GEORGIA
PUBLIC POLICY FOUNDATION

ECONOMIC REPORT ON GEORGIA'S CERTIFICATE OF NEED PROGRAM

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EXECUTIVE SUMMARY

Certificate of need (CON) laws remain one of the most contentious public policy debates. Despite their inception nearly fifty years ago, ongoing questions about cost, access and the role of community healthcare remain. The purpose of this report is to provide a summary of the existing research on the topic, offer new data as states modernize their existing laws and provide a pathway for Georgia policymakers by dispelling misconceptions often cited in defense of CON.

CON laws were established as a means to control the rising costs of healthcare. Regulators were given the responsibility of determining healthcare needs. Notably, the enactment of these laws occurred during a period in which the government reimbursed providers based on how much they spent. As such, hospitals were incentivized to keep spending money by adding additional beds and new equipment.

Only a decade after passage, however, Congress realized the fallacy of this shift in policy and repealed the federal CON law. By requiring government approval, CON had effectively granted existing hospitals a competitor's veto. While advancements in healthcare led to additional procedures being safely done in outpatient-based settings, competition and innovation were essentially restricted to what the incumbent provider chose to offer in most communities.

Elective surgery and imaging remain the most profitable service lines for hospitals, with health systems exerting their nonprofit status and the mandate to treat every patient regardless of ability to pay as justification for the preservation of CON. A Georgia without CON, its defenders claim, would result in the proliferation of ambulatory surgery centers (ASCs) and imaging facilities that would force the widespread closure of community hospitals.

CON laws were never intended to subsidize healthcare for the uninsured. There are local, state and federal reimbursement funds directly dedicated to offsetting these costs and ensuring that nonprofit hospitals remain financially viable. Despite the COVID-19 pandemic, many Georgia health systems retain profits in the hundreds of millions, especially in the wake of continued consolidation.

Most of the empirical literature we reviewed – well over 100 tests – found that CON laws do not contain cost, do not offer adequate and equitable access and do not provide quality improvement. Additionally, we did not find any correlation in the reduction of CON laws and an increase in rural hospital closures in the states we examined.

INTRODUCTION

On October 4, 1988, U.S. Representative Roy Rowland took to the floor of Congress. His speech that day focused on the government regulation known as certificate of need (CON) and its "harmful impact" on a rural hospital in his congressional district.[1] The regulation requires providers who wish to open or expand their facilities to first prove to a regulator that their community "needs" the service in question.

Rowland, a native of Wrightsville in eastern Georgia, was a family practice physician in nearby Dublin and a three-term member of the Georgia House of Representatives prior to his election to Congress in 1982. The congressman also had a personal connection to the issue, as the bill that established the federal CON law was what first inspired him to run for office. CON laws allow regulators to determine whether healthcare providers are allowed to open or expand facilities. As Rowland would later recall, "I felt the government was getting more involved in telling physicians and other medical people how to do their practices, how to take care of patients. So I decided I wanted to try and do something about it." [2]

However, by the time of his speech Congress had already eliminated the federal mandate requiring states to enforce CON laws in 1986. Rowland was now focused on ending the remaining state-based CON laws, specifically the one regulating healthcare providers in his home state. The congressman shared with his colleagues the story of how Putnam General Hospital in Eatonton sought to renovate its twenty-year old facility. The project was going to be financed by a local 1-cent sales tax that had been voted on and approved by the community. However, since there were capital improvements being made to the facility, the renovation required approval by Georgia's health planning agency under the state's CON law. After reviewing the proposed project, the state "looked over the request for the locally funded hospital improvements and decided to deny it -- unless the hospital eliminated 10 beds."[3] The health planning agency determined there were too many hospital beds already in the area, despite the fact that Putnam General was not seeking to add additional beds as part of its renovation. Rowland went on to explain that not only would eliminating those ten beds not generate any significant healthcare cost savings, but the mandatory bed reduction would necessitate reducing the number of nurses being trained in the hospital's licensed practical nurse (LPN) program. In addition, it would be much more costly if the hospital ever sought to regain those lost beds through the state's CON program in the future.

"At first glance, [certificate of need] may have looked pretty good," said Rowland. "In practice, however, the effect of certificate-of-

need on healthcare costs has been dubious, at best. And the program has certainly been insensitive in many instances to the true needs of our communities… In my view, it's a classic case of a bureaucracy paying more attention to numbers on a piece of paper than to reality. And the reality is the harmful impact this would have on the community without doing anything significant to cut costs."[4]

Unfortunately, the sentiment behind that speech from Rowland remains true 35 years later. For many Georgians, the state's existing CON laws have limited their access to lower cost, higher quality healthcare services by providing entrenched incumbents with monopolistic control, often over entire counties and regions. Since then, Georgia communities spanning a wide range of socioeconomic statuses have suffered from the consequences of this regulation. In this study, we review the academic research on the efficacy of CON regulations and examine the arguments regarding access, cost containment and quality of care. We also assess the CON application process under the state's existing structure and compare Georgia to other states with similar profiles that have reduced or repealed their CON laws. We focus, in particular, on the impact of the regulation on safety-net providers and their communities.

1 – 134 Cong. Rec. H9455-01 (1988).
2 – https://magazines.augusta.edu/2017/06/19/life-story/
3 – 134 Cong. Rec. H9455-01 (1988).
4 – 134 Cong. Rec. H9455-01 (1988).

THE ORIGIN OF AND RATIONALE FOR CON REGULATION

New York was the first state to establish a certificate of need program in healthcare in 1964. The biggest impetus for CON laws, however, came a decade later. In 1975, Congress passed and President Ford signed the National Health Planning and Resources Development Act (NHPRDA). The NHPRDA threatened to withdraw federal healthcare funds from any state that refused to enact a CON program. Due to repeated postponement, that threat never actually materialized.[5] Nevertheless, by the early 1980s, almost every state in the nation had adopted a CON program.

Then, as now, policymakers were worried about skyrocketing healthcare costs. In the run-on-sentences that characterize federal legislation, Congress lamented the "massive infusion of Federal funds into the existing healthcare system [that] has contributed to inflationary increases in the cost of healthcare and failed to produce an adequate supply or distribution of health resources, and consequently has not made possible equal access for everyone to such resources."[6]

Federal lawmakers held the common belief that healthcare was different. Medical services and technologies can be confusing.

Patients are typically not experts and are often making once-in-a-lifetime decisions. And—as lawmakers knew well—someone else usually picks up the tab. So, they reasoned, patients might get suckered into agreeing to expensive hospital stays and unneeded procedures.

And there was some evidence for this. In 1959, UCLA health researcher Milton Roemer co-authored a study reporting a positive correlation between the number of hospital beds available per capita and the number of used hospital days per capita.[7] The finding became known as "Roemer's Law" and was shortened to the pithy characterization that "in an insured population, a hospital bed built is a hospital bed filled."[8]

In encouraging CON, lawmakers hoped hospitals would build fewer beds, fill them with fewer patients and spend less money. The main purpose of CON, therefore, was to reduce healthcare expenditures by rationing care. The authors of the NHPRDA also sought to reduce healthcare costs by encouraging "the use of appropriate alternative levels of healthcare, and for the substitution of ambulatory and intermediate care."[9] Beyond costs and expenditures, the authors of the NHPRDA hoped to ensure an adequate supply of care, especially for "underserved populations" including "those which are located in rural or economically depressed areas."[10] Finally, they hoped to "achieve needed improvements in the quality of health services."[11]

These goals—cost containment, adequate and equitable access and quality improvement—remain widely shared aims of health policy. And, as we will see, most of the empirical literature on CON tests whether the regulation serves these goals. Most of the literature finds it does not.

5 – Christopher J. Conover and James Bailey, "Certificate of Need Laws: A Systematic Review and Cost-Effectiveness Analysis," BMC Health Services Research 20, no. 1 (August 14, 2020): 2, https://doi.org/10.1186/s12913-020-05563-1.
6 – "National Health Planning and Resources Development Act of 1974," Pub. L. No. 93–641, 88 U.S.C. 2225 (1975), https://www.gpo.gov/fdsys/pkg/STATUTE-88/pdf/STATUTE-88-Pg2225.pdf"Findings and Purpose."
7 – M. Shain and M. I. Roemer, "Hospital Costs Relate to the Supply of Beds," Modern Hospital 92, no. 4 (April 1959): 71-73.
8 – Dan Page, "Obituary: Milton I. Roemer, Pioneering UCLA Health Services Professor and Professional Who Defined Health Policy in U.S., Abroad," UCLA School of Public Health Press Release, January 8, 2001, https://web.archive.org/web/20120304021055/http://www.ph.ucla.edu/pr/miroemer.html.
9 – National Health Planning and Resources Development Act of 1974, 2.
10 – National Health Planning and Resources Development Act of 1974, 3.
11 – National Health Planning and Resources Development Act of 1974, 4.

WHY ASSESSING HEALTHCARE NEED IS DIFFICULT

Unlike other varieties of regulation, the CON process does not typically include an assessment of a provider's qualifications. Nor do regulators appraise the adequacy of a provider's facility or its safety record. Instead, regulators are charged with determining whether the community "needs" the service the provider hopes to offer. This is an unusual remit for a regulator. In the vast majority of markets, need is assessed by the service providers themselves, based on their expectation of profitability.

Several factors complicate the regulator's task:

1) First, compared to providers, regulators typically have less local knowledge about the community, its tastes, its culture and its economic situation.

2) Second, as economic theory teaches, value is subjective. Consumers don't just care about the technical attributes of care. They also care about the convenience of care, the modality of care and the cultural sensitivity of care. Different consumers will have subjective preferences around these factors.
Health care consumers may feel, for example, that they need a provider who understands their particular cultural, linguistic or religious needs. But providers who cater to a specific cultural or religious community have often been denied certificates of need because regulatory formulas make no room for such considerations.[12]

3) Third, while providers risking their own capital or borrowed capital have a strong incentive to accurately assess the viability of a project, public regulators have no such skin in the game.

4) Fourth, the formulas on which regulators rely create perverse incentives. For example, if an existing provider knows that his potential competitor is likely to be denied a certificate of need if his facility is under-utilized, he then has an incentive to make sure his facility is under-utilized. So, ironically, the formula encourages providers to acquire equipment and then not use it, undermining efficiency rather than enhancing it.

5) By far the most significant problem with regulatory needs assessment is the fact that it can so easily be used for anti-competitive purposes. In most CON states –including Georgia– a certificate can be denied if the regulator finds the new service will "duplicate" an existing service. This virtually guarantees a local monopoly, especially considering that in most CON states – including Georgia– incumbent providers are allowed to sit on the board that makes the decision. This is why the regulations are sometimes called "competitor's veto laws."[13] And in most CON states –including Georgia– incumbent providers are allowed to be a part of the process, challenging competitors' applications and in some cases even appealing decisions that they do not like.[14] As a remarkable indication of the anticompetitive nature of CON regulations, competitors' objections are often dropped and CONs are subsequently granted once applicants agree not to directly compete with incumbent providers.

These anticompetitive features help explain why antitrust authorities at the Federal Trade Commission and at the Department of Justice have taken the position for decades that CON laws are anticompetitive.[15]

12 - In Northern Virginia, radiologist Mark Baumel saw the need to offer those at risk of colon cancer a non-invasive alternative to the invasive (and therefore too-often-skipped) standard colonoscopy. Regulators disagreed. In Louisiana, social worker Ursula Newall-Davis recognized a need for respite care for those who look after loved ones with special needs. The regulator disagreed. In Kentucky, home health care specialists Dipendra Tiwari and Kishor Sapkota recognized a need for home health care that catered to the particular sensitivities of their Nepalese immigrant community. The regulator disagreed. In New York city, the all-female and all-Hasidic staff of Ezras Nashim saw a need for an ambulance service that catered to their religious community. There, too, the regulators initially disagreed.

13 - Maureen K. Ohlhausen and Gregory P. Luib, "Brother, may I?: the challenge of competitor control over market entry," 11–17 Journal of Antitrust Enforcement (Sept. 10, 2015), https://www.ftc.gov/system/files/documents/public_statements/801861/150917brothermayi.pdf; Timothy Sandefur, "State "Competitor's Veto" Laws And The Right To Earn A Living: Some Paths To Federal Reform," Harvard Journal of Law & Public Policy 38, 2015: 1009-1072, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2613683.

14 - Five CON states do not allow incumbents a role in the CON process. These are Indiana, Louisiana, Michigan, Nebraska, and New York. Mississippi and Oklahoma permit providers to appeal decisions with which they disagree. Others may do so as well. For more details see Cavanaugh et al., "Conning the Competition," 4, 61, 75, 89, 117, and 131, respectively.

15 - Keith B. Anderson and David I. Kass, "Certificate Of Need Regulation of Entry Into Home Health Care: A Multi-Product Cost Function Analysis" (Washington, D.C.: Federal Trade Commission, 1986); Daniel Sherman, "The Effect of State Certificate-of-Need Laws on Hospital Costs: An Economic Policy Analysis | Federal Trade Commission," Staff Report of the Bureau of Economics (Washington, D.C.: Federal Trade Commission, January 1988), https://www.ftc.gov/reports/effect-state-certificate-need-laws-hospital-costs-economic-policy-analysis; "Competition In Health Care And Certificates Of Need : Joint Statement Of The Antitrust Division Of The U.S. Department Of Justice And The Federal Trade Commission Before The Illinois Task Force On Health Planning Reform" (Washington, D.C.: Department of Justice, September 15, 2008), https://www.justice.gov/atr/competition-health-care-and-certificates-need-joint-statement-antitrust-division-us-department; Federal Trade Commission and U.S. 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, https://www.ftc.gov/policy/policy-actions/advocacy-filings/2016/01/joint-statement-federal-trade-commission-antitrust.

THE STATES AS LABORATORIES

In his dissent in *New State Ice Co. v. Liebmann*, Justice Louis D. Brandeis famously extolled what he called "one of the happy incidents of the federal system." Under federalism, he declared, "a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."[16] New State Ice was a certificate of need case.[17]

And due to its unique history, CON has proven to be an ideal topic for empirical study. By the mid-1980s the evidence was beginning to mount that certificate of need laws in healthcare did not achieve their stated goals.[18] At the same time, observers on the left and the right were coming to appreciate that regulations often protect politically powerful incumbents from competition and harm consumers.[19] It was in this context that Congress repealed the CON mandate in 1986.

Within three years, a total of twelve states had repealed their CON programs.[20] Over the decades that followed, a handful of others would follow suit, and still more significantly pared their programs back. The most-recent full repeal was in New Hampshire in 2016. In 2019, Florida eliminated its CON requirement for hospitals, ASCs and most other services. And in 2021, Montana eliminated all of its CON requirements except those for long-term care facilities. Today, 3-in-10 Americans live in a state with no CON regulation in healthcare and 4-in-10 Americans live in a state with either no or only one CON requirement.[21]

CON and non-CON states can be found in all regions of the country, they include both high- and low-income states and they include a wide variety of demographic and cultural populations. Thus, researchers can compare outcomes in CON and non-CON states to see what happens in states that have repealed or relaxed these regulations. Using modern econometric methods, researchers can control for factors such as economic and demographic differences that might also affect outcomes of interest.

In total, we have identified 94 peer-review studies assessing the effect of CON regulation.[22] Since many studies include more than one test, these studies encompass well over 100 tests of certificate of need in healthcare. We summarize this literature in the final section.

CON REGULATION IN GEORGIA

The Legislative History of CON in Georgia

The framework for Georgia's current CON system has been in place since 1975, when the state began reviewing new healthcare projects in accordance with the National Health Planning and Resources Development Act of 1974. Georgia's CON program was established as state law by the General Assembly in 1979. Notably, competitors were not allowed to challenge certificate of need applications at the state level until the law was amended in 1983. Since then, attempts to reform, modernize and even repeal the program have been met with varying degrees of success.

In 1991, as healthcare technology and quality evolved, Georgia's CON law was amended to allow for the emergence of outpatient surgeries in standalone ambulatory surgery centers, or ASCs. A less strenuous path that did not require a CON was established for single-specialty, physician owned ASCs to obtain a Letter of Non-Reviewability (LNR) from the state if their capital expenditures did not exceed $1 million.

In 2005, Governor Sonny Perdue established the Georgia Commission on the Efficacy of the CON Program. Georgia State University published a report for the commission that analyzed the effect that CON regulations had on the quality and cost of healthcare in Georgia and 10 other states.[23] The authors used a cross-border design to control for unobservable factors. They also used interviews and public information to develop an index measuring CON rigor based on fees, administrative requirements, reviewability, appeals and administrative complexity. They assess the effects of CON on acute care, long term care and home health markets, finding:

1. CON is associated with higher private inpatient acute care costs.
2. Acute care costs rise with the rigor of the CON program for the most resource-intensive acute care diagnoses.
3. Some evidence that CON is associated with higher Medicaid costs for home health services.

