controversially, the CON approval process invites incumbent providers to challenge the applications of their would-be competitors.[3] And even if a CON is granted, applicants can expect the process to take months or even years, and it has been known to cost providers hundreds of thousands of dollars.[4]

Peer-reviewed academic studies have found that CON laws are associated with higher costs and lower-quality care.[5] But by far the most studied aspect of CON laws is their effect on healthcare capacity. In careful studies that control for possibly confounding effects, researchers find that CON laws are associated with

- fewer hospitals per capita;[6]
- fewer ambulatory surgical centers per capita;[7]
- fewer rural hospitals per capita;[8]
- fewer rural ambulatory surgical centers per capita;[9]
- fewer hospital beds per capita;[10]
- fewer hospice care facilities;[11]
- fewer dialysis clinics;[12]

Figure 2. States That Require a CON for Hospital Beds



Source: Matthew D. Mitchell, Anne Philpot, and Jessica McBirney, "The State of Certificate-of-Need Laws in 2020" (unpublished manuscript, forthcoming), PDF file.

- fewer hospitals offering MRI, CT, and PET scans;[13]
- longer driving distances to obtain care;[14] and
- greater racial disparities in the provision of care.[15]

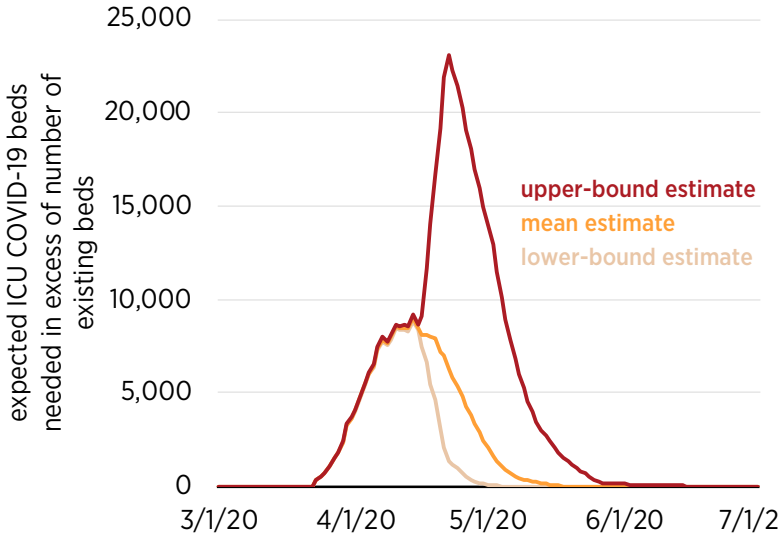
The estimated size of these relationships is often quite large. One study, for example, found that CON states have 30 percent fewer hospitals per capita than non-CON states.[16] Another found that, compared with non-CON states, in states where a CON is required to obtain a hospital bed, there are 13.1 fewer hospital beds per 10,000 residents.[17]

Hospital beds are a particularly important aspect of healthcare capacity in the fight against COVID-19. As shown in figure 2, 27 states require providers to obtain CONs before acquiring hospital beds. In many cases, providers must obtain CONs even to relocate beds from one facility to another.[18] In the next section, we examine how these rules relate to bed shortages.

II. ESTIMATED ICU BED SHORTAGES

The Institute for Health Metrics and Evaluation (IHME) has produced a number of widely cited estimates of hospital capacity shortages in light of COVID-19. For each state, it has estimated lower-bound, upper-bound, and mean ICU bed shortages over the first seven months of 2020. Figure 3 shows national estimates (as of April 22) of ICU bed shortages. One can think of these as the portions of the curve in figure 1 that lie above the horizonal capacity line.

Figure 3. Projected ICU Bed Shortage



Source: "COVID-19 Estimate Downloads," Institute for Health Metrics and Evaluation, accessed April 22, 2020, http://www.healthdata.org/covid/data-downloads.

