

Discussion of “Physician Treatment Preference Formation and Diffusion: The Case of Specialty Referrals,” by Pany, Weinreb, McWilliams.

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 - Do resident physicians form the same treatment preferences as the senior physicians they work with/learn from during their residency training?

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- Outcome:
 - Similarity of referrals to specialist physicians between a resident physician and senior physicians
- Results:
 - Resident physicians have more similar referral patterns to teaching-focused senior physicians they work with than non-teaching-focused senior physicians they don't work with

The wider literature

- Regions vary in their treatment intensity

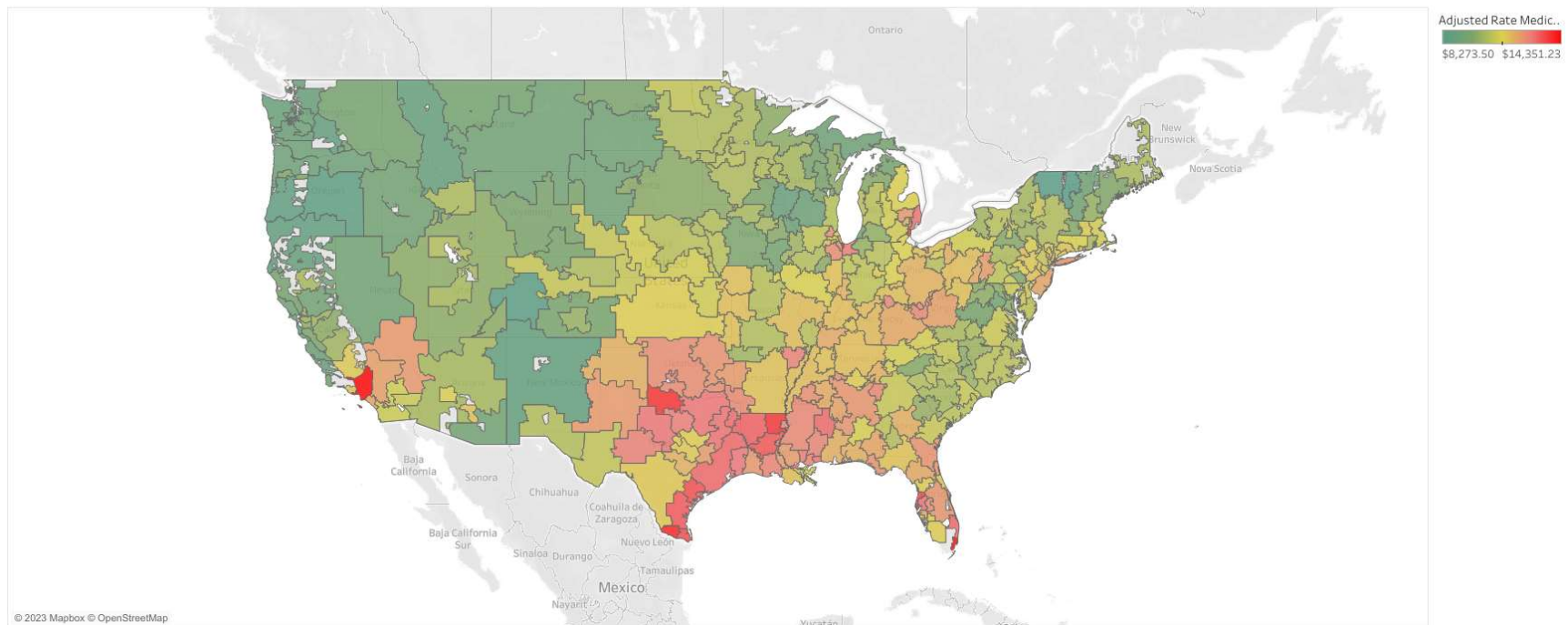
Annals of Internal Medicine

| ARTICLE

The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care

Elliott S. Fisher, MD, MPH; David E. Wennberg, MD, MPH; Thérèse A. Stukel, PhD; Daniel J. Gottlieb, MS; F.L. Lucas, PhD;
and Étoile L. Pinder, MS

Map: Price-Adjusted Total Medicare Reimbursements per Enrollee (Parts A and B), by HRR (2019)
(Price, Age, Sex, and Race adjusted)



