

Market Size and Trade in Medical Services

Based on BFI Working Paper 2023-37, “Market Size and Trade in Medical Services,” by Jonathan I. Dingel, Chicago Booth; Joshua D. Gottlieb, University of Chicago; Maya Lozinski, University of Chicago; and Pauline Mourou, Chicago Booth

Larger regions are more efficient at producing medical services. This leaves policymakers with a trade-off between concentrating medical care production in more efficient large regions and promoting healthcare access in less efficient small regions. Production and travel subsidies can both increase access to healthcare but impact patients, providers, and neighboring regions differently.

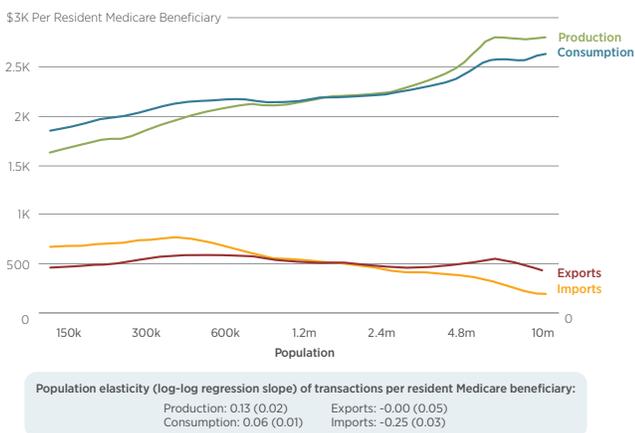
Rural Americans have worse health outcomes, yet doctors are disproportionately concentrated in large cities. For many, this long-observed phenomenon indicates that doctors are not distributed appropriately across space. Many healthcare policies have sought to “correct” this distribution. However, this new research

shows more at play when considering the optimal delivery of medical services. A more complete evaluation considers two economic mechanisms crucial to understanding spatial patterns of US healthcare delivery: economies of scale and trade costs.

When the authors discuss economies of scale in medical services delivery, they are referring to classic ideas in urban economics about the benefits of geographically concentrated production. If many hospitals and doctors are located near each other, they can see more patients, specialize, and gain experience that benefits patients. They can disseminate information on the latest innovations and share the cost of specialized equipment. In other words, this spatial concentration has benefits—and especially for the people who live nearby and can easily access this high-quality care.

What about those living in rural areas, far removed from large medical centers? One way to get these patients healthcare is to distribute medical service production, including doctors, to those rural areas and forgo the benefits of scale. This is natural for time-sensitive emergency care. However, what about most other types of health care, including specialty treatments, that are scheduled in advance? Do we need a hospital with specialty practitioners in every town? Or is it better for patients to travel to big cities to

Figure 1 • Production and Consumption of Medical Care Across Regions



Note: This figure shows production, consumption, and trade per capita of Medicare services across hospital referral regions (HRRs) of different sizes, all smoothed via local averages. The dollar value of physician services excluding emergency room care is computed using national average prices. The green line shows production of medical care per Medicare beneficiary residing in the HRR of production. The blue line shows consumption of medical care per Medicare beneficiary residing in the HRR of consumption. The difference between production and consumption is net trade: larger markets are net exporters and smaller markets are net importers. The red line shows interregional “exports” of medical care and the orange line shows interregional “imports” of medical care, again per Medicare beneficiary.

see more experienced, specialized providers? If patients can travel, medical care faces a proximity-concentration trade-off like other tradable industries. In other words, patients who travel for medical services produced elsewhere incur travel costs, but they also benefit from economies of scale.

The authors assess these issues by employing Medicare claims data to quantify the roles of increasing returns to scale and trade costs in medical services. They show that larger markets produce higher quality medical services. They also show that “imported” medical procedures—defined as a patient’s consumption of a service produced by a medical provider in a different region—constitute over one-fifth of US healthcare consumption. Patients in smaller markets are the largest consumers of imported healthcare. It follows that “exports” of medical services—including specialized care—are disproportionately produced in large markets. These patterns reflect economies of scale: larger regions produce higher-quality services because they serve more patients.