According to IHME's mean estimate, the national ICU bed shortage peaked on April 14 at about 9,000 beds. According to the worst-case scenario, the ICU bed shortage will peak later in April at about 23,000 beds.

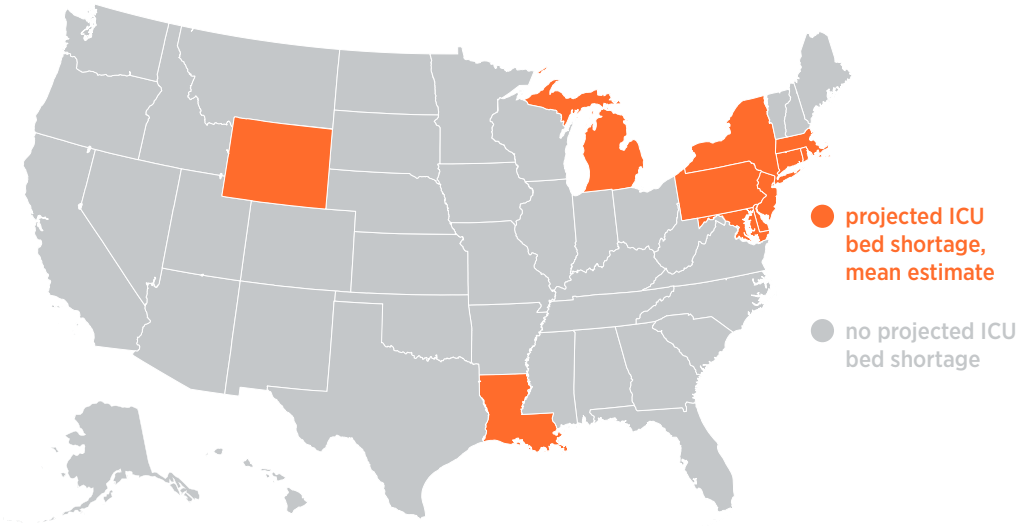
According to these estimates, however, the ICU bed shortage is driven mostly by a few states. In most states, there will be no shortage at all. This is some indication that the public's precautionary measures are flattening the curve. It also reflects the fact that most hospitals have been ordered to cancel elective procedures, freeing up resources for COVID patients. As many have noted, however, this strategy is not sustainable. Hospitals are postponing needed procedures such as mastectomies and chemotherapy treatments for less aggressive cancers.[19] And because elective procedures are their bread and butter, hospitals are hemorrhaging money that will be necessary to pay those caregivers who are on the frontlines fighting COVID. The financial viability of these hospitals will be especially important if the virus returns in the fall.

III. ICU BED SHORTAGES AND CERTIFICATES OF NEED

Figure 4 shows those states in which the IHME's mean estimate projects an ICU bed shortage. Eleven states in total are expected to experience a shortage of ICU beds; eight of these require a CON for hospital beds.

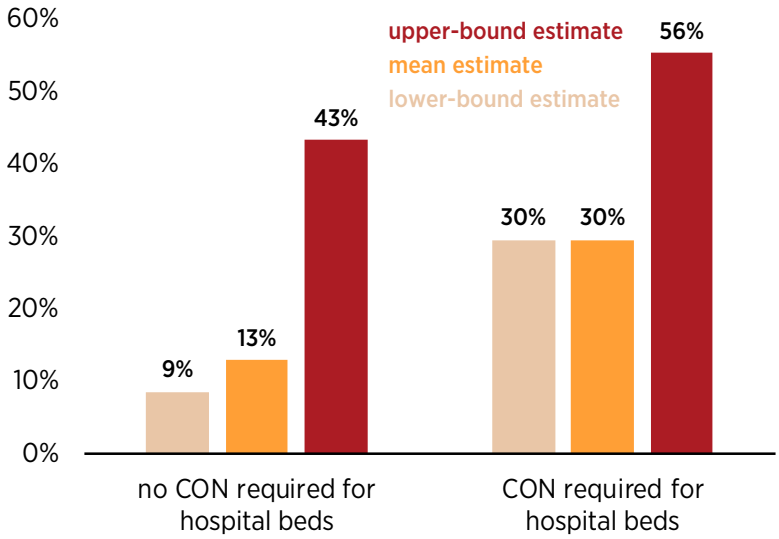
Figure 5 shows the share of states that are projected to experience an ICU bed shortage, broken down by whether or not the states require a CON for hospital beds. Among those states that do