The wider literature

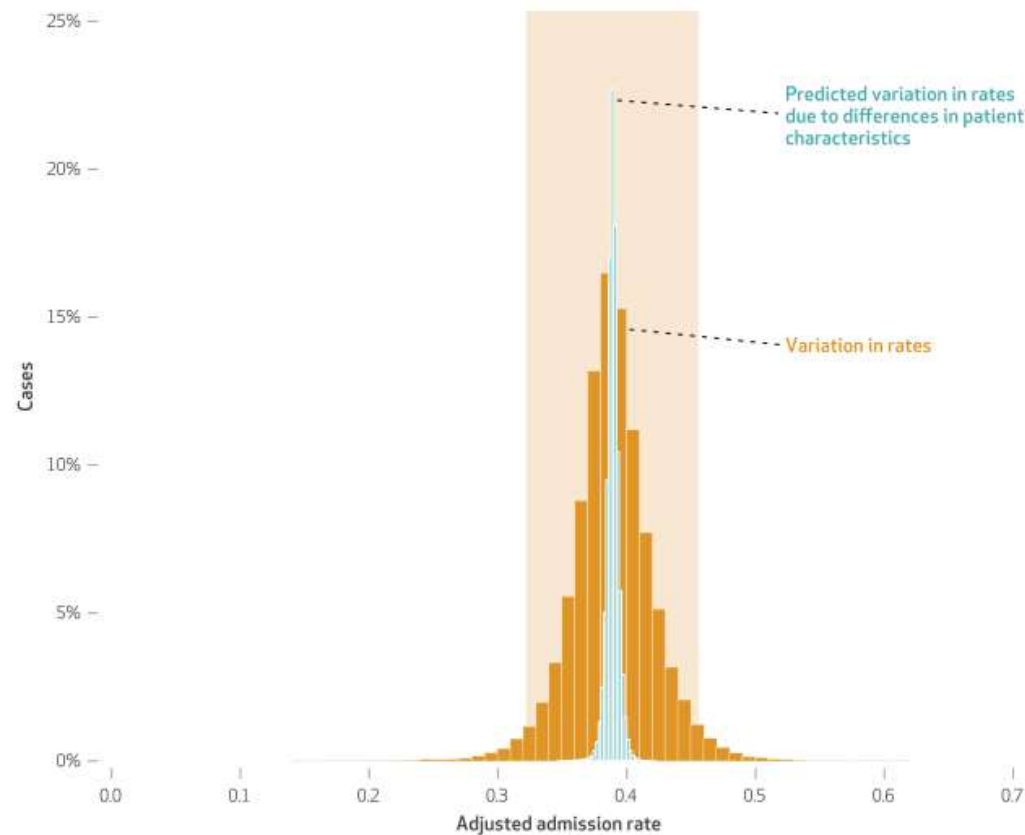
- Physicians vary in their practice styles

By Peter B. Smulowitz, A. James O'Malley, Lawrence Zaborski, J. Michael McWilliams, and Bruce E. Landon

Variation In Emergency Department Admission Rates Among Medicare Patients: Does The Physician Matter?

EXHIBIT 3

Distribution of physician-level variation in adjusted hospital admission rates for Medicare patients within hospitals, 2012-15



SOURCE Authors' analysis of Medicare claims using a mixed-effect linear regression model. **NOTE** The shaded area is between the tenth and ninetieth percentiles.

The wider literature

- Physicians vary in their practice styles

Opioid-Prescribing Patterns of Emergency Physicians and Risk of Long-Term Use

Michael L. Barnett, M.D., Andrew R. Olenski, B.S.,
and Anupam B. Jena, M.D., Ph.D.

ment, were similar in the two treatment groups. Within individual hospitals, rates of opioid prescribing varied widely between low-intensity and high-intensity prescribers (7.3% vs. 24.1%). Long-term opioid use was significantly higher among

The wider literature

- The contribution of residency training to this physician variation

The formation and evolution of physician treatment styles: An application to cesarean sections

Andrew J. Epstein^{a,*}, Sean Nicholson^b

A B S T R A C T

Small-area-variation studies have shown that physician treatment styles differ substantially both between and within markets, controlling for patient characteristics. Using data on the universe of deliveries in Florida and New York over a 15-year period, we examine why treatment styles differ across obstetricians at a point in time and why styles change over time. **We find that variation in c-section rates across physicians within a market is about twice as large as variation between markets. Surprisingly, residency programs explain no more than four percent of the variation in physicians' risk-adjusted c-section rates, even among newly trained physicians.** Although we find evidence that physicians learn from their peers, they do not substantially revise their prior beliefs regarding treatment due to the local exchange of information. Our results indicate that physicians are not likely to converge over time to a community standard; thus, within-market variation in treatment styles is likely to persist.

The wider literature

- The contribution of residency training (and other observable physician characteristics) to this physician variation

by where they trained as a resident. Likewise, observable physician characteristics, such as experience, gender, and race, account for between 1 and 2 percent of the variation in c-section rates. Nearly 30 percent of the variation in risk-adjusted c-section rates among all physicians is due to time-invariant, physician-specific factors separate from observable physician characteristics, residency training and region. The explanatory power of these factors is

Analysis of Physician Variation in Provision of Low-Value Services

Aaron L. Schwartz, MD, PhD; Anupam B. Jena, MD, PhD; Alan M. Zaslavsky, PhD; J. Michael McWilliams, MD, PhD

100 beneficiaries per year (eFigure 1 in the Supplement). Physician characteristics accounted for 4.6% of within-region variance and 1.8% of within-organization variance.

The wider literature

- Significant variation within the same residency

Influence and Information in Team Decisions:
Evidence from Medical Residency¹¹

By DAVID C. CHAN^{*}

Junior trainees before this mark show variation in total spending effects with a standard deviation of 5%, while senior trainees beginning their second year show variation in total spending effects with a standard deviation of 24%. Subsequent practice variation remains large to the end of training. Substantial practice variation exists across a whole range of decision types but is larger—both at baseline among junior trainees and even more so after the discontinuity for senior trainees—in domains with fewer clear rules and more discretion, such as diagnostic testing as opposed to medications.