16 - New State Ice Co. v. Liebmann, 285 U.S. 262 (1932).
17 - Oklahoma required a certificate of need for the manufacture and sale of ice. The court ruled that this was an essentially private business and that the regulation violated the Due Process Clause of the Fourteenth Amendment. In his majority opinion Justice Sutherland saw the law for what it was: "The aim is not to encourage competition, but to prevent it; not to regulate the business, but to preclude persons from engaging in it."
18 - Fred J. Hellinger, "The Effect of Certificate-of-Need Legislation on Hospital Investment," Inquiry 13, no. 2 (1976): 187–93; David S. Salkever and Thomas W. Bice, "The Impact of Certificate-of Need Controls on Hospital Investment," The Milbank Memorial Fund Quarterly. Health and Society 54, no. 2 (1976): 185–214, https://doi.org/10.2307/3349587; F. A. Sloan and B. Steinwald, "Effects of Regulation on Hospital Costs and Input Use," The Journal of Law & Economics 23, no. 1 (1980): 81–109, https://doi.org/10.1086/466953; Frank A. Sloan, "Regulation and the Rising Cost of Hospital Care," The Review of Economics and Statistics 63, no. 4 (November 1, 1981): 479–87, https://doi.org/10.2307/1935842.
19 - The views of the Nobel Laureate and Chicago-school economist George Stigler are well known. In his famous 1971 article he wrote: "as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefits." It is often forgotten, however, that many on the left, from President Carter and Senator Kennedy to Ralph Nader, also saw regulations as anticompetitive. In their 1974 article Ralph Nader and Mark Green wrote: "our unguided regulatory system undermines competition and entrenches monopoly at the public's expense" and "the verdict is nearly unanimous that economic regulation over rates, entry, mergers, and technology has been anticompetitive and wasteful." George Stigler, "The Theory of Economic Regulation," Bell Journal of Economics and Management Science 2, (1971): 3–21; Mark Green and Ralph Nader, "Economic Regulation vs. Competition: Uncle Sam the Monopoly Man," Yale Law Journal 82, no. 5 (April 1973): 871–889.
20 - Arizona, California, Colorado, Idaho, Kansas, Minnesota, New Mexico, South Dakota, Texas, Utah, Wisconsin and Wyoming.
21 - There are twelve states that have no CONs in healthcare: California, Colorado, Idaho, Kansas, New Hampshire, North Dakota, Pennsylvania, South Dakota, Texas, Utah, Wisconsin, and Wyoming (Wisconsin does set numerical caps on certain types of medical equipment). Arizona, Minnesota, and New Mexico only require CONs for ambulance services (though like Wisconsin, Minnesota has caps). Indiana, Ohio, and Montana only require CONs for long-term care facilities. In total, eighteen states have either no CON in healthcare or require a CON for only one service. These eighteen states represent 42 percent of the U.S. population.
22 - The review of this literature is an ongoing enterprise and we expect to have reviewed more studies in the next several months.
23 - We have referenced the results of this report a number of times in the earlier section.

4. There is weak evidence that CON is associated with higher private long term care costs.
5. There is weak evidence that CON is associated with higher Medicaid long term care costs.
6. Some evidence that CON is associated with higher per-capita costs for home health services.
7. CON is associated with fewer hospitals.
8. CON is associated with fewer hospital beds.
9. CON is associated with fewer home health agencies per 1,000 residents.
10. CON is associated with fewer Medicare beneficiaries receiving home health services.
11. There is no significant relationship between the percent of hospital admissions that are self-pay, though when controlling for the number of uninsured and family income, CON is positively related to self-pay admission per uninsured.
12. There is no apparent difference in acute care quality in CON and non-CON markets.
13. In long term care, CON is associated with better quality on two measures but worse quality on six measures.
14. In home health markets, they find no evidence that CON affects any of 10 outcome measures of quality.
15. Acute care markets are less competitive when CON is rigorous.
16. CON is associated with lower levels of competition in home health agency markets.

As the Commission completed its study of CON, the Georgia House also established a Special Committee on Certificate of Need. This focus on CON led to the passage of significant reform in 2008. The bill was notable for its creation of "destination cancer hospital" in the state code to allow for the opening of the Cancer Treatment Centers of America facility in Newnan, and the subsequent 35 percent cap on Georgia residents as patients as part of the definition of destination cancer hospital. The legislation also exempted certain non-medical expenditures such as parking decks and medical office buildings from CON requirements, and hospitals and physician practices were exempted from acquiring a CON for MRI and CT investments under $1 million. The LNR process for new physician-owned single-specialty ASCs was amended to require commitments for indigent, charity care, and Medicaid patients served, while the cap on capital expenditures under the LNR process was increased from $1.7 million to $2.5 million.

In 2018, concurrent efforts by the Georgia House and Senate studied the issue of CON and its impact on Georgia's healthcare and economic landscape. The Georgia Senate Study Committee on Certificate of Need

Reform recommended exempting all imaging and diagnostic equipment (except PET scans) from the state's CON requirement, along with all mental health, psychiatric and substance abuse services, and allowing for multispecialty ASCs to open under the LNR process.[24] The Georgia House Rural Development Council recommended replacing CON with a "rigorous accreditation and licensing requirement for new providers." New healthcare providers in metro Atlanta would be exempted from the licensure requirement once accredited, and non-metro providers would require a state license if located within a 20-mile radius of an existing provider. The establishment of indigent and charity care requirements for non-profit, for-profit and specialty hospitals was also recommended, based on a rolling average of the state's hospitals.[25]

This led to renewed legislative efforts in 2019, including a bill that would have repealed CON requirements with the exception of long-term care facilities that was voted out of the House Special Committee on Access to Quality Healthcare. A special healthcare license and exemption process for certain facilities and services would have replaced the CON process, and diagnostic imaging would have been exempted from this process entirely. A pared back version of this bill made it to the House floor, but was defeated by a vote of 72-94. A bill ultimately passed that session and was signed into law that increased the threshold amounts for capital expenditures and diagnostic equipment, introduced a limitation on facilities that can oppose a CON application to within a 35-mile radius of the proposed project, established CON requirements for freestanding emergency departments, allowed Cancer Treatment Centers of America to pursue a "general cancer hospital" designation through the CON process and revised the LNR process for the addition of imaging equipment, requiring that the physician be on-site at least 75 percent of the time the equipment is in use. The legislature also passed companion legislation in 2019 to increase hospital disclosures given the increase of nonprofit entities amassing cash and assets in their communities. The law requires hospitals to publicly provide audited financial statements, real estate holdings, ownership in any subsidiaries or captive insurance companies, patient debt collection practices, community benefit reports and salaries of the 10 highest paid administrators.

During the 2022 legislative session, the House Special Committee on Access to Quality Healthcare advanced a bill that would have repealed CON within two years and replaced it with a licensing process with oversight of healthcare facilities' indigent care requirements. It would have also created a path for multispecialty physician-owned surgery centers to open immediately upon signing, along with stricter oversight of hospital authorities. The bill, however, was never brought up for a floor vote in the Georgia House, and subsequent attempts to attach it as an amendment to healthcare

24 - http://www.senate.ga.gov/sro/Documents/StudyCommRpts/2018_CON.pdf
25 - https://www.house.ga.gov/Documents/CommitteeDocuments/2018/HRDC/Final%20Recommendations/FINAL_RDC_Recommendations_2018-2.pdf

legislation in the Senate did not pass out of committee. A bill which would have repealed CON requirements for new hospitals in rural counties also failed to make it out of committee in 2022, and similarly failed as an amendment to Senate legislation.

The Current CON Process

Under current law, the application fee for a CON in Georgia ranges from $1,000 - $50,000. Once the office of Health Planning deems an application complete, the agency must complete its review and issue a decision within 120 days. While most CON applications can be submitted at any time, applications for skilled nursing facilities, intermediate care facilities and home health agencies can only be submitted when the Department of Community Health determines there is an unmet need. This process is known as batching and healthcare providers are dependent upon the state determining there is a need for new facilities before the process to move forward can even begin.[26]

In Georgia, a CON is required if hospitals or destination cancer hospitals wish to increase beds. In the non-hospital setting, a CON is required for increasing beds in skilled nursing facilities, intermediate care facilities, personal care homes, ASC's, obstetrical facilities, freestanding emergency departments, and diagnostic treatment or rehabilitation centers. A CON is also required for the construction, development, expansion, or relocation of hospitals, special care units, skilled nursing facilities, intermediate care facilities, personal care homes, ASC's, obstetrical facilities, freestanding emergency departments, health maintenance organizations, and diagnostic, treatment, or rehabilitation centers. Healthcare services that require a CON include imaging, biliary, lithotripsy, surgery, intensive care, coronary care, pediatrics, gynecology, obstetrics, general, medical care, medical surgical care, and patient, nursing, cardiac catheterization, open heart, surgery, inpatient rehabilitation, alcohol or drug abuse, services, and mental health services.[27]

As of July 1, 2022, CON spending thresholds are in effect for all capital expenditures above $11.5 million (even if no other specific CON applies); single-specialty physician-owned ASCs above $3.7 million and joint venture ASCs above $7.4 million; equipment acquisition, excluding PET services, above $2.9 million; and equipment repair or replacement above $860,000.[28]

Providers who wish to challenge the state's CON decisions, whether in support of or in opposition to the proposed project, have the option to pursue administrative and legal challenges. As our review of Georgia's CON applications from 2017 - 2022 reflects, this has often meant years added to the process for projects to move forward. While the legality of specific CON decisions has been challenged in the judicial system, the constitutionality of CON itself has not been overturned in the state, despite one case making it as far as the Georgia Supreme Court in 2017.

However, in a recent court decision contesting the opening of a Level II NICU at Cartersville Medical Center, Judge Stephen Dilliard of the Georgia Court of Appeals questioned the constitutionality of CON given how it infringes upon the due process and equal protection rights of healthcare providers attempting to enter a market. "I strongly encourage the General Assembly to revisit and carefully reexamine the efficacy and constitutionality of the State Planning and Development Act." Judge Dilliard then closes his legal argument by making an economic observation: "One thing is for certain: Georgians don't benefit from a system that props up health care monopolies."[29]

Georgia CON Applications

For this study, we analyzed each CON application the Department of Community Health (DCH) received from 2017 - 2022.

Applications that were submitted under Governor Kemp's suspension of CON via executive order during the COVID-19 pandemic – which required a different submission process – are addressed in the following section.

During the six-year period that we reviewed, 379 CON applications were filed with the state and cataloged in the department's online repository.[30] As of publication, 43 of the applications were still waiting for the initial decision on their CON by the state.

Our analysis showed the following:

1. When a competitor objects to an application, the odds of denial more than double from 20 percent to about 50 percent.
2. Every additional party opposed to the application increases the odds of denial by about 11 percent.

26 - Institute for Justice, Conning the Competition: A Nationwide Survey of Certificate of Need Laws. August 2020.
27 - Institute for Justice, Conning the Competition: A Nationwide Survey of Certificate of Need Laws. August 2020.
28 - https://dch.georgia.gov/divisionsoffices/office-health-planning/certificate-need-con/con-thresholds
29 - CARTERSVILLE MED. CTR. v. FLOYD HEALTHCARE, 880 S.E.2d 267 (Ga. Ct. App. 2022).
30 - https://dch.georgia.gov/divisionsoffices/office-health-planning/certificate-need-con

3. Any opposition to an application adds 234 days to the wait time for a decision, but competitor opposition adds about 520 days to the wait time.
4. Each additional party opposed to the application adds another 129 days.
5. The cost of the project is not statistically significantly related to either approval or wait times.
6. There don't appear to be any statistically significant trends over time in approval or wait time.

However, even this analysis does not present a comprehensive picture of the barriers to entry inherent within Georgia's CON program. While many proponents of the current system will offer that it is working as intended and that providers should just "file for a CON", this often does not represent a realistic route for most applicants that are not health systems or hospitals. Many smaller physician offices choose to forgo equipment purchases or upgrades out of an acceptance they will not be able to compete with larger competitors willing to spend time and money on exacting regulatory barriers and legal appeals.

In 2020, Georgia was one of 24 states that suspended or reduced their CON laws to expand healthcare services in the midst of the COVID-19 pandemic. Governor Kemp's Executive Order "authorized and directed" the Department of Community Health "to implement the suspension of [certificate of need] where such suspension would permit capable facilities to expand capacity, offer services or make expenditures necessary to assist with the needs of this Public Health State of Emergency."[31] Healthcare providers were still required to submit a CON application despite this suspension. In the first two months, 32 applications under the COVID exemption were submitted to DCH, including hospitals, ambulatory surgery centers, home health and rehab centers.

As nearly every hospital discontinued elective surgeries during those early months, 14 ASCs applied for a special CON exemption that would have allowed them to convert to a multispecialty ASC during the public health emergency. This would have provided physicians with the opportunity to continually serve their patients with non-COVID related issues and offer surgery during the initial peak of the pandemic. Despite the governor's order, DCH did not approve a single application by an ASC. In each denial, the department's pro forma response cited a subsequent executive order calling for healthcare providers to "begin treating patients as soon as practicable." The department also noted that the hospitals in proximity had not requested the ASCs to treat the patients they were unable to serve, despite the fact they had suspended elective surgeries. The delay and judgment applied in processing these applications during a public health emergency does not reflect positively on the ability of regulators to determine a community's need.[32]

CON REGULATIONS AND SAFETY-NET HOSPITALS

In 2007, Mark Botti, Chief of the Litigation I Section of the Antitrust Division with the U.S Department of Justice, testified before a Joint Session featuring members of the Georgia Senate Health and Human Services Committee and the Georgia House Special Committee on CON. Botti testified that his work and that of his colleagues not only reinforced the importance of competition in the healthcare industry, but demonstrated how regulatory barriers to entry harm consumers. The heart of Botti's testimony focused on four critical factors undermining the rationale behind CON laws:

1. The original cost-control reasons for CON no longer apply since the federal government no longer reimburses on a "cost-plus basis" that incentivized capital expenditures by hospitals.
2. Protecting the revenues of incumbent providers does not justify CON laws. CON laws were never intended as a means of cross-subsidizing care for the indigent by protecting profitable service lines from competition, such as surgery and imaging.
3. CON laws facilitate anti-competitive behavior by allowing incumbent providers the opportunity to delay new facilities and service lines into the marketplace by allowing them to utilize the appeals process even when a need has been determined by the state.
4. CON laws lead to less competition and higher prices.

Perhaps the most common argument in defense of CON is the protection of financially struggling hospitals, which are predominantly located in rural areas. Rural hospitals are sustained – outside of government subsidies – by elective surgeries and imaging, the profitable areas of a hospital. As such, the theory is that CON is needed in order to prevent ambulatory surgery centers and standalone imaging centers from cannibalizing the profit centers of rural hospitals, resulting in significant closures and lack of access to rural health care. Fortunately, we can examine how states with similar geographic profiles have fared after repealing or significantly reducing CON laws.

Perhaps the most informative state is Florida, given their significant reduction of CON laws in recent years. In 2019, Florida repealed the CON requirement for hospitals, complex

31 - https://gov.georgia.gov/document/2020-executive-order/03202002/download
32 - https://www.georgiapolicy.org/news/unhealthy-blockage-constricts-certificate-of-need-relief/

medical rehabilitation beds and tertiary hospital services, including neonatal intensive care units and organ transplant centers. The repeal of CON for specialty hospitals (which focus on specific services for defined age ranges) was included in the same legislation, but did not go into effect until 2021. Florida still has CON requirements for nursing homes, skilled nursing facilities, hospice programs and intermediate care facilities.

Utilizing data provided by *Becker's ASC Review* we can examine the location of new ambulatory surgery centers in Florida since the elimination of that CON requirement. From July 2019 - November 2022, 64 new or expanded ASCs were announced in Florida. Of those 64 announced ASCs, 63 are located in counties designated "Urban" by the Florida State Office of Rural Health.[33] Notably, the one ASC development announced in a rural county was a facility proposed by the existing community hospital.[34] A subsequent announcement by a physicians group planning to open a competing ASC led to pronouncements that it would need to be a joint venture, otherwise it would result in the closure of the local hospital completely.[35] Notably absent from the public debate was the potential for increased access and choice for this particular community.

Since Florida's CON repeal in 2019, the Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill reports three rural hospitals have closed in Florida. However, of those three closures, two were converted to freestanding emergency departments, preserving emergency access for those communities.

The chart below compares Georgia to other states with approximate populations and rural proportions[36], along with each state's rural hospital closures since January 2005[37] and an overview of their CON restrictions for hospitals and ambulatory surgery centers. Notably, the two states in the table with the most rural hospital closures, North Carolina and Georgia, ranked second and sixth respectively among the strictest CON regulations in a national study by the Mercatus Center in 2020.[38] To date, no researchers have found any correlation between rural hospital closures and reduced CON regulation. In fact, as the academic literature further details below, researchers find that, controlling for other possibly-confounding factors, there are 30 percent fewer rural hospitals in states with CON restrictions relative to non-CON states, and there are 13 percent fewer rural ASCs in CON states relative to non-CON states.[39]

U.S. POPULATION RANK	STATE	POPULATION	RURAL POPULATION	% RURAL	RURAL HOSPITAL CLOSURES SINCE JAN. 2005	CON FOR HOSPITALS & ASCS
5	Pennsylvania	12,794,885	1,453,006	11.36%	5	No
6	Illinois	12,716,164	1,434,356	11.28%	4	Yes
7	Ohio	11,675,275	2,310,238	19.79%	2	No
8	Georgia	10,516,579	1,796,897	17.09%	9	Yes
9	North Carolina	10,386,227	1,984,979	19.11%	11	Yes
10	Michigan	9,973,907	1,800,241	18.05%	2	Yes

33 - See Appendix.
34 - https://www.wjhg.com/2021/09/28/jackson-hospital-renovate-old-golson-elementary-school/
35 - https://www.beckersasc.com/asc-news/proposed-florida-asc-would-cause-local-hospital-to-die-in-5-years-officials-say.html
36 - State population data from the Rural Health Information Hub (https://www.ruralhealthinfo.org), which is sourced from the U.S. Census ACS 2020 estimate.
37 - https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/
38 - https://www.mercatus.org/media/72541/download
39 - Stratmann and Koopman, "Entry Regulation and Rural Health Care."