Figure 4. States Projected to Experience an ICU Bed Shortage



Source: "COVID-19 Estimate Downloads," Institute for Health Metrics and Evaluation.

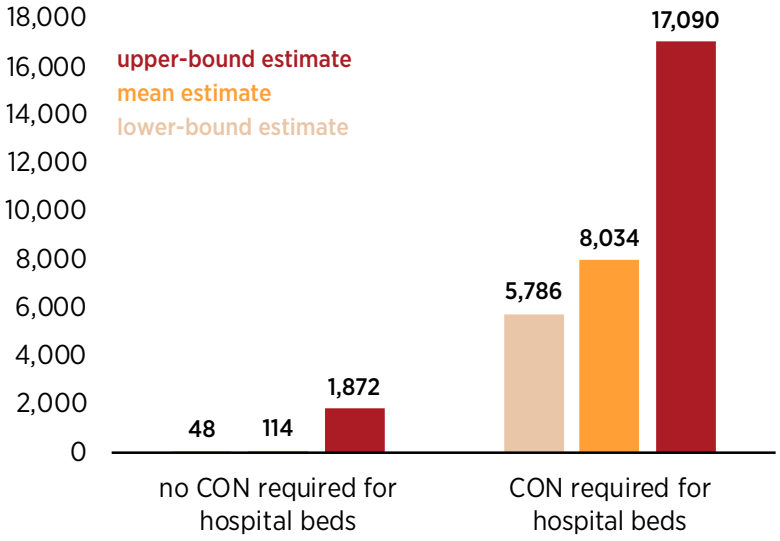
Figure 5. Percentage of States Projected to Experience an ICU Bed Shortage



Source: Authors' calculations based on "COVID-19 Estimate Downloads," Institute for Health Metrics and Evaluation and Mitchell, Philpot, and McBirney, "The State of Certificate-of-Need Laws in 2020."

not require a CON for hospital beds, 13 percent are projected to experience a shortage, according to the mean estimate. But among those states that require a CON for hospital beds, 30 percent are projected to experience an ICU bed shortage. The difference between these sample means is statistically significant at the 10 percent level.

Figure 6. Estimated ICU Bed Shortage over Seven Months

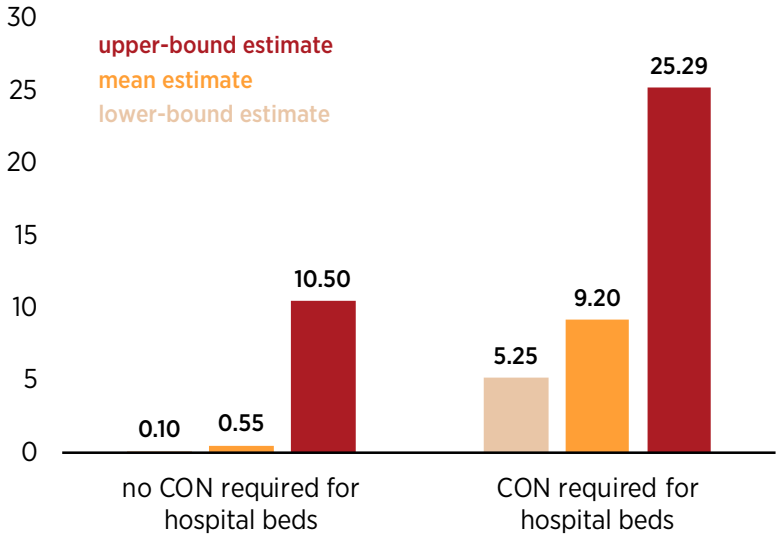


Source: Authors' calculations based on "COVID-19 Estimate Downloads," Institute for Health Metrics and Evaluation and Mitchell, Philpot, and McBirney, "The State of Certificate-of-Need Laws in 2020."