The authors employ a rich dataset of millions of patient-provider interactions. They quantify how production subsidies and travel subsidies affect patients’ access to care and the quality produced in each region; the working paper describes these methods in detail. Their findings include the following:

- Production is more geographically concentrated in large markets than consumption. Since trade constitutes the difference between production and consumption, trade reduces geographic inequality in medical care access. A key implication is that common measures of healthcare production (e.g., doctors per capita) will overstate inequality in the healthcare people actually receive.
- In a theoretical model, local increasing returns to market scale can generate a home-market effect, i.e., exports of medical care rise as a region grows larger, even when prices are fixed. The authors’ model predicts that larger markets will become net exporters of medical services when local increasing returns to market scale are sufficiently strong.
- This phenomenon is borne out in the data. Local increasing returns to market scale are so strong that greater demand induces a larger increase in exports than imports. This makes larger markets net exporters of medical care

and means that healthcare can serve as an export base for large urban economies.

- Larger markets produce higher-quality services thanks to economies of scale. How do we know these services are higher quality? Patients are willing to travel more to get services in these regions, all else equal. In addition, patients’ willingness to travel (revealed preference) corresponds with other measures, like US News hospital rankings.¹
- A region’s quality rises considerably with the regional volume of production. While there could be many mechanisms driving this, the authors find that, in large regions, doctors are more specialized, procedures are performed by more experienced doctors, and more unique services are offered.

The authors emphasize differences between the markets for rare and common procedures. For example, compare patients with heart failure who have left ventricular assist devices (LVADs) implanted to augment cardiac function—a rare procedure—with those who have routine screening colonoscopies. Half of the patients receiving LVAD implants come from outside the surgeon’s region, but only 15 percent of routine screening colonoscopies are performed on patients outside their home region. Their analysis reveals the following about rare procedures:

- Trade and market size play a larger role for rare procedures: The imported share of consumption is 22% for common procedures and 35% for rare procedures.
- The home-market effect is substantially stronger for rare procedures: a larger residential population drives a greater increase in exports for rarer services.
- The geographic scope of the market for a medical procedure depends on its national scale: doctors performing rare procedures export their services across a broader geographic scope, sometimes serving patients who reside thousands of kilometers away. Rarer procedures are disproportionately produced and exported by large markets.

Next, the authors explore the trade-off created by putting providers proximate to patients, which also fragments the production of medical services. They find that reimbursement policies

¹[health.usnews.com/health-care/best-hospitals/articles/faq-how-and-why-we-rank-and-rate-hospitals](https://www.health.usnews.com/health-care/best-hospitals/articles/faq-how-and-why-we-rank-and-rate-hospitals)

vary in how they affect patients and providers. They also affect regions differently depending on their size and trade patterns. In particular:

- A nationwide increase in reimbursements generates the largest increases in local medical care quality in the smallest regions. However, these regions' patients experience the smallest increase in the value of market access because they consume less of their care locally.
- Reimbursement increases generate the highest return when spent in the largest cities.

But this finding comes with an important caveat: the higher-quality care available in larger markets may not benefit all patients equally. The authors show that:

- Socioeconomic status predicts how patients trade off travel costs and the benefits of scale. Patients residing in lower-income neighborhoods are less likely to travel farther for better medical care. This finding reveals that all patients do not benefit equally from local increasing returns to scale.

Bottom line for policymakers: Healthcare produced in large regions is higher quality. Policies to reallocate care to smaller regions may impact patients' access to healthcare in unexpected ways. Traditional production subsidies in small, underserved areas help healthcare producers (e.g., doctors) more than patients in those areas. Patient travel also plays a meaningful role in enabling access to higher-quality, more experienced, and specialized care. Policymakers should consider travel subsidies rather than only production subsidies to increase access to care for underserved patients.

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