SUMMARY OF THE ACADEMIC RESEARCH ON CON

As discussed above, the original rationales for CON in the NHPRDA were to contain cost or spending, to ensure adequate and equitable access to care, to improve the quality of care and to ensure care for underserved populations. These remain the most commonly-stated goals for healthcare regulation and most of the research revolves around them. We therefore summarize the research in terms of these questions.

1. Spending

Let's begin with spending. To date, we have reviewed 42 peer-reviewed papers assessing the effect of CON on spending and these papers contain a total of 77 separate tests. There are three different ways that the literature has tackled the issue of CON and spending: spending per service ($/Q), spending per capita ($/capita) and efficiency (output/input). We will discuss each in turn.

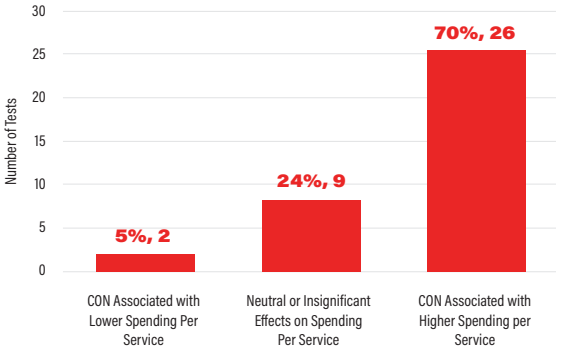
a) Spending Per Service ($/Q)

In our judgment, spending per service ($/Q) is the most intuitive way to think about spending. In these tests, researchers assess the effect of CON on charges, reimbursements, prices or per-unit costs. The key is that these tests are looking at spending *per service rendered*. This is an intuitive way to think about spending because it is analogous to a market price, which is always expressed in per-unit or per-service terms (think of the price of a gallon of gas or of one dental cleaning). Putting spending in per-unit terms is helpful because we typically want to know how much we spend *relative to some service rendere*d (think of the cost of a well-child checkup or of a knee replacement).

Standard economic theory offers two reasons to suppose that CON regulation might increase spending per service and no reasons to suppose that it will decrease it. First, CON is a supply restriction. As economists Jon Ford and David Kasserman explained nearly three decades ago, "the economic effect [of a CON] is to shift the supply curve of the affected service back to the left," and "the effect of such supply shifts is to raise… [the] equilibrium price."[40] Second, because of its anti-competitive properties, CON seems likely to lead to local monopoly pricing.

The empirical literature on CON and spending per service, summarized in Figure 1, supports the standard economic theory. Among 37 tests assessing the effect of CON on spending per service, 26 find that CON is associated with more spending per service, nine find insignificant or negligible effects and just two find CON is associated with lower spending per service. For every one test that finds CON is associated with lower spending per service, there are more than 10 that find it is associated with higher spending per service.

Figure 1. Tests Assessing the Effect of CON on Spending Per Service ($/Q)



In one study, researchers found that reimbursements for coronary artery bypass grafts fell by about 9 percent in Pennsylvania and by about 3 percent in Ohio following CON repeal.[41] A different study found hospital charges in non-CON states were 5.5 percent lower five years after repeal,[42] and another found CON is associated with higher prices across 11 different procedures.[43] Medicare reimbursements for total knee arthroplasty are 5 to 10 percent lower in non-CON states than in CON states,[44] and spinal surgery reimbursements fall faster in non-CON states than in CON states (about 11 percent per year).[45]

Among the two tests that found CON was associated with lower spending per service, one did not control for any possibly confounding factors[46] and the other reported mixed results, finding CON to be associated with higher reimbursements for cervical discectomy in the inpatient setting but lower reimbursements in the outpatient setting.[47]

In summary, both standard economic theory and the balance of available empirical evidence suggest that CON laws, by restricting supply, tend to raise the cost per service rendered.

b) Spending Per Capita ($/Capita)

Another way to think about spending is in per capita terms ($/capita). These studies assess the effect of CON on spending per patient or per person. The problem with this measure is that, unlike spending per service, it is not obvious that less spending per capita is a good thing. After all, an extremely stringent CON that ensured that there were no healthcare resources at all would result in $0 spending capita. But given that we tend to think of healthcare as a "good" and not a "bad" this would not improve wellbeing.[48]

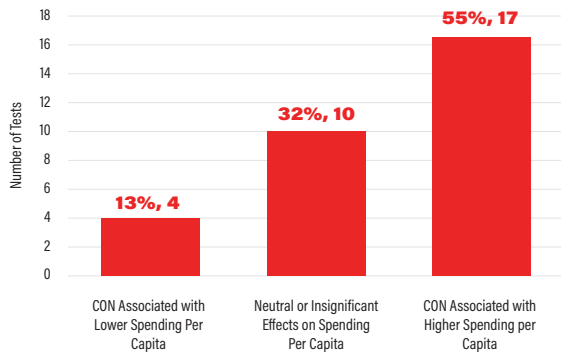
Theoretically, CON might increase or decrease spending per capita because it has two offsetting effects on a market. On one hand, it tends to increase spending

40 - 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, 783-4.
41 - Ho, Vivian and Meei-Hsiang Ku-Goto, "State Deregulation and Medicare Costs for Acute Cardiac Care," Medical Care Research and Review 70, no. 2 (April 2013): 185–205.
42 - Bailey, James, "Can Health Spending Be Reined In through Supply Constraints? An Evaluation of Certificate-of-Need Laws," Mercatus Working Paper (Arlington, VA: Mercatus Center at George Mason University, August 1, 2016).
43 - Noether, Monica, "Competition Among Hospitals," Journal of Health Economics 7, no. 3 (September 1988): 259–84.
44 - Browne, James A., et al., "Certificate-of-Need State Laws and Total Knee Arthroplasty," The Journal of Arthroplasty 33, no. 7 (July 1, 2018): 2020–24.
45 - Ziino, Chason, Abiram Bala, and Ivan Cheng, "Does ACDF Utilization and Reimbursement Change Based on Certificate of Need Status?," Clinical Spine Surgery 33, no. 3 (April 2020): E92
46 - This is quite unusual. To our knowledge, this is the only study in the entire sample that included a test without any controls. The relevant paper is Cancienne, Jourdan M. et al., "Certificate-of-Need Programs Are Associated with a Reduced Incidence, Expenditure, and Rate of Complications with Respect to Knee Arthroscopy in the Medicare Population," HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery 16, no. Suppl 2 (December 2020): 264–71.
47 - Ziino, Chason, Abiram Bala, and Ivan Cheng, "Utilization and Reimbursement Trends Based on Certificate of Need in Single-Level Cervical Discectomy," The Journal of the American Academy of Orthopaedic Surgeons 29, no. 10 (May 15, 2021): e518–22.
48 - In economics, a "good" is any product or service that generates utility for the consumer. By contrast, a "bad" generates disutility. Trash, wastewater, and air pollution are all considered bads. Is healthcare a bad? We think not.

per service rendered (see the previous section), and on the other, it tends to decrease the amount of services rendered (which we will discuss in the next section). Total spending per person might therefore increase or decrease, depending on which effect dominates. Given that consumers of healthcare are relatively price-insensitive, however, the most likely effect of CON is to increase spending per capita.[49]

Once again, the empirical evidence supports standard economic theory. We have evaluated 19 papers which together contain 31 separate tests of the effect of CON on spending per capita. This literature is summarized in Figure 2. Among these 31 tests, 17 find that CON is associated with more spending per capita, 10 find insignificant or negligible results, and four tests find that CON is associated with less spending per capita. For every one test finding CON is associated with lower spending per capita, there are more than four that find it is associated with higher spending per capita.

Figure 2. Tests Assessing the Effect of CON on Spending Per Capita ($/Capita)



In one study, researchers found that CON was associated with 20.6 percent higher hospital expenditures per capita.[50] Others found hospital expenditures per admission are higher in CON than in non-CON states.[51] And states that eliminate CON experience 5 percent reductions in real per capita healthcare spending.[52]

State policymakers often worry that eliminating CON will cause Medicaid expenditures to skyrocket. If anything, it appears that CON causes states to spend more, not less, on Medicaid. One study, for example, found that CON is associated with higher per capita Medicaid community-based care expenditures.[53] Another study found mixed results, but to our knowledge, no one has found clear evidence that CON increases Medicaid per capita spending.[54]

In summary, while CON might reduce spending per person by rationing care, standard economic theory predicts that it is more likely to increase spending per person through its effect on spending per service. The balance of evidence supports this hypothesis.

c) Output Per Input (Output/Input)

The final way that researchers have assessed the effect of CON on spending is by examining output per input. These studies look at whether inputs such as labor

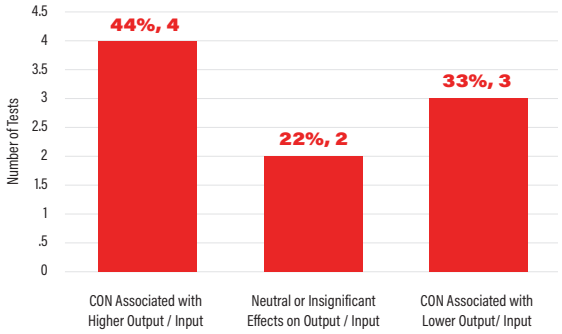
or capital are more intensely used in CON than in non-CON states. Like spending per capita, this measure is not an especially helpful gauge of human wellbeing, but it does give us a sense of how CON affects technical efficiency.

In contrast with the other two measures of spending, economic theory offers no clear predictions about how CON might affect output per input. On the one hand, it might increase output per input if it results in more services rendered by fewer providers. Since this will cause a more intense use of labor and capital by these providers, it will tend to increase output per input. On the other hand, CON might decrease output per input if the anticompetitive effects of the regulation make providers less attentive to efficiency.[55]

In all, eight studies have assessed the effects of CON on output per input and together these studies contain nine tests. Figure 3 summarizes the results. Four tests find that CON increases output per input, two find insignificant or negligible results, and three find that CON reduces output per input.

To give the reader a better sense of these results, let us consider one study that found CON to be associated with higher output

Figure 3. Tests Assessing the Effect of CON on Output / Input



per input, which was co-authored by one of the authors of the present study.[56] In this paper, Mitchell and Stratmann found that states that require a CON for hospital beds had 12 percent higher bed-utilization rates during the COVID-19 pandemic. One might interpret this as a "good" result since it means that each bed is able to serve more patients, yielding higher output per input. Unfortunately, the authors also found that hospitals in these states were 27 percent more likely to run out of beds during the pandemic. This underscores the fact that output per input is not an especially relevant measure of patient wellbeing. Given its frequent use as a metric, we thought it only fair to include the result here.

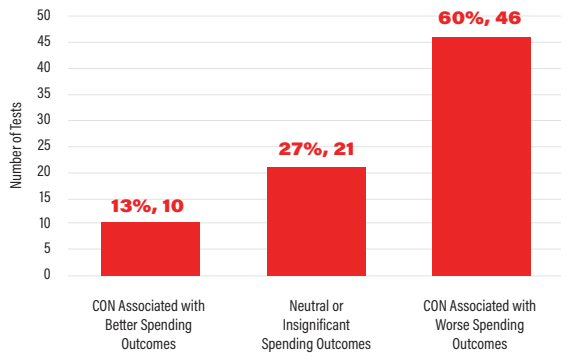
49 - If consumers are price sensitive (i.e., healthcare is elastically demanded), we would expect the quantity-reducing effect of CON to dominate the spending-per service effect and the regulation will tend to reduce spending per capita. But if they are price insensitive (i.e., healthcare is inelastically-demanded) then the spending-per-service effect will dominate the quantity-reducing effect and we would expect CON to increase spending per capita. Because of the nature of the good and because of third party payment, healthcare is generally thought to be inelastically demanded. Thus, theory suggests that CON will likely increase spending per capita. For more on this issue, see Ford, Jon M. and David L. Kaserman, "Certificate-of-Need Regulation and Entry: Evidence from the Dialysis Industry," Southern Economic Journal 59, no. 4 (1993): 783–91, 783-4; Mitchell, Matthew. 2016. "Do Certificate-of-Need Laws Limit Spending?" Working paper, Mercatus Center at George Mason University, September 29; Bailey, James "Does "Excess Supply" Drive Excessive Health Spending? The Case of Certificate-of-Need Laws," Journal of Private Enterprise 33, no. 4 (2018): 91-109; and Bailey, James and Tom Hamami, "Competition and Health-Care Spending: Theory and Application to Certificate of Need Laws," Contemporary Economic Policy 41 no. 1: January 2023, 128-145
50 - Lanning, Joyce A., Michael A. Morrisey, and Robert L. Ohsfeldt, "Endogenous Hospital Regulation and Its Effects on Hospital and Non-Hospital Expenditures," Journal of Regulatory Economics 3, no. 2 (June 1991): 137–54.
51 - Rivers, Patrick A., Myron D. Fottler, and Mustafa Zeedan Younis, "Does Certificate of Need Really Contain Hospital Costs in the United States?," Health Education Journal 66, no. 3 (September 1, 2007): 229–44; Rivers, Patrick A., Myron D. Fottler, and Jemima A. Frimpong, "The Effects of Certificate of Need Regulation on Hospital Costs," Journal of Health Care Finance 36, no. 4 (2010): 1–16; Antel, John J., Robert L. Ohsfeldt, and Edmund R. Becker, "State Regulation and Hospital Costs," The Review of Economics and Statistics 77, no. 3 (1995): 416–22.
52 - Bailey, James "Can Health Spending Be Reined in through Supply Restraints? An Evaluation of Certificate-of-Need Laws," Journal of Public Health 27, no. 6 (December 1, 2019): 755–60.
53 - Miller, Nancy A., Charlene Harrington, and Elizabeth Goldstein, "Access to Community-Based Long-Term Care: Medicaid's Role," Journal of Aging and Health 14, no. 1 (February 2002): 138–59.
54 - Rahman et al, found CON was associated with faster growth in Medicaid spending on nursing home care, but slower growth in Medicaid spending on home health care. Rahman, Momotazur et al., "The Impact of Certificate-of-Need Laws on Nursing Home and Home Health Care Expenditures," Medical Care Research and Review: MCRR 73, no. 1 (February 2016): 85–105.
55 - This phenomenon is known as "X-inefficiency." Leibenstein, Harvey, "Allocative Efficiency vs. 'X-Efficiency,'" American Economic Review 56, no. 3 (June 1966): 392–415.
56 - Mitchell, Matthew and Thomas Stratmann, "The Economics of a Bed Shortage: Certificate-of-Need Regulation and Hospital Bed Utilization during the COVID-19 Pandemic," Journal of Risk and Financial Management 15, no. 1 (January 2022): 1-18.

d) Summarizing the Spending and CON Literature

In all, 42 papers with 77 empirical tests assess the effect of CON on spending, either by looking at spending per service, spending per capita or output per input. Figure 4 summarizes this literature. In total, 46 tests find that CON is associated with "bad" spending outcomes, 21 tests find negligible or inconclusive results and 10 tests find CON is associated with "good" spending outcomes.

Thus, for every one test that finds CON is associated with a "good" spending outcome, there are more than four that find it is associated with a "bad" spending outcome. Once again, we emphasize that the spending tests that are most relevant for human wellbeing–those that assess the effect of CON on spending per service–are especially lopsided with more than ten "bad" results for every one "good" result.

Figure 4. Tests Assessing the Effect of CON on Spending



2. Access

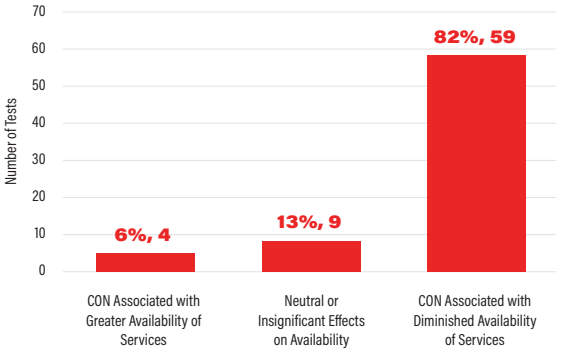
With 58 papers and 132 separate tests, access is the most-studied aspect of CON laws. Broadly speaking, the literature has assessed the effects of CON on patient access to healthcare in two ways. Some tests look to see if CON regulation has any relationship with the availability of services while others see if it has any relationship to the utilization of these services. We take each in turn.

a) Availability of Care

By design, CON regulations limit the supply of technology and investment. It seems intuitive, then, that they are likely to reduce the availability of services. And that is what the bulk of the literature finds. In total, 35 papers containing 72 tests have assessed the effects of CON on the availability of services. These tests measure availability in different ways. One technique is to count the number of service providers per capita. Another is to count units of medical technology per capita. Some papers measure how far patients must travel to obtain care or how long patients must wait until they can be served.

Figure 5 summarizes this literature. Of the 72 tests assessing the effect of CON on the availability of services, 59 tests find that CON is associated with diminished availability, nine find negligible or insignificant results, and four find that CON is associated with greater access to certain services.