Figure 6 shows average estimated ICU bed shortages projected over seven months, broken down by whether or not the states require a CON for hospital beds. Among those states that do not, the mean estimate is that there will be a shortage of about 114 ICU beds per state over the course of seven months. But among those states that require a CON for hospital beds, the mean estimate is that there will be a shortage of more than 8,000 beds over the course of the infection. The difference between these sample means is statistically significant at the 10 percent level.

In figure 7, we show the seven-month bed shortage as a share of each state's population. Among those states that do not require a CON for hospital beds, the mean estimate is that there will be a shortage of just over one-half of one ICU bed per 10,000 residents. But among states that require a CON for hospital beds, the mean estimate is that there will be a shortage of more than 9 ICU beds per 10,000 residents. The difference between these sample means is statistically significant at the 5 percent level.

Figure 7. Estimated ICU Bed Shortage per 10,000 Residents over Seven Months



Source: Authors' calculations based on "COVID-19 Estimate Downloads," Institute for Health Metrics and Evaluation and Mitchell, Philpot, and McBirney, "The State of Certificate-of-Need Laws in 2020."

IV. DISCUSSION

According to our analysis, states that require a CON for hospital beds are statistically significantly more likely to experience a shortage of ICU beds over the course of the COVID-19 pandemic. The shortages are expected to be larger in these states, both in absolute and in per capita terms. To be precise, there is a 13 percent chance that the average non-CON state will experience a shortage of ICU beds, while there is a 30 percent chance that the average CON state will experience such a shortage. The average non-CON state is expected to experience a shortage of 114 ICU beds (a little more than 0.5 beds per 10,000 residents) over the course of the pandemic, while the average CON state is expected to experience a shortage of over 8,000 beds (about 9 beds per 10,000 residents) over the course of the pandemic.

To see if these differences were possibly driven by confounding factors, we gathered state demographic data on race, gender, age, economic conditions, and underlying health factors.[20] Table 1 shows the descriptive statistics for these factors, broken down by whether or not states require a CON for hospitals beds. In most cases, these factors do not differ between CON and non-CON states. There are, however, statistically significantly more black individuals and more adults with diabetes in CON states relative to non-CON states. The differences in ICU bed shortages between CON and non-CON states, however, remain statistically significant in regression models that control for these factors.[21]

So far, 22 states have temporarily suspended or somehow relaxed their CON requirements to make it easier for providers to increase capacity.[22] We ran tests to see if these temporary policy changes

made a difference in terms of shortages and found that they have no statistically significant relationship with ICU bed shortages. This suggests that it may take weeks or perhaps even months to build this capacity.

Overall, the results suggest that CON regulators have not accurately assessed the public's need for ICU beds in the event of a potentially catastrophic pandemic. Policymakers who wish to "raise the bar" so that their states are better prepared to face the next health crisis should consider eliminating their CON laws.[23]

ABOUT THE AUTHORS

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Table 1. Descriptive Statistics