Figure 5. Tests Assessing the Effect of CON on Availability of Services



Controlling for other possibly-confounding factors, researchers find that the average patient in a CON state has access to:

- 30 to 48 percent fewer hospitals;[57]
- 14 percent fewer ambulatory surgery centers (ASCs);[58]
- 30 percent fewer rural hospitals;[59]
- 13 percent fewer rural ASCs;[60]
- 25 percent fewer open-heart surgery programs;[61]
- 46 percent fewer facilities offering coronary artery bypass graft (CABG);[62]
- 20 percent fewer psychiatric care facilities;[63]
- 50 percent fewer home health agencies; [64]
- fewer hospitals offering revascularization;[65]
- fewer dialysis clinics;[66]
- fewer hospitals per cancer incident;[67]
- fewer neonatal intensive care units (NICU);[68] and
- fewer alcohol and drug abuse facilities.[69]

Patients in CON states have access to fewer medical imaging devices[70] and fewer hospital beds.[71] They face longer wait times,[72] must typically travel farther to obtain care[73] and are more likely to leave their states for care.[74] As mentioned in the previous section, hospitals in states with bed CONs were 27 percent more likely to run out of beds during COVID.[75]

Among the four positive results, one was interpreted by its author as a negative result. In one of the earliest CON studies, Fred Hellinger found that hospitals anticipated the introduction of CON and undertook investments before it went

57 - Stratmann and Koopman estimate 30 percent fewer while Eichmann and Santerre estimate 48 percent fewer. Stratmann, Thomas and Christopher Koopman, "Entry Regulation and Rural Health Care: Certificate-of-Need Laws, Ambulatory Surgical Centers, and Community," Working Paper (Arlington, VA: Mercatus Center at George Mason University, February 18, 2016); Eichmann, Traci L, and Rexford E Santerre, "Do Hospital Chief Executive Officers Extract Rents from Certificate of Need Laws," Journal of Health Care Finance 37, no. 4 (January 1, 2011): 1–14.
58 - Stratmann and Koopman, "Entry Regulation and Rural Health Care."
59 - Stratmann and Koopman, "Entry Regulation and Rural Health Care."
60 - Stratmann and Koopman, "Entry Regulation and Rural Health Care."
61 - Robinson, J. L. et al., "Certificate of Need and the Quality of Cardiac Surgery," American Journal of Medical Quality: The Official Journal of the American College of Medical Quality 16, no. 5 (October 2001): 155–60.
62 - Kolstad, Jonathan T., "Essays on Information, Competition and Quality in Health Care Provider Markets" (Ph.D. Dissertation, Boston, MA, Harvard University, 2009).
63 - Bailey, James and Eleanor Lewin, "Certificate of Need and Inpatient Psychiatric Services," The Journal of Mental Health Policy and Economics 24, no. 4 (December 1, 2021): 117–24.
64 - Ettner, Susan L. et al., "Certificate of Need and the Cost of Competition in Home Healthcare Markets," Home Health Care Services Quarterly 39, no. 2 (June 2020): 51–64; Polsky, Daniel et al., "The Effect of Entry Regulation in the Health Care Sector: The Case of Home Health," Journal of Public Economics 110 (February 2014): 1–14.
65 - Popescu, Iona, Mary S. Vaughan-Sarrazin, and Gary E. Rosenthal, "Certificate of Need Regulations and Use of Coronary Revascularization After Acute Myocardial Infarction," The Journal of the American Medical Association 295, no. 18 (May 10, 2006): 2141–47.
66 - Ford, Jon M. and David L. Kaserman, "Certificate-of-Need Regulation and Entry: Evidence from the Dialysis Industry," Southern Economic Journal 59, no. 4 (1993): 783–91.
67 - Short, Marah N., Thomas A. Aloia, and Vivian Ho, "Certificate of Need Regulations and the Availability and Use of Cancer Resections," Annals of Surgical Oncology 15, no. 7 (July 2008): 1837–45.
68 - Lorch, S. A., P. Maheshwari, and O. Even-Shoshan, "The Impact of Certificate of Need Programs on Neonatal Intensive Care Units," Journal of Perinatology: Official Journal of the California Perinatal Association 32, no. 1 (January 2012): 39–44.
69 - Bailey, James B., Thanh Lu, and Patrick Vogt, "Certificate of Need and Substance Use Treatment," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, December 29, 2020
70 - Stratmann, Thomas, and Jacob Russ, "Do Certificate-of-Need Laws Increase Indigent Care?," Working Paper (Arlington, VA: Mercatus Center at George Mason University, July 2014).
71 - Harrington, Charlene et al., "The Effect of Certificate of Need and Moratoria Policy on Change in Nursing Home Beds in the United States," Medical Care 35, no. 6 (1997): 574–88; Hellinger, Fred J., "The Effect of Certificate-of-Need Laws on Hospital Beds and Healthcare Expenditures: An Empirical Analysis," The American Journal of Managed Care 15, no. 10 (October 2009): 737–44; Eichmann, Traci L, and Rexford E Santerre, "Do Hospital Chief Executive Officers Extract Rents from Certificate of Need Laws," Journal of Health Care Finance 37, no. 4 (January 1, 2011): 1–14; Stratmann, Thomas, and Jacob Russ, "Do Certificate-of-Need Laws Increase Indigent Care?," Working Paper (Arlington, VA: Mercatus Center at George Mason University, July 2014).
72 - Myers, Molly S. and Kathleen M. Sheehan, "The Impact of Certificate of Need Laws on Emergency Department Wait Times," Journal of Private Enterprise 35, no. 1 (Spring 2020): 59–75.
73 - Carlson, Melissa D.A., et al., "Geographic Access to Hospice in the United States," Journal of Palliative Medicine 13, no. 11 (November 2010): 1331–38.
74 - Baker, Matthew C., and Thomas Stratmann, "Barriers to Entry in the Healthcare Markets: Winners and Losers from Certificate-of-Need Laws," Socio-Economic Planning Sciences, 2021.
75 - Mitchell, Matthew and Thomas Stratmann, "The Economics of a Bed Shortage: Certificate-of-Need Regulation and Hospital Bed Utilization during the COVID-19 Pandemic," Journal of Risk and Financial Management 15, no. 1 (January 2022): 1-18.

into effect. Thus, in his interpretation, it backfired because it encouraged the supply of capital that it was supposed to discourage.[76] The other tests that found a positive association between CON and availability of services also found negative associations in other circumstances. One study found that in states that had expanded Medicaid, CON laws were associated with more non-profit substance abuse facilities, while in non-expansion states CON laws were associated with fewer non-profit substance abuse facilities.[77] Another study found that CON was associated with shorter travel to radiation oncology in some parts of the country but prolonged travel to radiation oncology in other parts.[78]

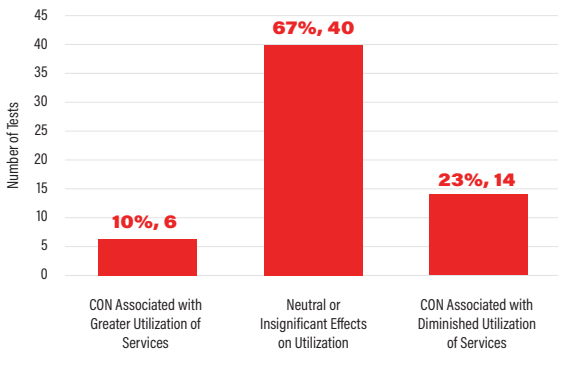
In summary, one of the most common ways to evaluate CON is to compare its status to the availability of services. That is, does it live up to its promise to ensure an adequate supply of healthcare services? Not only is this one of the most-studied aspects of CON but it is also an area with some of the most lopsided results. CON was associated with diminished availability of services in 82 percent of all tests. For every test that finds CON associated with greater availability, there are nearly 15 that find it to be associated with less availability.

b) Utilization of Service

Though there is abundant evidence that CON makes it more difficult to obtain care, this doesn't necessarily mean that it will lead to diminished utilization of services. Most healthcare services are inelastically demanded, meaning patients will still seek care even if it is difficult or inconvenient to obtain. Moreover, CON laws might actually increase the utilization of certain services by suppressing the utilization of substitute services. For example, if two procedures can be used to treat an ailment and if CON applies to procedure A but not to procedure B, or if CON is more stringently applied to A than B, then we can expect CON to suppress the utilization of A while possibly enhancing the utilization of B.[79]

Twenty-three papers, which together include 60 tests, assess the effect of CON on utilization of healthcare services. Of these 60 tests, 40 find no significant relationship between CON and utilization of services, 14 find CON is associated with less utilization of services, and six find that CON is associated with greater utilization of services.

Figure 6. Tests Assessing the Effect of CON Utilization of Services



Among the tests finding CON to be associated with diminished utilization, one study found that CON states have 13.7 percent fewer home health admissions from hospitals than non-CON states.[80] Another found that in CON states, hospitals were 5.35 percent less likely to accept psychiatric patients on Medicare and that there were about 56 percent fewer psychiatric clients per capita.[81] In CON states, patients are less likely to obtain medical imaging,[82] total hip arthroplasty,[83] total knee arthroplasty,[84] cardiac revascularization[85] and percutaneous coronary interventions.[86] Patients are also more likely to be turned away from hospitals.[87]

Among the tests finding CON to be associated with increased utilization, one study found that CON is associated with greater growth in intensity modulated radiation therapy, an expensive and no-more effective treatment than alternatives, so the authors interpreted this as a negative result.[88] Similarly, another study found that CON made radiation therapy more likely to be used on elderly patients who didn't need it.[89] This was also interpreted as a negative result, though for consistency we coded it as increasing utilization. Another study found that following the removal of CON, there was a substitution from coronary artery bypass grafts (CABG) to an alternative treatment: percutaneous coronary interventions (PCI).[90]

In summary, the bulk of evidence suggests that CON does not have a significant effect on utilization of services, though among the tests that do find an effect, more than twice as many find a negative effect on utilization as find a positive effect. Finally, among those tests that do find a positive effect, CON seems to encourage some, sometimes inferior, procedures over alternative procedures.

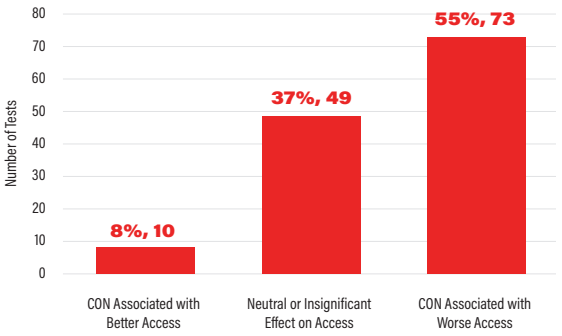
c) Summarizing the CON and Access Literature

Figure 7 combines the data from Figures 5 and 6 to summarize the access literature. Among 132 tests in 58 papers, 73 find CON is associated with diminished access to care,

77 - Noh, Shihyun and Catherine H. Brown, "Factors Associated with the Number of Substance Abuse Nonprofits in the U.S. States: Focusing on Medicaid Expansion, Certificate of Need, and Ownership," Nonprofit Policy Forum 9, no. 2 (July 1, 2018), https://doi.org/10.1515/npf-2017-0010.
78 - Herb, Joshua N. et al., "Travel Time to Radiation Oncology Facilities in the United States and the Influence of Certificate of Need Policies," International Journal of Radiation Oncology, Biology, Physics 109, no. 2 (February 1, 2021): 344–51.
79 - In this famous paper on the economics of regulation, the Nobel Laureate George Stigler pointed out that businesses have an incentive to seek, or demand, regulations that suppress substitutes for their product or service, thus enhancing their own business. And in an important extension of the literature, Steven Salop and David Scheffman pointed out that firms may even lobby for regulations that raise their own costs so long as they raise the costs of their rivals' more. Stigler, George, "The Theory of Economic Regulation," Bell Journal of Economics and Management Science 2, (1971): 3–21; Salop, Steven C., and David T. Scheffman. 1983. "Raising Rivals' Costs." The American Economic Review 73 (2): 267–71
80 - Polsky, Daniel et al., "The Effect of Entry Regulation in the Health Care Sector: The Case of Home Health," Journal of Public Economics 110 (February 2014): 1–14.
81 - Bailey, James and Eleanor Lewin, "Certificate of Need and Inpatient Psychiatric Services," The Journal of Mental Health Policy and Economics 24, no. 4 (December 1, 2021): 117–24.
82 - Baker, Matthew C., and Thomas Stratmann, "Barriers to Entry in the Healthcare Markets: Winners and Losers from Certificate-of-Need Laws," Socio-Economic Planning Sciences, 2021, https://doi.org/10.1016/j.seps.2020.101007.
83 - Casp, Aaron J. et al., "Certificate-of-Need State Laws and Total Hip Arthroplasty," The Journal of Arthroplasty 34, no. 3 (March 2019): 401–7.
84 - Cancienne, Jourdan M. et al., "Certificate-of-Need Programs Are Associated with a Reduced Incidence, Expenditure, and Rate of Complications with Respect to Knee Arthroscopy in the Medicare Population," HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery 16, no. Suppl 2 (December 2020): 264–71, https://doi.org/10.1007/s11420-019-09693-z.
85 - Li, Suhui, and Avi Dor. "How Do Hospitals Respond to Market Entry? Evidence from a Deregulated Market for Cardiac Revascularization." Health Economics 24, no. 8 (August 2015): 990–1008. https://doi.org/10.1002/hec.3079; Popescu, Iona, Mary S. Vaughan-Sarrazin, and Gary E. Rosenthal, "Certificate of Need Regulations and Use of Coronary Revascularization After Acute Myocardial Infarction," The Journal of the American Medical Association 295, no. 18 (May 10, 2006): 2141–47.
86 - Ho, Vivian et al., "Cardiac Certificate of Need Regulations and the Availability and Use of Revascularization Services," American Heart Journal 154, no. 4 (October 2007): 767–75.
87 - Joskow, Paul L., "The Effects of Competition and Regulation on Hospital Bed Supply and the Reservation Quality of the Hospital," The Bell Journal of Economics 11, no. 2 (1980): 421–47; Mitchell, Matthew and Thomas Stratmann, "The Economics of a Bed Shortage: Certificate-of-Need Regulation and Hospital Bed Utilization during the COVID-19 Pandemic," Journal of Risk and Financial Management 15, no. 1 (January 2022): 1-18.
88 - Khanna, Abhinav et al., "Certificate of Need Programs, Intensity Modulated Radiation Therapy Use and the Cost of Prostate Cancer Care," The Journal of Urology 189, no. 1 (January 2013): 75–79.
89 - Falchook, Aaron D. and Ronald C. Chen, "Association Between Certificate of Need Legislation and Radiation Therapy Use Among Elderly Patients With Early Cancers," International Journal of Radiation Oncology, Biology, Physics 91, no. 2 (February 1, 2015): 448–50, https://doi.org/10.1016/j.ijrobp.2014.10.033.
90 - Li, Suhui, and Avi Dor. "How Do Hospitals Respond to Market Entry? Evidence from a Deregulated Market for Cardiac Revascularization." Health Economics 24, no. 8 (August 2015): 990–1008. https://doi.org/10.1002/hec.3079.

49 find negligible results, and 10 find CON to be associated with increased access. For every test that finds CON is associated with increased access, more than seven find it is associated with diminished access.

Figure 7. Tests Assessing the Effect of CON on Access



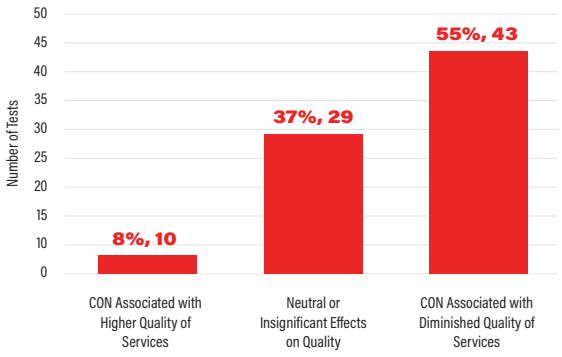
3. Quality

As we have discussed, needs-assessment does not typically involve quality assessment. Nevertheless, the authors of the NHPRDA hoped that CON would "achieve needed improvements in the quality of health services," and this continues to be a common rationale for the regulation.[91] Assessing quality does not simply account for the outcome of the medical procedure on the direct patient area, but also mortality rates for hospital-acquired pneumonia and patient deaths from serious complications after surgery.

In theory, CON might either enhance or undermine quality. On the one hand, the regulation might enhance quality if it permits greater proficiency through volume. By reducing the number of providers, CON is likely to cause each provider to perform more procedures. And if providers improve these procedures the more they practice and provide them, CON might lead to better outcomes for those who receive care (and, of course, worse outcomes for those whose care is rationed, but this is likely to go unmeasured).[92] On the other hand, competition tends to enhance quality so CON might undermine quality by undermining competition.

We identify 31 papers that together contain 78 tests assessing the relationship between CON and quality of care. Among these, 43 find that CON is associated with lower-quality care, 29 find negligible or insignificant results, and six find CON is associated with higher quality.

Figure 8. Tests Assessing the Effect of CON on Quality of Care



Among the papers that associate CON with lower quality, researchers find that, other factors being equal, CON states have:

- higher mortality rates among surgical inpatients with serious treatable complications;[93]
- higher mortality rates for heart attack, heart failure, and pneumonia;[94]
- higher mortality from natural death, septicemia, diabetes, chronic lower respiratory disease, influence or pneumonia, Alzheimer's and COVID during the pandemic;[95]
- higher readmission rates following heart attack, heart failure, and pneumonia;[96]
- lower levels of functional improvement among home health patients for bathing, ambulating, transferring to beds, managing oral medication and managing pain;[97]
- higher ER and acute care admissions among home health patients;[98]
- more ER visits within 30 days and more infections within six months of knee arthroscopy;[99]
- more surgeries performed by lower-quality surgeons;[100]
- lower RN staff ratios and greater use of physical force in nursing homes;[101]
- fewer patients giving their hospitals a 9 or 10 on a 10-point scale;[102] and
- lower home health agency ratings.[103]

In non-CON states, there are an estimated 5.7 percent fewer deaths from post-surgical complications due to the mortality rates highlighted above; in a state like Georgia that averages roughly 300,000 inpatient surgeries, this represents over 17,000 lives.

Among the papers that associate CON with higher quality, one paper found CON was associated with better quality on two measures of home healthcare but worse quality on six other measures.[104] Another found that CON was associated with better outcomes for postoperative pulmonary embolism but worse outcomes among eight other dimensions of quality.[105] One study found that CON was associated with lower NICU mortality in states with large metropolitan areas,[106] and another study

91 - National Health Planning and Resources Development Act of 1974, 4
92 - Economists call it a "Cadillac effect" when a regulation causes some to go without a product or service while ensuring that those who do obtain it tend to receive higher quality.
93 - Stratmann, Thomas, "The Effects of Certificate-of-Need Laws on the Quality of Hospital Medical Services," Journal of Risk and Financial Management 15 (6): 2022.
94 - Stratmann, Thomas, "The Effects of Certificate-of-Need Laws on the Quality of Hospital Medical Services," and Chiu, Kevin, "The Impact of Certificate of Need Laws on Heart Attack Mortality: Evidence from County Borders," Journal of Health Economics, 2021, https://doi.org/10.2139/ssrn.3678714.
95 - Choudhury, Agnitra Roy, Sriparna Ghosh, and Alicia Plemmons, "Certificate of Need Laws and Health Care Use during the COVID-19 Pandemic," Journal of Risk and Financial Management 15, no. 2 (2022)
96 - Stratmann, Thomas, "The Effects of Certificate-of-Need Laws on the Quality of Hospital Medical Services."
97 - Wu, Bingxiao et al., "Entry Regulation and the Effect of Public Reporting: Evidence from Home Health Compare," Health Economics 28, no. 4 (April 2019): 492–516.
98 - Wu, Bingxiao et al., "Entry Regulation and the Effect of Public Reporting."
99 - Cancienne, Jourdan M. et al., "Certificate-of-Need Programs Are Associated with a Reduced Incidence, Expenditure, and Rate of Complications with Respect to Knee Arthroscopy in the Medicare Population," HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery 16, no. Suppl 2 (December 2020): 264–71, https://doi.org/10.1007/s11420-019-09693-z.
100 - Cutler, David M., 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 (February 2010): 51–76, and Kolstad, Jonathan T., "Essays on Information, Competition and Quality in Health Care Provider Markets" (Ph.D. Dissertation, Boston, MA, Harvard University, 2009), https://healthpolicy.fas.harvard.edu/people/jonathan-kolstad.
101 - Zinn, J. S., "Market Competition and the Quality of Nursing Home Care," Journal of Health Politics, Policy and Law 19, no. 3 (1994): 555–82.
102 - Stratmann, Thomas, "The Effects of Certificate-of-Need Laws on the Quality of Hospital Medical Services."
103 - Ohsfeldt, Robert L. and Pengxiang Li, "State Entry Regulation and Home Health Agency Quality Ratings," Journal of Regulatory Economics 53, no. 1 (2018): 1–19.
104 - This particular study was commissioned by the state of Georgia. Custer, William S. et al., "Report of Data Analyses to the Georgia Commission on the Efficacy of the CON Program," Aysps.Gsu.Edu, November 2006.
105 - Stratmann, Thomas, "The Effects of Certificate-of-Need Laws on the Quality of Hospital Medical Services.
106 - Lorch, S. A., P. Maheshwari, and O. Even-Shoshan, "The Impact of Certificate of Need Programs on Neonatal Intensive Care Units," Journal of Perinatology: Official Journal of the California Perinatal Association 32, no. 1 (January 2012): 39–44.

found mortality was higher following CABG in non-CON states, though subsequent analyses found CABG mortality declined following CON repeal.[107]

In summary, the balance of evidence suggests that CON does not enhance quality. For every test that associates CON with higher quality there are more than seven that associate the regulation with lower quality outcomes.

4. Underserved Populations

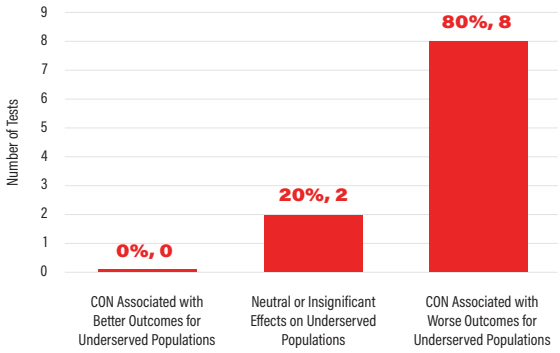
The final aim of the NHPRDA was to ensure care for "underserved populations" including those "located in rural or economically depressed areas."[108] It isn't entirely clear how the authors of the legislation envisioned this happening. Supply restrictions tend to restrict supply, especially to communities for whom care is marginally profitable.

It is possible that they hoped regulators would be more restrictive in evaluating projects for well-served communities and that this might then cause providers to shift more resources to underserved communities.[109] More recently, in public testimonies, hospital associations have offered another theory.[110] By increasing the profitability of safety net hospitals, they contend, CON laws might permit these hospitals to cross-subsidize more care to underserved populations.[111]

We have identified nine papers which together contain 10 tests that assess the effect of CON on underserved populations.

These papers often look at access to care but some also look at the financing of care for underserved populations (due to overlap, some but not all of these tests are included in the earlier figures). Figure 9 summarizes this portion of the literature. Among these 10 tests, eight find that CON is associated with diminished care for underserved populations, two find neutral or insignificant effects, and no tests associate CON with better or more care for underserved populations.

Figure 9. Tests Assessing the Effect of CON on Underserved Populations



Among the two negligible results, one found that, by itself, CON had no statistically significant relationship to uninsured admissions, and the other found that CON had no statistically significant relationship to uncompensated care.[112] The first of these tests, however, found that uninsured admissions were lower in CON states that also had uncompensated care pools and community benefit requirement laws.[113]

One study found substance abuse centers less likely to accept Medicaid patients in CON states.[114] Another (commissioned by the state of Georgia) found that the uninsured were more likely to pay out of pocket in CON states than in non-CON states.[115] Safety net hospitals in CON states also have lower margins than those in non-CON states.[116]

One pair of studies found that a large black-white disparity in the provision of coronary angiographies disappeared when the procedure was exempted from the CON process.[117] And two studies found that rural populations have less access to care in CON states compared with non-CON states.[118]

Taken together, the literature offers no support for the hypothesis that CON encourages care for underserved, rural or economically depressed communities. If anything, it seems to make these communities worse off.

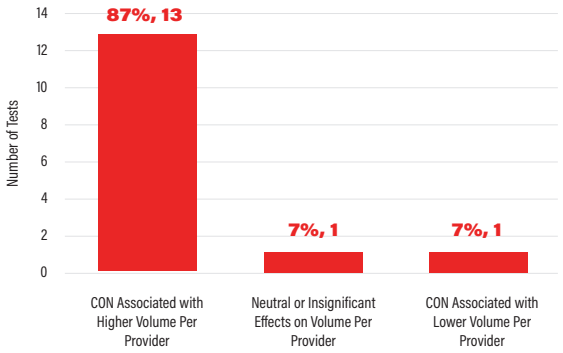
5. The Political Economy of CON

There is little evidence that CON achieves its stated goals. If anything, it seems to undermine them. Why, then, does it persist?

In this section we review a subset of papers that examine the political economy of CON.

One possible reason why states retain CON is that it is profitable for the hospitals that lobby for it. There is abundant evidence that CON leads to more business. Figure 10 summarizes the research on CON provider volume. Of 15 tests assessing the effect of CON on provider volume, 13 find that it is associated with higher volume, one test finds negligible results and one test finds it to be associated with reduced volume. CON, it seems, steers more patients to incumbent providers.

Figure 10. Tests Assessing the Effect of CON on Provider Volume



107 - Vaughan-Sarrazin, Mary S. et al., "Mortality in Medicare Beneficiaries Following Coronary Artery Bypass Graft Surgery in States with and without Certificate of Need Regulation," JAMA 288, no. 15 (October 16, 2002): 1859–66; Ho, Vivian, Meei-Hsiang Ku-Goto, and James G Jollis, "Certificate of Need (CON) for Cardiac Care: Controversy over the Contributions of CON," Health Services Research 44, no. 2 Pt 1 (April 2009): 483–500, https://doi.org/10.1111/j.1475-6773.2008.00933.x.
108 - National Health Planning and Resources Development Act of 1974, 3.
109 - Though not a direct test of CON there is some support for this hypothesis. Florida seems to have been more willing to grant CONs to hospitals offering care to low income populations. Fournier, Gary M. and Ellen S. Campbell, "Indigent Care as Quid Pro Quo in Hospital Regulation," The Review of Economics and Statistics 79, no. 4 (1997): 669–73.
110 - The cross-subsidy argument can be heard in almost every CON hearing in which a hospital association member is testifying.
111 - Note that this rationale contradicts the spending rationale for CON. The spending rationale contends that CON is needed to limit healthcare spending. The cross-subsidy rationale admits that CON is likely to lead to more spending–and higher profits for incumbent providers–but then contends that these profits will be diverted to care for the needy.
112 - Zhang, Lei, "Uncompensated Care Provision and the Economic Behavior of Hospitals: The Influence of the Regulatory Environment" (Ph.D. Dissertation, Atlanta, Georgia, Georgia State University, 2008); Stratmann, Thomas, and Jacob Russ, "Do Certificate-of-Need Laws Increase Indigent Care?," Working Paper (Arlington, VA: Mercatus Center at George Mason University, July 2014).
113 - Zhang, Lei, "Uncompensated Care Provision and the Economic Behavior of Hospitals."
114 - Bailey, James B., Thanh Lu, and Patrick Vogt, "Certificate of Need and Substance Use Treatment," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, December 29, 2020), https://doi.org/10.2139/ssrn.3757059.
115 - Custer, William S. et al., "Report of Data Analyses to the Georgia Commission on the Efficacy of the CON Program," Aysps.Gsu.Edu, November 2006.
116 - Dobson, Al et al., "An Evaluation of Illinois' Certificate of Need Program" (Prepared for: State of Illinois Commission on Government Forecasting and Accountability, 2007).
117 - Cantor, Joel C. et al., "Reducing Racial Disparities In Coronary Angiography," Health Affairs 28, no. 5 (September 1, 2009): 1521–31; DeLia, Derek 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 (February 2009): 63–91.
118 - Stratmann, Thomas and Christopher Koopman, "Entry Regulation and Rural Health Care: Certificate-of-Need Laws, Ambulatory Surgical Centers, and Community," Working Paper (Arlington, VA: Mercatus Center at George Mason University, February 18, 2016); D'Aunno, Thomas, Melissa Succi, and Jeffrey A. Alexander, "The Role of Institutional and Market Forces in Divergent Organizational Change," Administrative Science Quarterly 45 (2000): 679–703.

This extra volume, however, may not turn into extra profit. Compared with other effects, the effect of CON on hospital profits has been relatively understudied. Only two papers have looked at this question and they reach somewhat surprising results. One paper found that following the 1996 repeal of CON in Pennsylvania, hospital margins initially fell but eventually recovered. In fact, over the long run, Pennsylvania hospitals were more profitable than hospitals in CON states.[119] The other test, which was mentioned in the previous section, found that safety net margins were higher in non-CON states than in CON states. [120] Together, these results suggest that if CON positively affects hospital margins, it only does so in the short run.[121]

Even if hospital owners fail to benefit from CON over the long run, their employees may still benefit. Indeed, one study found that urban hospital CEOs earn more than $90,000 more in CON states than in non-CON states.[122] It is also possible that CON laws benefit certain types of providers such as those that are effective in political markets. One study looked at the relationship between PAC contributions and CON approval in three states.[123] In Georgia, the authors found that a 1 percent increase in contributions by an applicant firm increases the odds of approval by 6.7 percent.

Finally, one study examined several political factors to determine the likelihood of a state retaining its CON regulation.[124] The authors find that CON laws are correlated with: 1) Democrats in upper and lower houses, 2) higher hospital costs, 3) more affluent and better-educated citizens, 4) fewer physicians and 5) a variable measuring hospital interests. This last variable includes the number of hospital industry-related interest groups active in a particular state multiplied by their average political action committee spending. While this factor was found to be significantly associated with retention of CON, legislative party makeup was found to be more important.

CONCLUSION

Neighboring states have taken action in recent years to modernize or repeal their CON programs. In 2021, Tennessee scaled back their program and eliminated CON requirements for imaging in the most populous counties by using a population-based threshold, targeting the Nashville, Memphis, Chattanooga and Knoxville markets. Tennessee also repealed CON in its entirety for all rural counties that are categorized as economically disadvantaged by the Appalachian Regional Commission and do not currently have a hospital. In 2022, the South Carolina Senate passed a bill by a 35-6 vote that would have repealed the state's CON law for every healthcare facility with the exception of nursing homes. It was ultimately never brought up for a vote in

119 - Cutler, David M., 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 (February 2010): 51–76.
120 - Dobson, Al et al., "An Evaluation of Illinois' Certificate of Need Program" (Prepared for: State of Illinois Commission on Government Forecasting and Accountability, 2007).
121 - This is consistent with Gordon Tullock's thesis that privileged firms only earn above-normal profits in the short run. Tullock, Gordon. 1975. "The Transitional Gains Trap." The Bell Journal of Economics 6 (2): 671–78.
122 - Eichmann, Traci L, and Rexford E Santerre, "Do Hospital Chief Executive Officers Extract Rents from Certificate of Need Laws," Journal of Health Care Finance 37, no. 4 (January 1, 2011): 1–14.
123 - Stratmann, Thomas and Steven Monaghan, "The Effect of Interest Group Pressure on Favorable Regulatory Decisions: The Case of Certificate-of-Need Laws," Mercatus Working Paper (Arlington, VA: Mercatus Center at George Mason University, August 28, 2017).
124 - Teske, Paul and Richard Chard, "Hospital Certificates-of-Need," in Regulation in the States, ed. Paul Teske (Washington, D.C.: Brookings Institution, 2004), 125–32.

the House. Also in 2022, the North Carolina State Senate passed a bill by a 44-2 vote that would have repealed CON for ambulatory surgery centers, psychiatric beds, MRIs, chemical dependency treatment facilities, home health agencies and dialysis. This was part of a legislative package that would have also expanded Medicaid under the Affordable Care Act and allowed APRNs, including nurse practitioners, certified nurse midwives and certified registered nurse anesthetists, to practice without physician oversight. Ultimately, the North Carolina House never voted on the bill.

The politics of CON repeal are not easy. In nearly every community across the state, hospitals provide access to emergency care and are often the largest employer, providing high-paying, steady jobs. Not just in rural Georgia, but in metro Atlanta where three of the top four largest employers are health systems.[125] However, the idea that eliminating CON laws would result in the widespread closure of hospitals has not been validated by what we have witnessed in other states. In fact, academic research has shown CON laws reduce access to care.

The use of CON laws to protect profitable service lines has harmed not only patients, but new providers often wishing to practice medicine more closely aligned with a community's need, such as imaging centers or birthing centers. The counterargument that new providers can simply acquire a CON does not represent a viable path forward given the legal, financial and political ability of nearly all of these health systems. Even the process of allowing new hospitals – subject to the same indigent care and emergency access requirements that health systems utilize to decry ASCs and imaging centers – is not immune from the political reality and protectionism of CON. As one local official recalled of his conversation with a competing hospital's CEO, "I know I can't stop that hospital from being built. But I know I can delay it for many years."[126]

If state policymakers wish to lower healthcare costs and increase options for patients, reducing CON laws is one path forward.