	STATES THAT DO NOT REQUIRE A CON FOR HOSPITAL BEDS					STATES THAT REQUIRE A CON FOR HOSPITAL BEDS				
	OBSERVATIONS	MEAN	STD. DEV.	MIN	MAX	OBSERVATIONS	MEAN	STD. DEV.	MIN	MAX
BED SHORTAGE INDICATOR										
ICU bed shortage indicator, lower estimate (1 = expected shortage, 0 = no expected shortage)	23	0.09	0.29	0.00	1.00	27	0.30	0.47	0.00	1.00
ICU bed shortage indicator, mean estimate (1 = expected shortage, 0 = no expected shortage)	23	0.13	0.34	0.00	1.00	27	0.30	0.47	0.00	1.00
ICU bed shortage indicator, upper estimate (1 = expected shortage, 0 = no expected shortage)	23	0.43	0.51	0.00	1.00	27	0.56	0.51	0.00	1.00
BED SHORTAGE OVER SEVEN MONTHS										
Estimated ICU bed shortage over seven months, lower estimate	23	48.33	215.11	0.00	1032.20	27	5785.67	19730.96	0.00	98892.61
Estimated ICU bed shortage over seven months, mean estimate	23	113.77	320.26	0.00	1269.68	27	8033.79	24187.43	0.00	118350.30
Estimated ICU bed shortage over seven months, upper estimate	23	1871.52	4029.89	0.00	17737.34	27	17089.82	37994.06	0.00	175139.70
BED SHORTAGE OVER SEVEN MONTHS, DIVIDED BY POPULATION										
Estimated ICU bed shortage over seven months, divided by population, lower estimate	23	9.90e-06	4.61e-05	0	0.000222	27	5.25e-04	0.001292	0	0.005061
Estimated ICU bed shortage over seven months, divided by population, mean estimate	23	5.53e-05	0.000201	0	0.000937	27	0.00092	0.001961	0	0.006468
Estimated ICU bed shortage over seven months, divided by population, upper estimate	23	0.00105	0.002576	0	0.009802	27	0.002529	0.004697	0	0.016989

Table 1 (continued)

	STATES THAT DO NOT REQUIRE A CON FOR HOSPITAL BEDS					STATES THAT REQUIRE A CON FOR HOSPITAL BEDS				
	OBSERVATIONS	MEAN	STD. DEV.	MIN	MAX	OBSERVATIONS	MEAN	STD. DEV.	MIN	MAX
CONTROL VARIABLES										
Log of population	23	15.08	1.11	13.27	17.49	27	15.31	0.95	13.35	16.87
Percent younger than age 18	23	23.15	2.22	18.60	29.50	27	21.70	1.45	18.40	24.90
Percent of females age 15 to 44	23	38.40	2.11	33.60	44.00	27	38.02	1.51	35.10	41.60
Percent age 65 or older	23	16.21	2.02	11.10	20.60	27	16.76	1.80	11.90	20.50
Percent white	23	81.57	8.77	59.50	94.30	27	71.56	14.13	24.30	94.10
Percent black	23	6.63	7.03	0.50	32.40	27	14.07	10.15	1.20	38.00
Percent Hispanic	23	13.60	13.37	1.70	49.10	27	10.76	7.17	1.40	29.00
Percent below poverty level	23	24.76	3.13	17.30	31.00	27	24.71	3.33	19.80	33.10
Real per capita income in 2017	23	48615.61	4484.90	40118.00	56114.00	27	48715.37	5273.64	40195.00	63366.00
Percent of adults with diabetes	23	8.91	1.57	6.20	12.10	27	9.80	1.58	7.30	13.20
Seasonally adjusted unemployment rate in March 2020	23	4.08	1.27	2.20	6.90	27	4.22	1.03	2.60	6.30