125 - https://www.bizjournals.com/atlanta/subscriber-only/2022/07/15/atlantas-25-largest-employers.html
126 - https://www.wdef.com/local-state-politicians-defend-catoosa-county-chi-memorial-hospital/

APPENDIX

Paper	Year	Summary
Anderson, Keith B. and David I. Kass, "Certificate Of Need Regulation of Entry Into Home Health Care: A Multi-Product Cost Function Analysis" (Washington, D.C.: Federal Trade Commission, 1986).	1986	They examined the effect of CON on economies of scale and cost in the home health care industry. They found: 1) Costs were 2 percent higher in CON states relative to non-CON states. 2) No substantial economies of scale in the home health industry overall, 3) Nor did they find a difference in economies of scale in CON and non-CON states.
Antel, John J., Robert L. Ohsfeldt, and Edmund R. Becker, "State Regulation and Hospital Costs," The Review of Economics and Statistics 77, no. 3 (1995): 416–22.	1995	They find that CON increases per-day and per-admission hospital expenditures but has no relationship to per capita hospital expenditures.
Bailey, James "Can Health Spending Be Reined in through Supply Restraints? An Evaluation of Certificate-of-Need Laws," Journal of Public Health 27, no. 6 (December 1, 2019): 755–60, https://doi.org/10.1007/s10389-018-0998-1	2019	States that eliminate CON experience 4 percent reductions in real per capita health care spending.
Bailey, James and Eleanor Lewin, "Certificate of Need and Inpatient Psychiatric Services," The Journal of Mental Health Policy and Economics 24, no. 4 (December 1, 2021): 117–24.	2021	They examine the effect of psychiatric service CONs. They find that psychiatric service CONs: 1) Reduce the number of psychiatric hospitals by 20 percent; 2) Reduce the likelihood that a hospital will accept Medicare by 5.35 percentage points; and 3) Reduce the number of psychiatric clients per capita by 56 percent.
Bailey, James and Tom Hamami, "Competition and Health-Care Spending: Theory and Application to Certificate of Need Laws," Contemporary Economic Policy 41 (1): January 2023, 128-145.	2019	CON causes spending on those with less than excellent health to be as much as 20 percent higher.
Bailey, James B., Thanh Lu, and Patrick Vogt, "Certificate of Need and Substance Use Treatment," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, December 29, 2020), https://doi.org/10.2139/ssrn.3757059.	2020	They measure how CON affects the number of substance abuse facilities and beds per capita in a state, and the effect of CON on the forms of payment that treatment facilities accept. They find that CON reduces the acceptance of private insurance and Medicaid.
Bailey, James, "Can Health Spending Be Reined In through Supply Constraints? An Evaluation of Certificate-of-Need Laws," Mercatus Working Paper (Arlington, VA: Mercatus Center at George Mason University, August 1, 2016),	2016	Removing CON reduces hospital charges by 5.5 percent five years after repeal.
Bailey, James, "The Effect of Certificate of Need Laws on All-Cause Mortality," Health Services Research 53, no. 1 (February 2018): 49–62., James, "The Effect of Certificate of Need Laws on All-Cause Mortality," Health Services Research 53, no. 1 (February 2018): 49–62.	2018	He uses fixed- and random-effects regressions to test how the scope of state Certificate of Need laws affects all-cause mortality within US counties. Though he finds a positive relationship between CON laws and all-cause mortality, the results are not statistically significant.
Bailey, James, Tom Hamami, and Daniel McCorry, "Certificate of Need Laws and Health Care Prices," Journal of Health Care Finance 43, no. 4 (2017).	2017	They find that prices are higher in CON states relative to non-CON states, but the difference isn't statistically significant.
Baker, Matthew C., and Thomas Stratmann, "Barriers to Entry in the Healthcare Markets: Winners and Losers from Certificate-of-Need Laws," Socio-Economic Planning Sciences, 2021, https://doi.org/10.1016/j.seps.2020.101007.	2021	They examine the effect of medical imaging CONs on medical imaging providers. They find: 1) CON laws are associated with 20 to 33 percent fewer providers; 2) Residents of CON states are 3.4 to 5.3 percentage points more likely to travel out of state to obtain these services; 3) CON laws are associated with 27-53 percent fewer scans by nonhospital providers per beneficiary, 23 to 70 percent fewer scans by new hospitals, and 6 to 21 percent more scans by older hospitals
Bates, Laurie J., Kankana Mukherjee, and Rexford E. Santerre, "Market Structure and Technical Efficiency in the Hospital Services Industry: A DEA Approach," Medical Care Research and Review 63, no. 4 (August 2006): 499–524, https://doi.org/10.1177/1077558706288842.	2006	CON hospitals are not any less efficient than non-CON hospitals.
Browne, James A. et al., "Certificate-of-Need State Laws and Total Knee Arthroplasty," The Journal of Arthroplasty 33, no. 7 (July 1, 2018): 2020–24.	2018	They examined the effect of CON on total knee arthroplasty (TKA) by comparing states with and without CON programs. They looked at 4 factors: 1) Average Medicare reimbursements were 5 percent to 10 percent lower in non-CON states, 2) CON was associated with lower TKA utilization per capita, but faster growth in utilization per capita. 3) CON was associated with TKA in higher-volume hospitals, 4) Examination of adverse events rates did not reveal any strong associations between any adverse outcome and CON status.
Campbell, Ellen S. and Melissa W. Ahern, "Have Procompetitive Changes Altered Hospital Provision of Indigent Care?," Health Economics 2, no. 3 (1993): 281–89, https://doi.org/10.1002/hec.4730020311.	1993	Private nonprofit hospitals that are more profitable offer more uncompensated care. This suggests the possibility of a quid pro quo, but they do not actually test CON.
Cancienne, Jourdan M. et al., "Certificate-of-Need Programs Are Associated with a Reduced Incidence, Expenditure, and Rate of Complications with Respect to Knee Arthroscopy in the Medicare Population," HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery 16, no. Suppl 2 (December 2020): 264–71, https://doi.org/10.1007/s11420-019-09693-z.	2020	They examine the effect of CON on knee arthroscopy, assessing its effect on: 1) Charges and reimbursements: in t-tests without controls they found that charges (which are the prices set before any negotiation) were lower in CON states, while reimbursements (which are actual payments) were not statistically significantly different. 2) Total volume: total volume and growth in total volume was lower in CON states than in non-CON states. 3) Volume within facilities: CON is associated with the presence of more high-volume facilities, and 4) Quality: There were more ER visits within 30 days of operation and more infections within six months of operation in CON than in non-CON states; there were no differences in in-hospital deaths or readmissions within 30 days of the operation between CON and non-CON states.
Cantor, Joel C. et al., "Reducing Racial Disparities In Coronary Angiography," Health Affairs 28, no. 5 (September 1, 2009): 1521–31, https://doi.org/10.1377/hlthaff.28.5.1521.	2009	The authors studied a 1996 New Jersey reform that created a pilot program to license additional hospitals to perform coronary angiography. They found that a large black-white disparity disappeared after the refor.
Carlson, Melissa D.A., et al., "Geographic Access to Hospice in the United States," Journal of Palliative Medicine 13, no. 11 (November 2010): 1331–38, https://doi.org/10.1089/jpm.2010.0209.	2010	This is a cross-sectional study of geographic access to U.S. hospices using multivariate logistic regression to identify gaps in hospice availability (measured by distance to hospice facilities) by community characteristics. CON was associated with longer travel distance to hospice care.
Casp, Aaron J. et al., "Certificate-of-Need State Laws and Total Hip Arthroplasty," The Journal of Arthroplasty 34, no. 3 (March 2019): 401–7.	2019	They study the effect of CON on total hip arthroplasty. They find: 1) CON is associated with a lower volume of total hip arthroplasty. 2) CON is associated with care in high-volume hospitals. 3) No difference in postoperative complications between CON and non-CON states.

Paper	Year	Summary
Chen, Chi-Chang, "Estimating Nursing Home Cost and Production Functions: Application of Stochastic Frontier Models for the Analysis of Efficiency," ProQuest Dissertations and Theses (Ph.D., New Orleans, LA, Tulane University, 2005), http://www.proquest.com/docview/305399421/abstract/F9AE5D67757C4ACAPQ/1.	2005	CON is associated with greater cost efficiency, but diminished technical efficiency.
Chiu, Kevin, "The Impact of Certificate of Need Laws on Heart Attack Mortality: Evidence from County Borders," Journal of Health Economics, 2021, https://doi.org/10.2139/ssrn.3678714.	2021	He uses a cross-border discontinuity design to study the effect of CON on heart attack mortality. He finds that it is associated with 6 to 10 percent higher mortality three years after enactment.
Choudhury, Agnitra Roy, Sriparna Ghosh, and Alicia Plemmons, "Certificate of Need Laws and Health Care Use during the COVID-19 Pandemic," Journal of Risk and Financial Management 15, no. 2 (2022)	2022	They examined the relationship between CON and mortality associated with illnesses that require similar medical equipment as COVID. They find that: 1) There are higher mortality rates in CON states than in non-CON states; and 2) States with high healthcare utilization that reformed their CON laws during the pandemic saw lower mortality rates resulting from natural death, septicemia, diabetes, chronic lower respiratory disease, influenza or pneumonia, Alzheimer's, and COVID.
Conover, Christopher J. and Frank A. Sloan, "Does Removing Certificate-of-Need Regulations Lead to a Surge in Health Care Spending?," Journal of Health Politics, Policy and Law 23, no. 3 (June 1, 1998): 455–81.	1998	CON has no effect on total per capita health expenditures; there is no evidence of a surge in spending after repeal.
Conover, Christopher J. and Frank A. Sloan, "Evaluation of Certificate of Need in Michigan. Volume II: Technical Appendices" (Raleigh, NC: Duke University Center for Health Policy, Law and Management, 2003).	2003	Dropping CON has 0 percent effect on all expenditures.
Custer, William S. et al., "Report of Data Analyses to the Georgia Commission on the Efficacy of the CON Program," Aysps.Gsu.Edu, November 2006.	2006	They use a cross-border design to study the effect of CON in hospital markets. This allows them to control for unobservable factors. They also used interviews and public information to develop an index measuring CON rigor based on fees, administrative requirements, reviewability, appeals, and administrative complexity. They assess the effects of CON on acute care, long term care, and home health markets. They find : 1) CON is associated with higher private inpatient acute care costs 2) Acute care costs rise with the rigor of the CON program for the most resource-intensive acute care diagnoses. 3) Some evidence that CON is associated with higher Medicaid costs for home health services. 4) There is weak evidence that CON is associated with higher private long term care costs. 5) There is weak evidence that CON is associated higher Medicaid long term care costs. 6) Some evidence that CON is associated with higher per-capita costs for home health services 7) CON is associated with fewer hospitals. 8) CON is associated with fewer hospital beds. 9) CON is associated with fewer home health agencies per 1000 residents. 10) CON is associated with fewer Medicare beneficiaries receiving home health services. 11) There is no significant relationship between the percent of hospital admissions that are self-pay, though when controlling for the number of uninsured and family income, CON is positively related to self-pay admission per uninsured. 12) There is no apparent difference in acute care quality in CON and non-CON markets 13) In long term care, CON is associated with better quality on two measures but worse quality on six measures. 14) In home health markets, they find no evidence that CON affects any of 10 outcome measures of quality. 15) They find that acute care markets are less competitive when CON is rigorous. 16) CON is associated with lower levels of competition in home health agency markets
Cutler, David M., 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 (February 2010): 51–76.	2010	They assess the 1996 repeal of CON in Pennsylvania on Coronary Artery Bypass Graft (CABG). They found: 1) Repeal of CON reduced travel distanced by 9 percent; 2) There was no statistically significant effect on total volume following CON repeal; 3) There were mixed results on scale; following CON repeal, fewer surgeries were performed by high-volume hospitals, but more were performed by high-volume surgeons. 4) CON repeal led to a shift from standard quality to high quality surgeons; and 5) Incumbent hospital margins initially fell following repeal but these hospitals had regained profitability and were the most profitable by 2002.
D'Aunno, Thomas, Melissa Succi, and Jeffrey A. Alexander, "The Role of Institutional and Market Forces in Divergent Organizational Change," Administrative Science Quarterly 45 (2000): 679–703.	2000	They study the market and institutional determinants of radical organizational change in rural hospitals. In particular, they study the factors that make a rural hospital likely to change to provide other types of services. They find that stronger CON regulation makes a rural hospital 8 percent less likely to change.
DeLia, Derek 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 (February 2009): 63–91, https://doi.org/10.1215/03616878-2008-992.	2009	This builds off of the authors' previous study by the same authors, confirming the result (the reforms eliminated the black-white disparity) using additional techniques (weighting zip codes by the number of black and white residents). They also study the mechanism by which the disparity was eliminated, finding that incumbent hospitals served more black patients as new entrants cut into their market share for white patients.
DiSesa, Verdi J. et al., "Contemporary Impact of State Certificate-of-Need Regulations for Cardiac Surgery: An Analysis Using the Society of Thoracic Surgeons' National Cardiac Surgery Database," Circulation 114, no. 20 (November 14, 2006): 2122–29.	2006	They study CON, volume, and mortality in coronary artery bypass grafting (CABG). They find: 1) CON is positively associated with CABG volume within hospitals, and 2) There is no direct relationship between CON and mortality.
Dobson, Al et al., "An Evaluation of Illinois' Certificate of Need Program" (Prepared for: State of Illinois Commission on Government Forecasting and Accountability, 2007).	2007	They find that safety-net hospitals in non-CON states had higher margins than those in CON states.
Eakin, B. Kelly, "Allocative Inefficiency in the Production of Hospital Services," Southern Economic Journal 58, no. 1 (1991): 240–48.	1991	CON hospitals are less efficient than non-CON hospitals.
Eichmann, Traci L, and Rexford E Santerre, "Do Hospital Chief Executive Officers Extract Rents from Certificate of Need Laws," Journal of Health Care Finance 37, no. 4 (January 1, 2011): 1–14.	2011	They study the effects of CON on access and rents. They find CON is associated with 1) 12 percent fewer beds per capita, 2) 48 percent fewer hospitals per capita, and 3) $91,000 more in urban hospital CEO pay.

Paper	Year	Summary
Ettner, Susan L. et al., "Certificate of Need and the Cost of Competition in Home Healthcare Markets," Home Health Care Services Quarterly 39, no. 2 (June 2020): 51–64.	2020	They examine the effects of home health agency CONs and nursing home CONs on home health agencies. They find that in states with home health agency CONs there are: 1) Lower per patient expenditures (they don't know if this is due to skimping or to economies of scale); 2) Higher expenditures per agency, 3) Higher expenditures per resident, 4) Slightly fewer home health agencies per capita, 5) Higher caseloads (volume) within agencies (this is what drives the higher expenditures per agency.
Falchook, Aaron D. and Ronald C. Chen, "Association Between Certificate of Need Legislation and Radiation Therapy Use Among Elderly Patients With Early Cancers," International Journal of Radiation Oncology, Biology, Physics 91, no. 2 (February 1, 2015): 448–50, https://doi.org/10.1016/j.ijrobp.2014.10.033.	2015	They examined utilization of radiation therapy when it is not warranted in CON and non-CON states, concluding that in CON states there is greater use of this treatment on elderly patients who may not need it.
Fayissa, Bichaka et al., "Certificate-Of-Need Regulation and Healthcare Service Quality: Evidence from the Nursing Home Industry," Healthcare (Basel, Switzerland) 8, no. 4 (October 23, 2020): E423, https://doi.org/10.3390/healthcare8040423.	2020	In an IV study, they find that CON is associated with: 1) 18 to 24 percent lower nursing home survey scores computed by healthcare professionals, and 2) The substitution of lower-quality certified nursing assistance care for higher-quality licensed practical nurse care
Ferrier, Gary D., Hervé Leleu, and Vivian Valdmanis, "The Impact of CON Regulation on Hospital Efficiency," Health Care Management Science 13, no. 1 (March 2010): 84–100.	2010	CON hospitals are more efficient than non-CON hospitals.
Ford, Jon M. and David L. Kaserman, "Certificate-of-Need Regulation and Entry: Evidence from the Dialysis Industry," Southern Economic Journal 59, no. 4 (1993): 783–91, https://doi.org/10.2307/1059739.	1993	They assess the effect of CON on the number of dialysis clinics and stations, finding that it has limited new firm entry and total capacity.
Fournier, Gary M. and Ellen S. Campbell, "Indigent Care as Quid Pro Quo in Hospital Regulation," The Review of Economics and Statistics 79, no. 4 (1997): 669–73, https://doi.org/10.1162/003465397557088.	1997	They found that Florida awarded CON licenses to hospitals providing more care to the poor, though they don't directly test whether CON increases indigent care.
Fric-Shamji, Elana C. and Mohammed F. Shamji, "Effect of US State Certificate of Need Regulation of Operating Rooms on Surgical Resident Training," Clinical and Investigative Medicine. Medecine Clinique Et Experimentale 33, no. 2 (April 1, 2010): E78.	2021	They evaluate the mean per capita rates of 26 diverse surgical procedures in 21 CON and 5 non-CON states between 2004 and 2006. The proportion of procedures performed in teaching facilities was also assessed. They found no significant difference in procedural rates between CON and non-CON states.
Garmon, Chris, "Hospital Competition and Charity Care," Forum for Health Economics & Policy 12, no. 1 (May 1, 2009), https://doi.org/10.2202/1558-9544.1130.	2009	This is not a direct test of CON. Instead, he tests whether hospital competition is associated with more or less charity care. He finds no evidence that increased competition reduces charity care. Furthermore, he finds some evidence that reduced competition leads to higher prices for uninsured patients.
Gertler, Paul J., "A Latent Variable Model of Quality Determination," Working Paper, Working Paper Series (National Bureau of Economic Research, October 1985).	1985	He finds that under a binding CON capacity constraint, increases in Medicaid rates are associated with lower quality in New York state nursing home facilities.
Grabowski, David C., Robert L. Ohsfeldt, and Michael A. Morrisey, "The Effects of CON Repeal on Medicaid Nursing Home and Long-Term Care Expenditures," Inquiry: A Journal of Medical Care Organization, Provision and Financing 40, no. 2 (2003): 146–57.	2003	CON repeal: 1) Has no statistically significant effect on per diem Medicaid nursing home charges, 2) No effect on per diem Medicaid long-term-care charges, 3) No effect on days.
Harrington, Charlene et al., "The Effect of Certificate of Need and Moratoria Policy on Change in Nursing Home Beds in the United States," Medical Care 35, no. 6 (1997): 574–88.	1997	In a two-stage least squares regression, they assess the effect of CON, and/or moratoria on the growth of nursing home beds and Medicaid nursing home reimbursement rates. They found: 1) CON had no effect on Medicaid nursing home reimbursement rates. 2) CON reduced growth of beds.
Hellinger, Fred J., "The Effect of Certificate-of-Need Laws on Hospital Beds and Healthcare Expenditures: An Empirical Analysis," The American Journal of Managed Care 15, no. 10 (October 2009): 737–44.	2009	CON is associated with fewer hospital beds, which in turn are associated with slower growth in aggregate health expenditures per capita. But there is no direct relationship between CON and health expenditures per capita.
Hellinger, Fred J., "The Effect of Certificate-of-Need Legislation on Hospital Investment," Inquiry 13, no. 2 (1976): 187–93.	1976	CON legislation induced hospitals to increase investments before CON took effect. They interpret this as a bad result. We code it as positive since it did increase access (in the short run).
Herb, Joshua N. et al., "Travel Time to Radiation Oncology Facilities in the United States and the Influence of Certificate of Need Policies," International Journal of Radiation Oncology, Biology, Physics 109, no. 2 (February 1, 2021): 344–51.	2021	They measure the effect of CON on travel time to radiation oncology facilities, breaking down the effect by region. They find CON: 1) Has no association with prolonged travel in the West; 2) Is associated with lower odds of prolonged travel in both urban and rural tracts in the South; 3) Is associated with increased odds of prolonged travel in both urban and rural tracts in the Midwest and Northeast.
Ho, Vivian and Meei-Hsiang Ku-Goto, "State Deregulation and Medicare Costs for Acute Cardiac Care," Medical Care Research and Review 70, no. 2 (April 2013): 185–205.	2013	Removing CON decreases the cost of coronary artery bypass grafts, but not for percutaneous coronary intervention. In Ohio, reimbursements fell 2.8 percent following repeal of CON and in Pennsylvania, they fell 8.8 percent following repeal.
Ho, Vivian et al., "Cardiac Certificate of Need Regulations and the Availability and Use of Revascularization Services," American Heart Journal 154, no. 4 (October 2007): 767–75.	2007	They study the association between cardiac CON regulations, availability of revascularization facilities, and revascularization rates, focusing on differences between the general population and the elderly and on differences between procedures (coronary artery bypass graft surgery (CABG) or a percutaneous coronary intervention (PCI)). They find that: 1) CON is associated with fewer hospitals offering CABG and PCI, 2) CON has no effect on overall CABG utilization. 3) CON is associated with 19.2 percent fewer PCIs per 1,000 elderly.
Ho, Vivian, "Certificate of Need, Volume, and Percutaneous Transluminal Coronary Angioplasty Outcomes," American Heart Journal 147, no. 3 (March 2004): 442–48.	2004	She compares Florida, where there is a CON for percutaneous transluminal coronary angioplasty (PTCA) with California, where there is no such CON. She finds: 1) CON is associated with higher in-hospital volume for PTCA 2) There is a positive relationship between PTCA volume and mortality outcomes (though note that she does not directly study the relationship between CON and PTCA mortality outcomes).

Paper	Year	Summary
Ho, Vivian, "Does Certificate of Need Affect Cardiac Outcomes and Costs?," International Journal of Health Care Finance and Economics 6, no. 4 (March 6, 2007): 300–324.	2007	The study assesses the effect of CON on cardiac costs and outcomes. She finds: 1) While CON is associated with lower average costs per patient, it also seems to be associated with more procedures and this is enough to offset the savings from lower average costs; 2) CON is associated with greater volume within hospitals, 3) CON does not seem to be related to inpatient mortality.
Ho, Vivian, Meei-Hsiang Ku-Goto, and James G Jollis, "Certificate of Need (CON) for Cardiac Care: Controversy over the Contributions of CON," Health Services Research 44, no. 2 Pt 1 (April 2009): 483–500, https://doi.org/10.1111/j.1475-6773.2008.00933.x.	2009	They use difference-in-difference regression analysis to compare states that dropped CON during the sample period with states that kept the regulation. They focused on coronary artery bypass graft surgery (CABG) and percutaneous coronary interventions (PCI). They found that in states that dropped CON: 1) The number of hospitals in the state performing CABG and PCI went up following repeal; 2) Statewide procedural volume for CABG and PCI were unchanged; 3) Mean hospital volume declined for both procedures, and 4) Procedural CABG mortality declined after repeal, though the difference was not permanent
Joskow, Paul L., "The Effects of Competition and Regulation on Hospital Bed Supply and the Reservation Quality of the Hospital," The Bell Journal of Economics 11, no. 2 (1980): 421–47.	1980	He assesses the effects of regulations on bed supply and the probability that a hospital will turn away patients. He finds that CON reduces bed supply by about 6 percent and makes it more likely that a hospital will turn away patients.
Khanna, Abhinav et al., "Certificate of Need Programs, Intensity Modulated Radiation Therapy Use and the Cost of Prostate Cancer Care," The Journal of Urology 189, no. 1 (January 2013): 75–79.	2013	The authors focus on intensity modulated radiation therapy. They find that: 1) CON was not associated with any difference in cost growth 2) CON was associated with greater growth in intensity modulated radiation therapy which is an expensive and no more effective treatment, so they interpret this as a negative quality result.
Kolstad, Jonathan T., "Essays on Information, Competition and Quality in Health Care Provider Markets" (Ph.D. Dissertation, Boston, MA, Harvard University, 2009), https://healthpolicy.fas.harvard.edu/people/jonathan-kolstad.	2009	He examined how the 1996 repeal of CON legislation in Pennsylvania affected the market for coronary artery bypass graft (CABG) surgery in the state, finding: 1) The number of CABG facilities increased 46 percent and 2) Surgeries were more likely to be performed by high quality surgeons.
Lanning, Joyce A., Michael A. Morrisey, and Robert L. Ohsfeldt, "Endogenous Hospital Regulation and Its Effects on Hospital and Non-Hospital Expenditures," Journal of Regulatory Economics 3, no. 2 (June 1991): 137–54.	1991	They measure the effect of CON on hospital expenditures, finding that it is associated with 20.6 percent higher spending per capita.
Li, Suhui, and Avi Dor. "How Do Hospitals Respond to Market Entry? Evidence from a Deregulated Market for Cardiac Revascularization." Health Economics 24, no. 8 (August 2015): 990–1008. https://doi.org/10.1002/hec.3079.	2015	Removal of CON was associated with: 1) A substantial increase in the number of hospitals performing cardiac revascularization procedures, 2) An overall downward trend in CABG and an overall upward trend in the alternative procedure, PCI. 3) Entry led to a significant increase in the likelihood of CABG, relative to trend, but it did not contribute to the increase in PCI after adjusting for patient traits, market characteristics, and area-specific trends. 4) The probability of receiving PCI specifically at incumbent hospitals decreased with market entry, suggesting a volume shift from incumbents to entrants 5) Entry shifted a disproportionate volume of low-severity patients from incumbent hospitals to entrants. 6) Entry by new cardiac surgery centers tended to sort high-severity patients into the more invasive CABG procedure and low-severity patients into the less invasive PCI procedures, potentially improving quality of care.
Lorch, S. A., P. Maheshwari, and O. Even-Shoshan, "The Impact of Certificate of Need Programs on Neonatal Intensive Care Units," Journal of Perinatology: Official Journal of the California Perinatal Association 32, no. 1 (January 2012): 39–44.	2012	They studied NICU CONs. They found: 1) CON is associated with fewer units; 2) CON is associated with fewer beds; 3) CON was unrelated to very low birth weight (VLBW) infant mortality and low birth weight (LBW) infant mortality. 4) CON is associated with lower rates of all-infant mortality in states with a large metropolitan area.
Mendelson, D. N. and J. Arnold, "Certificate of Need Revisited," Spectrum 66, no. 1 (1993): 36–44.	1993	They found that Ohio denied CONs that could have had adverse effects on the financial viability of safety net hospitals. But it was not a direct test of CON
Miller, Nancy A., Charlene Harrington, and Elizabeth Goldstein, "Access to Community-Based Long-Term Care: Medicaid's Role," Journal of Aging and Health 14, no. 1 (February 2002): 138–59.	2002	They find that CON increases per capita Medicaid community-based care expenditures.
Mitchell, Matthew and Thomas Stratmann, "The Economics of a Bed Shortage: Certificate-of-Need Regulation and Hospital Bed Utilization during the COVID-19 Pandemic," Journal of Risk and Financial Management 15, no. 1 (January 2022): 1-18.	2022	They examine the effect of bed CON on statewide bed utilization rates and on individual hospital shortages. They find: 1) States that require CONs for beds had 12 percent higher bed utilization rates; 2) And 58 percent more days with more than 70 percent of their beds in use. 3) Hospitals in these states were 27 percent more likely to run out of beds. 4) States that relaxed these rules for COVID saw no difference in utilization rates or shortages.
Mitchell, Matthew, Thomas Stratmann, and James Bailey, "Raising the Bar: ICU Beds and Certificates of Need" (Arlington, VA: Mercatus Center at George Mason University, April 29, 2020), https://www.mercatus.org/publications/covid-19-crisis-response/raising-bar-icu-beds-and-certificates-need.	2020	They studied the relationship between CON and projected ICU bed shortages over the course of the COVID-19 pandemic. They found that compared with non-CON states, in CON states, expected shortages were more than twice as likely and the shortages were about 9 times greater in per capita terms.
Myers, Molly S. and Kathleen M. Sheehan, "The Impact of Certificate of Need Laws on Emergency Department Wait Times," Journal of Private Enterprise 35, no. 1 (Spring 2020): 59–75.	2020	They examine the effect of CON laws on wait times. They find CON programs: 1) Increase median wait times for medical examinations; 2) Increase wait times for pain medication administration; 3) Increase wait times for hospital admittance; and 4) Increase wait times for hospital discharge.
Noether, Monica, "Competition Among Hospitals," Journal of Health Economics 7, no. 3 (September 1988): 259–84.	1988	CON increases the average price and expense for several disease categories including: 1) Diabetes mellitus 2) Cataract surgery 3) Acute myocardial infarction 4) Congestive heart failure 5) Acute, cerebrovascular disease 6) Pneumonia 7) Respiratory system disease, other 8) Inguinal hernia 9) Diverticula of intestine 10) Hyperplasia of prostate 11) Fracture of neck and femure

Paper	Year	Summary
Noh, Shihyun and Catherine H. Brown, "Factors Associated with the Number of Substance Abuse Nonprofits in the U.S. States: Focusing on Medicaid Expansion, Certificate of Need, and Ownership," Nonprofit Policy Forum 9, no. 2 (July 1, 2018), https://doi.org/10.1515/npf-2017-0010.	2018	The study the effects of CON on substance abuse facilities, finding: 1) CON laws are negatively associated with the number of nonprofit substance abuse facilities; 2) But in states with both CON laws and Medicaid expansion, the number of nonprofit substance abuse facilities tended to increase.
Nyman, John A., "The Effects of Market Concentration and Excess Demand on the Price of Nursing Home Care," The Journal of Industrial Economics 42, no. 2 (1994): 193–204.	1994	He doesn't directly test CON, but rather tests the effect of market concentration and excess demand on nursing home prices. Since CON is likely to make both matters worse, he concludes that CON likely undermines its goals.
Ohsfeldt, Robert L. and Pengxiang Li, "State Entry Regulation and Home Health Agency Quality Ratings," Journal of Regulatory Economics 53, no. 1 (2018): 1–19.	2018	They examine the effect of CON on home health agency quality ratings from the Centers for Medicare and Medicaid Services (CMS). They find that: 1) HHAs in CON states were about 58 percent less likely to be rated as High quality ($p < .01$). 2) HHAs in CON states also were about 30 percent more likely to be rated as "Medium" quality compared to HHAs in states without CON for HHAs.
Paul, Jomon A., Huan Ni, and Aniruddha Bagchi, "A Study of the Effects of Certificate of Need Law on Inpatient Occupancy Rates," Service Science 11, no. 1 (March 1, 2019): 1–15, https://doi.org/10.1287/serv.2018.0228.	2019	States with CON laws have lower bed occupancy rates. The authors speculate that while CON reduces the number of beds, it may also shorten the length of patient stay and the net effect is to reduce the occupancy rate. Note that this is the opposite of the intention (which was to reduce unused capacity).
Paul, Jomon A., Huan Ni, and Aniruddha Bagchi, "Does Certificate of Need Law Enhance Competition in Inpatient Care Market? An Empirical Analysis," Health Economics, Policy and Law 14, no. 3 (July 2019): 400–420, https://doi.org/10.1017/S1744133117000184.	2019	They study the effect of CON on market concentration, as measured by a normalized Herfindahl–Hirschman Index (HHI) built using inpatient volume data of acute care hospitals in each health referral region (HRR). They find that CON is associated with less market concentration.
Polsky, Daniel et al., "The Effect of Entry Regulation in the Health Care Sector: The Case of Home Health," Journal of Public Economics 110 (February 2014): 1–14.	2014	They assess the effect of CON on home health agencies, using a research design that focuses on markets that straddle CON and non-CON states. They find that: 1) Medicare expenditures are not statistically significantly different between CON and non-CON states; 2) Non-CON states have roughly twice as many home health agencies per Medicare beneficiary, 3) CON states have 13.7 percent fewer home health admissions from hospitals; 4) 60 day (total) readmission rates are 5 percent higher in CON states than in non-CON states, though the effect is not sustained. 5) 60 day preventable readmission rates are 13 percent higher in CON states than in non-CON states, though the effect is not sustained. 6) In CON states there are fewer home health visits, fewer visits per week, and a lower proportion of visits by skilled nurses, but the effects are small and not statistically significant; 7) The Herfindahl Index in the home health market is approximately 1,000 points lower in non-CON states.
Popescu, Iona, Mary S. Vaughan-Sarrazin, and Gary E. Rosenthal, "Certificate of Need Regulations and Use of Coronary Revascularization After Acute Myocardial Infarction," The Journal of the American Medical Association 295, no. 18 (May 10, 2006): 2141–47.	2006	They studied access and quality outcomes in revascularization. They found that patients in CON states: 1) Were less likely to be admitted to hospitals offering revascularization, 2) Were less likely to undergo revascularization, and 3) Had no difference in 30-day mortality rates relative to patients in non-CON states
Rahman, Momotazur et al., "The Impact of Certificate-of-Need Laws on Nursing Home and Home Health Care Expenditures," Medical Care Research and Review: MCRR 73, no. 1 (February 2016): 85–105.	2016	CON increases the growth in Medicare and Medicaid expenditures on nursing home care but decreases growth in home healthcare expenditures.
Rivers, Patrick A., Myron D. Fottler, and Jemima A. Frimpong, "The Effects of Certificate of Need Regulation on Hospital Costs," Journal of Health Care Finance 36, no. 4 (2010): 1–16.	2010	They find that stringent CON programs increase hospital expenditures per admission.
Rivers, Patrick A., Myron D. Fottler, and Mustafa Zeedan Younis, "Does Certificate of Need Really Contain Hospital Costs in the United States?," Health Education Journal 66, no. 3 (September 1, 2007): 229–44, https://doi.org/10.1177/0017896907080127.	2007	They find CON laws increase hospital expenditures per adjusted admission.
Robinson, J. L. et al., "Certificate of Need and the Quality of Cardiac Surgery," American Journal of Medical Quality: The Official Journal of the American College of Medical Quality 16, no. 5 (October 2001): 155–60.	2001	They examined the effect of CON elimination in PA (comparing it with NJ, which maintained CON): 1) On the number of open-heart surgery programs, which increased 25 percent following elimination of CON; 2) The total volume of CABG surgeries which were unchanged following repeal, 3) Provider volume, which shifted from programs that had been established before CON repeal to programs that were established after CON repeal, and 4) Mortality rate, which was unchanged following repeal.
Rosko, Michael D. and Ryan L. Mutter, "The Association of Hospital Cost-Inefficiency With Certificate-of-Need Regulation," Medical Care Research and Review 71, no. 3 (January 22, 2014): 280–98.	2014	CON hospitals are more efficient than non-CON hospitals.
Ross, Joseph S. et al., "Certificate of Need Regulation and Cardiac Catheterization Appropriateness After Acute Myocardial Infarction," Circulation 115, no. 8 (February 27, 2007): 1012–19.	2007	They examine the effect of CON on the volume of cardiac catheterization after admission for acute myocardial infarction. In particular, however, they were interested in procedural volume under different levels of appropriateness (strongly, equivocally, or weakly indicated). While CON did not seem to decrease the volume of strongly-indicated catheterization, it did reduce the volume of equivocally and weakly indicated catheterization. Because their interest is both overall volume and rates of catheterization when it is not warranted, I categorize in both the volume and the quality sections.
Salkever, David S. and Thomas W. Bice, "The Impact of Certificate-of Need Controls on Hospital Investment," The Milbank Memorial Fund Quarterly. Health and Society 54, no. 2 (1976): 185–214.	1976	CON does not decrease investment but does change its composition.
Schultz, Olivia A., Lewis Shi, and Michael Lee, "Assessing the Efficacy of Certificate of Need Laws Through Total Joint Arthroplasty," Journal for Healthcare Quality: Official Publication of the National Association for Healthcare Quality 43, no. 1 (February 1, 2021): e1–7.	2021	They examined the effect of CON on total knee (TKA), hip (THA), and shoulder arthroplasty (TSA), finding: 1) TKA and TSA costs were higher in CON states than in non-CON states (and these results were statistically significant); THA costs were lower in CON states but these results were not statistically significant. 2) CON is associated with a lower volume of TKA and TSA procedures, though it was not statistically significant in the case of hip arthroplasty, and 3) CON has no statistically significant effect on complications (deep vein thrombosis and pulmonary embolism)