Table 2. Predicting a Shortage in ICU Beds			
	(1)	(2)	(3)
	FULL MODEL	LIMITED MODEL	MORE LIMITED MODEL
CON required for hospital beds	0.0392	1.235**	0.589
	(0.129)	(0.524)	(0.422)
Log of population	−0.0483		
	(0.0852)		
Percent younger than age 18	−0.0260		
	(0.0629)		
Percent of females age 15 to 44	−0.0641		
	(0.102)		
Percent age 65 or older	−0.0181		
	(0.115)		
Percent white	−0.00440		
	(0.00356)		
Percent black	0.0183**		
	(0.00726)		
Percent Hispanic	0.00754	−0.00874	
	(0.00574)	(0.0268)	
Percent below poverty level	0.0380	0.187	
	(0.0349)	(0.144)	
Real per capita income in 2017	5.14e-05***	0.000383***	
	(1.55e-05)	(0.000111)	
Percent of adults with diabetes	−0.0969		
	(0.0694)		
Seasonally adjusted unemployment rate in March 2020	0.0750	0.598**	
	(0.0507)	(0.270)	
Constant	1.468	−27.74***	−1.124***
	(6.343)	(9.113)	(0.335)
Observations	50	50	50
R-squared	0.49		

Notes: The dependent variable takes the value 1 if there is an expected shortage in ICU beds (in the mean estimate) during the pandemic and 0 otherwise. The full model completely determines the left-hand-side variable in a probit regression, so we present an OLS model in column (1). Columns (2) and (3) show the results of probit models. In this instance, the limited model is our preferred model. Heteroscedasticity-robust standard errors are in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 3. Modeling the Total Shortage in ICU Beds Over Seven Months			
	(1)	(2)	(3)
	FULL MODEL	LIMITED MODEL	MORE LIMITED MODEL
CON required for hospital beds	7,918*	9,066*	7,920*
	(4,399)	(5,083)	(4,663)
Log of population	5,011		
	(4,384)		
Percent younger than age 18	−1,731		
	(2,313)		
Percent of females age 15 to 44	−4,535		
	(3,875)		
Percent age 65 or older	−4,197		
	(4,306)		
Percent white	−293.8		
	(261.5)		
Percent black	−74.76		
	(227.1)		
Percent Hispanic	322.0*	418.9	
	(171.6)	(262.8)	
Percent below poverty level	2,783	941.9	
	(1,962)	(825.1)	
Real per capita income in 2017	1.269	1.608*	
	(0.763)	(0.863)	
Percent of adults with diabetes	−4,933		
	(3,153)		
Seasonally adjusted unemployment rate in March 2020	−952.6	−537.1	
	(1,063)	(841.2)	
Constant	144,089	−104,907	113.8*
	(256,174)	(63,931)	(66.66)
Observations	50	50	50
R-squared	0.282	0.202	0.049

Notes: The dependent variable is the total expected shortage in ICU beds (in the mean estimate) over seven months. Regressions results are OLS. Heteroscedasticity-robust standard errors are in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 4. Modeling the Total Shortage in ICU Beds Over Seven Months, Divided by Population			
	(1)	(2)	(3)
	FULL MODEL	LIMITED MODEL	MORE LIMITED MODEL
CON required for hospital beds	9.96**	9.88***	8.65**
	(0.000402)	(0.000340)	(0.000380)
Log of population	1.21e-05		
	(0.000263)		
Percent younger than age 18	−0.000193		
	(0.000225)		
Percent of females aged 15 to 44	−0.000624		
	(0.000413)		
Percent age 65 or older	−0.000582		
	(0.000430)		
Percent white	−1.46e-05		
	(1.47e-05)		
Percent black	6.48e-06		
	(1.73e-05)		
Percent Hispanic	6.39e-05***	4.51e-05**	
	(2.24e-05)	(1.77e-05)	
Percent below poverty level	0.000275**	0.000122*	
	(0.000136)	(6.64e-05)	
Real per capita income in 2017	1.89e-07***	2.18e-07***	
	(5.83e-08)	(6.62e-08)	
Percent of adults with diabetes	−0.000367		
	(0.000228)		
Seasonally adjusted unemployment rate in March 2020	−0.000140	−8.39e-05	
	(0.000114)	(0.000106)	
Constant	0.0258	−0.0138***	5.53e-05
	(0.0237)	(0.00469)	(4.18e-05)
Observations	50	50	50
R-squared	0.538	0.461	0.084