Paper	Year	Summary
Sherman, Daniel, "The Effect of State Certificate-of-Need Laws on Hospital Costs: An Economic Policy Analysis | Federal Trade Commission," Staff Report of the Bureau of Economics (Washington, D.C.: Federal Trade Commission, January 1988), https://www.ftc.gov/reports/effect-state-certificate-need-laws-hospital-costs-economic-policy-analysis.	1988	He estimates the effects of CON on cost functions using a sample of 3708 hospitals using data from 1983-84. Though he uses the term costs, he is actually measuring operating expenditures. He finds that spending would fall by 1.4 percent if states relaxed CON.
Short, Marah N., Thomas A. Aloia, and Vivian Ho, "Certificate of Need Regulations and the Availability and Use of Cancer Resections," Annals of Surgical Oncology 15, no. 7 (July 2008): 1837–45.	2008	They studied Medicare data on beneficiaries treated with one of six cancer resections and an associated cancer diagnosis from 1989 to 2002. They found: 1) CON is associated with fewer hospitals per cancer incident for colectomy, rectal resection, and pulmonary lobectomy; 2) CON has no effect on the number of procedures per cancer incident; 3) CON was associated with greater hospital volume.
Shortell, S. M. and E. F. Hughes, "The Effects of Regulation, Competition, and Ownership on Mortality Rates Among Hospital Inpatients," The New England Journal of Medicine 318, no. 17 (April 28, 1988): 1100–1107, https://doi.org/10.1056/NEJM198804283181705.	1988	They examined the effect of CON (among other factors) on hospital quality, finding that the ratio of actual to predicted mortality rates among Medicare patients were 5 to 6 percent higher in state with stringent CON regulation.
Sloan, Frank A., "Regulation and the Rising Cost of Hospital Care," The Review of Economics and Statistics 63, no. 4 (November 1, 1981): 479–87.	1981	CON has no effect on hospital expenditures per admission, per patient day, or per adjusted patient day.
Sloan, Frank A. and Bruce Steinwald, "Effects of Regulation on Hospital Costs and Input Use," The Journal of Law & Economics 23, no. 1 (1980): 81–109.	1980	Comprehensive CON programs have no effect on hospital expenditures per patient day, while noncomprehensive programs increase hospital expenditures by 5 percent per patient day.
Stratmann, Thomas and Christopher Koopman, "Entry Regulation and Rural Health Care: Certificate-of-Need Laws, Ambulatory Surgical Centers, and Community," Working Paper (Arlington, VA: Mercatus Center at George Mason University, February 18, 2016), http://mercatus.org/sites/default/files/Stratmann-Rural-Health-Care-v1.pdf.	2016	They study the effect of CON on overall supply of services as well as rural supply of services. In particular, they find: 1) CON programs are associated with 30 percent fewer hospitals per 100,000 residents across the entire state. 2) ASC-specific CONs are correlated with 14 percent fewer total ASCs per 100,000 residents. 3) CON programs are associated with 30 percent fewer rural hospitals per 100,000 rural residents. 4) ASC-specific CONs are correlated with 13 percent fewer rural ASCs per 100,000 rural residents.
Stratmann, Thomas and Matthew Baker, "Examining Certificate-of-Need Laws in the Context of the Rural Health Crisis," Mercatus Working Paper (Arlington, VA: Mercatus Center at George Mason University, July 29, 2020), https://www.mercatus.org/publications/healthcare/examining-certificate-need-laws-context-rural-health-crisis.	2020	They examine the effect of CON on two measures of spending and two measures of quality (all four are indicators of "overutilization or waste"): 1) Medicare spending per rural beneficiary (they found this was $295 higher in CON states than in non-CON states) 2) Ambulance spending per beneficiary ($2.54 higher in CON states) 3) Hospital readmission rates (1.2 percentage points higher in CON states) 4) Emergency room visits per 1,000 beneficiaries (35.1 more emergency department visits per 1,000 beneficiaries in CON states),
Stratmann, Thomas and Steven Monaghan, "The Effect of Interest Group Pressure on Favorable Regulatory Decisions: The Case of Certificate-of-Need Laws," Mercatus Working Paper (Arlington, VA: Mercatus Center at George Mason University, August 28, 2017).	2017	They examine the link between PAC contributions by applicants and the likelihood of CON approval in three states. They find: 1) The approval rate in Georgia is 57 percent, the approval rate in Michigan is 77 percent, and the approval rate in Virginia is 51 percent. 2) A 1 percent increase in contributions by an applicant firm increases the odds of approval by 6.7 percent in Georgia, 1.8 percent in Michigan, and 3.6 percent in Virginia.
Stratmann, Thomas, "The Effects of Certificate-of-Need Laws on the Quality of Hospital Medical Services," Journal of Risk and Financial Management 15 (6): 2022	2022	He studies the effect of CON using nine measures of hospital quality: 1) Death among surgical inpatients with serious treatable complications 2) Postoperative pulmonary embolism or deep vein thrombosis 3) Percent of patients giving their hospital a 9 or 10 overall rating 4) Pneumonia readmission rate 5) Pneumonia mortality rate 6) Heart failure readmission rate 7) Heart failure mortality rate 8) Heart attack readmission rate 9) Heart attack mortality rate Hospitals in CON states performed worse than those in non-CON states in eight of the nine categories, the exception being postoperative pulmonary embolism.
Stratmann, Thomas, and Jacob Russ, "Do Certificate-of-Need Laws Increase Indigent Care?," Working Paper (Arlington, VA: Mercatus Center at George Mason University, July 2014), http://mercatus.org/sites/default/files/Stratmann-Certificate-of-Need.pdf.	2014	They study the effects of CON on the supply of services and provision of services to indigent populations. They find: 1) CON programs are associated with 99 fewer hospital beds per 100,000 people 2) Bed-specific CONs are associated with 131 fewer beds per 100,000 people 3) There are 4.7 fewer beds per 100,000 persons for each additional service covered by CON 4) CON programs reduce the number of hospitals with MRI machines by one to two hospitals per 500,000 people 5) CON programs that require charitable care are uncorrelated with uncompensated care.
Taylor, Donald H. et al., "What Length of Hospice Use Maximizes Reduction in Medical Expenditures near Death in the US Medicare Program?," Social Science & Medicine (1982) 65, no. 7 (October 2007): 1466–78,	2007	Hospices are associated with savings of about $2,309 per user. Conover and Bailey use this to figure that "each hospice foregone in a market area represents $230,000 in potential annual savings lost."
Teske, Paul and Richard Chard, "Hospital Certificates-of-Need," in Regulation in the States, ed. Paul Teske (Washington, D.C.: Brookings Institution, 2004), 125–32.	2004	This study examines several political factors to determine the likelihood of a state retaining CON regulation. They find that the following factors are associated with CON regulation: 1) Democrats in upper and lower houses, 2) Higher hospital costs, 3) More affluent and better-educated citizens, 4) Fewer physicians 5) A variable measuring hospital interests: the number of hospital industry–related interest groups active in a particular state multiplied by their average political action committee spending: This was found to be significantly associated with retention of CON, but legislative party makeup is more important.

Paper	Year	Summary
Vaughan Sarrazin, Mary S., Levent Bayman, and Peter Cram, "Trends during 1993-2004 in the Availability and Use of Revascularization after Acute Myocardial Infarction in Markets Affected by Certificate of Need Regulations," Medical Care Research and Review: MCRR 67, no. 2 (April 2010): 213–31, https://doi.org/10.1177/1077558709346565.	2010	In a study design that exploits the fact that some markets cross boundaries between CON and non-CON states, they find: 1) A greater increase in coronary artery bypass graft surgery programs in states that reduced CON regulation, and 2) No change in percutaneous coronary intervention (PCI) programs in states that reduced CON.
Vaughan-Sarrazin, Mary S. et al., "Mortality in Medicare Beneficiaries Following Coronary Artery Bypass Graft Surgery in States with and without Certificate of Need Regulation," JAMA 288, no. 15 (October 16, 2002): 1859–66.	2002	They assess the effect of CON on coronary artery bypass graft (CABG) surgery, finding: 1) Mean annual hospital volume is lower in states without CON. 2) More patients undergo CABG surgery in low-volume hospitals in states without CON, and 3) Mortality following CABG is higher in states without CON.
Wu, Bingxiao et al., "Entry Regulation and the Effect of Public Reporting: Evidence from Home Health Compare," Health Economics 28, no. 4 (April 2019): 492–516.	2019	They assess the effect of CON regulation on several measures of quality in home health care, using a cross-border design to control for endogeneity. They find that CON is uniformly associated with worse outcomes including: 1) Patients perform worse on functional improvement measures (bathing, ambulating, transferring to bed, managing oral medication, and less pain interfering with activity) and 2) They are more likely to be admitted to the ER and 3) More likely to be admitted to an acute care hospital.
Yuce, Tarik K. et al., "Association of State Certificate of Need Regulation With Procedural Volume, Market Share, and Outcomes Among Medicare Beneficiaries," JAMA 324, no. 20 (November 24, 2020): 2058, https://doi.org/10.1001/jama.2020.21115.	2020	The assess the effect of CON on measures of volume and of quality. They found: 1) No significant difference between CON and non-CON states in county-level procedures per 10,000 persons, 2) No significant difference between CON and non-CON states for hospital procedural volume, 3) No difference in hospital market share, 4) No difference in risk-adjusted 30-day postoperative mortality, 5) No difference in surgical cite infection, and 6) No difference in readmission
Zhang, Lei, "Uncompensated Care Provision and the Economic Behavior of Hospitals: The Influence of the Regulatory Environment" (Ph.D. Dissertation, Atlanta, Georgia, Georgia State University, 2008), http://scholarworks.gsu.edu/pmap_diss/19.	2008	He examined the effect of three regulatory policies—CON laws, uncompensated care pools, and community benefit requirement laws. CON is associated with small increases in uninsured admissions, though the results were small (0.07%) and not statistically significant when he attempted to control for endogeneity. Furthermore, he found that in the presence of all three policies, the number of uninsured admissions by nonprofit hospitals fell.
Ziino, Chason, Abiram Bala, and Ivan Cheng, "Does ACDF Utilization and Reimbursement Change Based on Certificate of Need Status?," Clinical Spine Surgery 33, no. 3 (April 2020): E92.	2020	The paper looks at reimbursements for spinal surgery in CON and non-CON states, finding that reimbursements fell the most in non-CON outpatient settings (-11 percent compound annual growth) in non-CON states.
Ziino, Chason, Abiram Bala, and Ivan Cheng, "Utilization and Reimbursement Trends Based on Certificate of Need in Single-Level Cervical Discectomy," The Journal of the American Academy of Orthopaedic Surgeons 29, no. 10 (May 15, 2021): e518–22, https://doi.org/10.5435/JAAOS-D-19-00224.	2021	They studied inpatient cervical discectomy in CON and non-CON states in inpatient and outpatient setting. It appears that they did not use any controls, however. Regarding reimbursements, they find: 1) In the inpatient setting, reimbursement was lower in non-CON states ($1,128.40) than in the CON states ($1,223.56). But reimbursements in the CON states were falling faster over time. 2) In the outpatient setting reimbursement was higher in Non-CON states ($4,237.01) than in CON states ($3,859.31) and reimbursements were growing in the non-CON states but falling in the CON states. Regarding access: 3) In the inpatient setting, there were more patients in the CON setting than in the non-CON setting (657 compared with 231) and utilization of the procedure was growing faster in CON than in non-CON states but this does not appear to control for the larger population of CON states than non-CON states. 4) Similarly, in the outpatient setting, there were more patients in the CON setting than in the non-CON setting (435 compared with 257) and utilization of the procedure was growing faster in CON than in non-CON states but again this does not appear to control for the larger population of CON states than non-CON states.
Zinn, J. S., "Market Competition and the Quality of Nursing Home Care," Journal of Health Politics, Policy and Law 19, no. 3 (1994): 555–82.	1994	She examined the determinants of nursing home quality. One of her explanatory variables was nursing home construction moratoria. She found these to be associated with lower RN staffing ratios and greater use of physical restraint.

ASC FACILITY*	DATE REPORTED	CITY	COUNTY	URBAN/ RURAL COUNTY
University of Florida Health System	October 2020	Gainesville	Alachua	Urban
Panama City Beach Medical Campus	August 2022	Panama City	Bay	Urban
Muve Health Total Joint Hyperspecialty Center	April 2021	Pompano Beach	Broward	Urban
IVF Florida Reproductive Associates Medical A Building	August 2021	Margate	Broward	Urban
South Florida Robotic Surgery	October 2021	Pompano Beach	Broward	Urban
Borland Groover Clinic Surgery Center and Medical Office	March 2022	Orange Park	Clay	Urban
Kingsley Endoscopy	May 2021	Orange Park	Clay	Urban
Baptist Clay Medical Center	January 2020	Fleming Island	Clay	Urban
Naples Suncoast Surgery Center	May 2021	Naples	Collier	Urban
Frantz Eyecare	July 2020	Naples	Collier	Urban
Jax Spine & Pain Centers	April 2022	Jacksonville	Duval	Urban
Jax Spine & Pain Centers	February 2021	Jacksonville	Duval	Urban
Dental ASC	June 2021	Jacksonville	Duval	Urban
Point Meadows Ambulatory Surgery Center	July 2021	Jacksonville	Duval	Urban
First Coast Surgery Center	June 2020	Jacksonville	Duval	Urban
AdventHealth Outpatient Surgery Center	May 2021	Palm Coast	Flagler	Urban
Florida Springs Surgery Center	October 2020	Spring Hill	Hernando	Urban
Carling Adrenal Center	June 2021	Tampa	Hillsborough	Urban
Hospital for Endocrine Surgery	July 2021	Tampa	Hillsborough	Urban
South Florida Baptist Hospital Plant City	October 2021	Plant City	Hillsborough	Urban
Sun City ASC	January 2020	Ruskin	Hillsborough	Urban
Brandon Surgery Center	May 2020	Brandon	Hillsborough	Urban
Tampa General Hospital	July 2020	Tampa	Hillsborough	Urban
Jackson Hospital	September 2021	Marianna	Jackson	Rural
Clermont Health Park ASC	October 2022	Clermont	Lake	Urban
South Lake Hospital Center for Specialty Surgery	October 2020	Clermont	Lake	Urban
Hope Preserve	May 2022	Fort Myers	Lee	Urban
Florida Heart Associates Renovation and ASC Expansion	March 2022	Fort Myers	Lee	Urban
Shipley Cardiothoracic Center	January 2022	Fort Myers	Lee	Urban
Florida Heart Associates	April 2021	Fort Myers	Lee	Urban
Lee Health Outpatient Physician and Surgical Center	September 2021	Cape Coral	Lee	Urban
The Total Joint Orthopedic Surgical Center	September 2021	Fort Myers	Lee	Urban
Performance Health Surgery Center	August 2019	Ft. Myers	Lee	Urban

ASC FACILITY*	DATE REPORTED	CITY	COUNTY	URBAN/ RURAL COUNTY
Coastal Orthopedics Medical Center	May 2022	Brandenton	Manatee	Urban
Gentera Center for Precision Medicine Plastic Surgery Center	October 2021	Coral Gables	Miami-Dade	Urban
UHealth at Downtown Doral	November 2019	Doral	Miami-Dade	Urban
Health Jewett Orthopedic Institute	January 2021	Orlando	Orange	Urban
Lakeland Highlands Hospital	November 2021	Orlando	Orange	Urban
Summerport Surgery Center	February 2020	Windermere	Orange	Urban
Orlando Health Jewett Orthopedic Hospital	November 2020	Orlando	Orange	Urban
Kissimmee Professional Plaza, LLC. ASC	June 2022	Kissimmee	Osceola	Urban
Kissimmee Medical Office Complex	June 2022	Kissimmee	Osceola	Urban
Endo-Surgical Center of Kissimmee	March 2022	Kissimmee	Osceola	Urban
Jupiter Medical Center	March 2021	Jupiter	Palm Beach	Urban
Boca Raton Regional Hospital Ambulatory Surgery Center	April 2021	Boca Raton	Palm Beach	Urban
Boca Raton Regional Hospital	June 2020	Boca Raton	Palm Beach	Urban
Boca Raton Regional Hospital	July 2020	Boca Raton	Palm Beach	Urban
Hospital for Special Surgery	July 2020	West Palm Beach	Palm Beach	Urban
Comprehensive Outpatient Joint & Spine Institute	June 2021	Odessa	Pasco County	Urban
Tampa Bay Joint & Spine Surgery Center	March 2021	Clearwater	Pinellas	Urban
Advanced Surgical Care of Clearwater	August 2020	Clearwater	Pinellas	Urban
Poinciana Medical Center	March 2022	Haines City	Polk	Urban
Andrews Ambulatory Surgery	November 2021	Gulf Breeze	Santa Rosa	Urban
CenterPoint	August 2019	Sarasota	Sarasota	Urban
Advent Health ASC	February 2022	Lake Mary	Seminole	Urban
Flagler Health+ Durbin Park	January 2022	St. Augustine	St. Johns	Urban
St. Augustine Endoscopy Center	January 2022	St. Augustine	St. Johns	Urban
St. Augustine Endoscopy Center	April 2021	St. Augustine	St. Johns	Urban
Flagler Health+ Durbin Park Health Village	June 2021	St. Augustine	St. Johns	Urban
Borland Groover	October 2020	St. Augustine	St. John's	Urban
Florida Coast Medical and Surgical Center	June 2022	Palm Beach	St. Lucie	Urban
Center for Advanced Healthcare	May 2020	The Villages	Sumter	Urban
Surgical Center of Central Florida	September 2019	Wildwood	Sumter	Urban
The Center for Advanced Healthcare at Brownwood	November 2019	The Villages	Sumter	Urban

**Or tentative name and affiliation reported*

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