Notes: The dependent variable is the total expected shortage in ICU beds (in the mean estimate) over seven months, divided by the population. Regressions results are OLS. Heteroscedasticity-robust standard errors are in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

NOTES

1. Brandon Spektor, "Coronavirus: What Is 'Flattening the Curve,' and Will It Work?," *Live Science*, March 16, 2020.

2. Eliza Barclay, Dylan Scott, and Christina Animashaun, "The US Doesn't Just Need to Flatten the Curve. It Needs to 'Raise the Line.,'" *Vox*, April 7, 2020.

3. This explains why the Federal Trade Commission and the US Department of Justice, under both Democratic and Republican leadership, have long maintained that CON laws are anticompetitive. Monica Noether, *Competition among Hospitals* (Washington, DC: Federal Trade Commission, 1987); Daniel Sherman, *The Effect of State Certificate-of-Need Laws on Hospital Costs: An Economic Policy Analysis* (Washington, DC: Federal Trade Commission, 1988); Antitrust Division of the US Department of Justice and Federal Trade Commission, "Competition In Health Care and Certificates of Need" (joint statement before the Illinois Task Force on Health Planning Reform, US Department of Justice, Washington, DC, September 15, 2008); Federal Trade Commission, "FTC Staff Supports North Carolina Legislative Proposal to Limit Certificate of Need Rules for Health Care Facilities," press release, July 13, 2015, https://www.ftc.gov/news-events/press-releases/2015/07/ftc-staff-supports-north-carolina-legislative-proposal-limit; Federal Trade Commission and US Department of Justice, *Joint Statement of the Federal Trade Commission and the Antitrust Division of the U.S. Department of Justice on Certificate-of-Need Laws and South Carolina House Bill 3250*, January 2016; Federal Trade Commission and US Department of Justice, *Joint Statement of the Federal Trade Commission and the Antitrust Division of the U.S. Department of Justice to the Virginia Certificate of Public Need Work Group*, October 2015.

4. One Virginia radiology center spent five years and $175,000 applying for a CON. Kent Hoover, "Doctors Challenge Virginia's Certificate-of-Need Requirement," *Business Journals*, June 5, 2012.

5. James Bailey, "Can Health Spending Be Reined In through Supply Constraints? An Evaluation of Certificate-of-Need Laws" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, July 2016); Matthew D. Mitchell, "Do Certificate-of-Need Laws Limit Spending?" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, September 2016); Thomas Stratmann and David Wille, "Certificate-of-Need Laws and Hospital Quality" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, September 2016); James Bailey, "The Effect of Certificate of Need Laws on All-Cause Mortality," *Health Services Research* 53, no. 1 (2018): 49–62. Stratmann and Wille find that CON laws are associated with higher mortality rates following heart attack, heart failure, and pneumonia. And in states with four or more CON laws, readmission rates following heart attack and heart failure are higher, as are postsurgery complications, while patient satisfaction levels are lower. Bailey finds that CON laws have no statistically significant association with all-cause mortality, though the point estimates suggest that, if anything, the laws are more likely to increase all-cause mortality than to decrease it.

6. Thomas Stratmann and Jacob W. Russ, "Do Certificate-of-Need Laws Increase Indigent Care?" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, July 2014).

7. Thomas Stratmann and Christopher Koopman, "Entry Regulation and Rural Health Care: Certificate-of-Need Laws, Ambulatory Surgical Centers, and Community Hospitals" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, February 18, 2016).

8. Stratmann and Koopman, "Entry Regulation and Rural Health Care."

9. Stratmann and Koopman.

10. Stratmann and Russ, Do Certificate-of-Need Laws Increase Indigent Care?"

11. Melissa D. A. Carlson et al., "Geographic Access to Hospice in the United States," *Journal of Palliative Medicine* 13, no. 11 (2010): 331–38.

12. Jon M. Ford and David L. Kaserman, "Certificate-of-Need Regulation and Entry: Evidence from the Dialysis Industry," *Southern Economic Journal* 59, no. 4 (1993): 783–91.

13. Thomas Stratmann and Matthew Baker, "Are Certificate-of-Need Laws Barriers to Entry? How They Affect Access to MRI, CT, and PET Scans" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, January 2016).

14. David M. Cutler, Robert S. Huckman, and Jonathan T. Kolstad, "Input Constraints and the Efficiency of Entry: Lessons from Cardiac Surgery," *American Economic Journal: Economic Policy* 2, no. 1 (2010): 51–76.

15. Derek DeLia et al., "Effects of Regulation and Competition on Health Care Disparities: The Case of Cardiac Angiography in New Jersey," *Journal of Health Politics, Policy and Law* 34, no. 1 (2009): 63–91.

16. Stratmann and Koopman, "Entry Regulation and Rural Health Care."

17. Stratmann and Russ, "Do Certificate-of-Need Laws Increase Indigent Care?"

18. In many of these states, policymakers have temporarily eased or suspended these requirements during the pandemic. However, as we will explain later, these temporary measures do not seem to have affected ICU bed shortages.

19. These may be tallied among the unseen costs of these policies. "Sending Hospitals Into Bankruptcy," *Wall Street Journal*, April 19, 2020. There is also a concern about missed diagnoses. Professor of medicine Karol Sikora, an oncologist and former director of the WHO Cancer Programme, has recently noted that "In a usual April, we would normally see around 30,000 people diagnosed with cancer. I would be surprised if that number reaches 5,000 this month." Karol Sikora (@ProfKarolSikora), "In a usual April, we would normally see around 30,000 people diagnosed with cancer. I would be surprised if that number reaches 5,000 this month," Twitter, April 22, 2020, 12:52 p.m., https://twitter.com/ProfKarolSikora/status/1253003690816012289.

20. Specifically, from the Census Bureau, we gathered data on the total population; the percentage of the population younger than age 18; the percentage of the population age 65 or older; the percentage of the population that is female and of childbearing age (15–44); the percentage of the population that is white, black, or Hispanic; and the percentage of the population that is below the poverty level. From the Bureau of Economic Analysis, we collected 2017 per capita income. From the Bureau of Labor Statistics, we gathered data on the seasonally adjusted unemployment rate in March of 2020. And from the Centers for Disease Control and Prevention, we gathered data on the percent of adults (age 18 or older) with diabetes. "American Community Survey" (database), Census Bureau, accessed, April 15, 2020, data.census.gov; "Per Capita Income" (dataset), Bureau of Economic Analysis, accessed April 15, 2020, bea.gov; "Seasonally-Adjusted Unemployment Rate" (dataset), Bureau of Labor Statistics, accessed April 15, 2020, bls.gov; "US National, State, and County Diabetes Data" (dataset), Centers for Disease Control and Prevention, accessed April 15, 2020, cdc.gov/diabetes/data/index.html.

21. These results are found in tables 2–4.

22. Angela C. Erickson, "States Are Suspending Certificate of Need Laws in the Wake of COVID-19 but the Damage Might Already Be Done," Pacific Legal Foundation, March 31, 2020.

23. For a discussion of ways that states can address regulations suspended during the pandemic, see Patrick A. McLaughlin, Matthew D. Mitchell, and Adam Thierer, "A Fresh Start: How to Address Regulations Suspended during the Coronavirus Crisis" (Mercatus Policy Brief, Mercatus Center at George Mason University, Arlington, VA, April, 2020). For a discussion of the ways that states can reform CON laws see Matthew D. Mitchell, Elise Amez-Droz, and Anna Parsons, "Phasing out Certificate-of-Need Laws: A Menu of Options" (Mercatus Policy Brief, Mercatus Center at George Mason University, Arlington, VA, February, 2020).