The wider literature

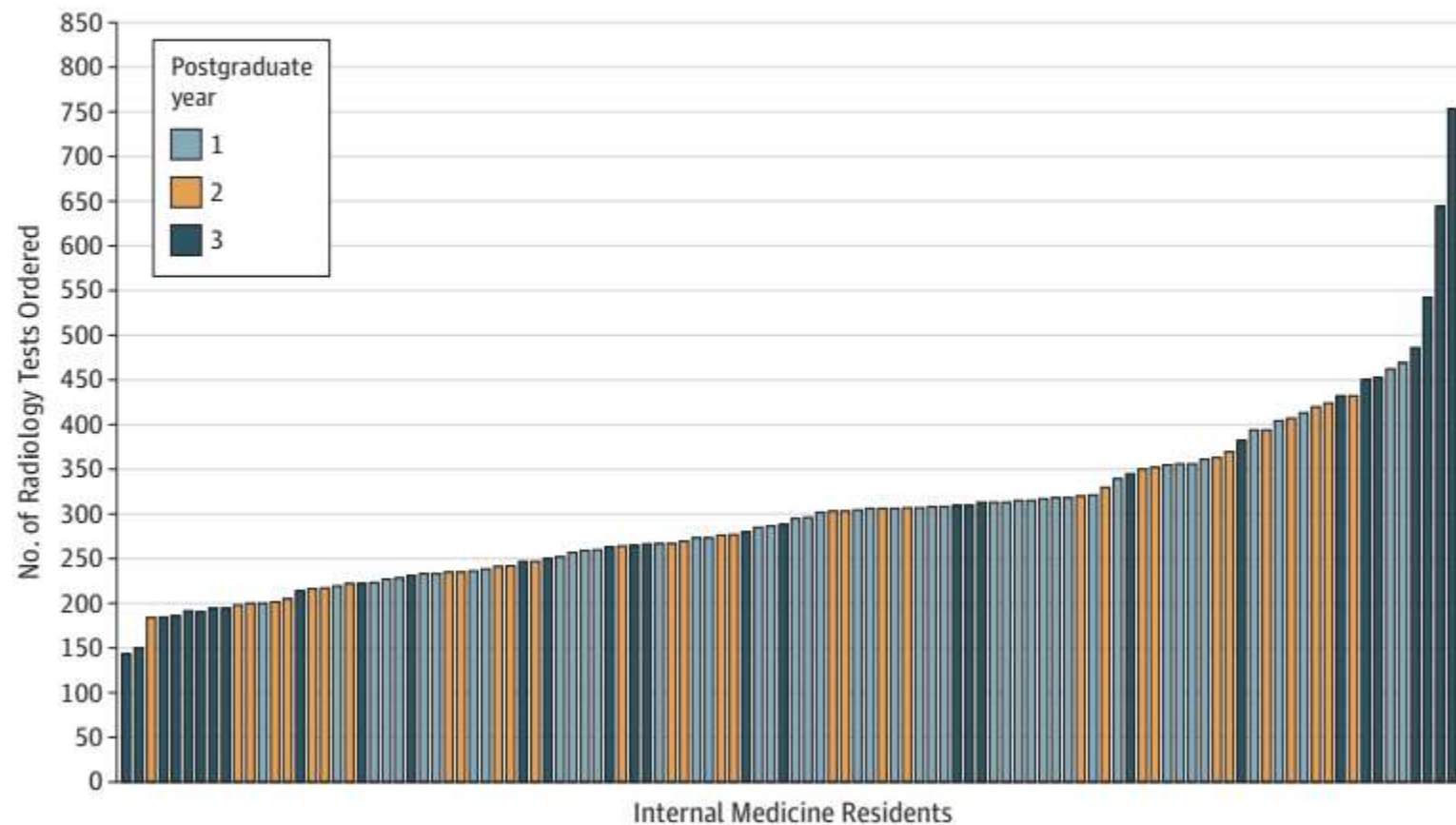
- Significant variation within the same residency

RESEARCH LETTER

LESS IS MORE

Analysis of Diagnostic Test Ordering Habits
Among Internal Medicine Residents

Figure 2. Total Number of Radiology Tests Ordered by Each Internal Medicine Resident



What I particularly liked (list not exhaustive)

- Ambitiously attacking a very important question
- Examines a setting critical during a physician's learning
- Using unique and rich electronic health record data

Suggestions for improvement

- Outcome is relatively narrow
 - Ideal (to me) would be clinical scenarios such as giving antibiotics for upper respiratory infections, imaging for back pain
 - More aggregated outcomes (given small sample size) might be:
 - (imputed) cost of visit (including tests)
 - Rate of lab testing
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- Outcome is hard to interpret
 - (consider Chan, Dickstein, Industry Input in Policy Making, QJE)

log(referral dissimilarity)	
effect, %	p-value
-24.7	<0.001
-39.4	<0.001
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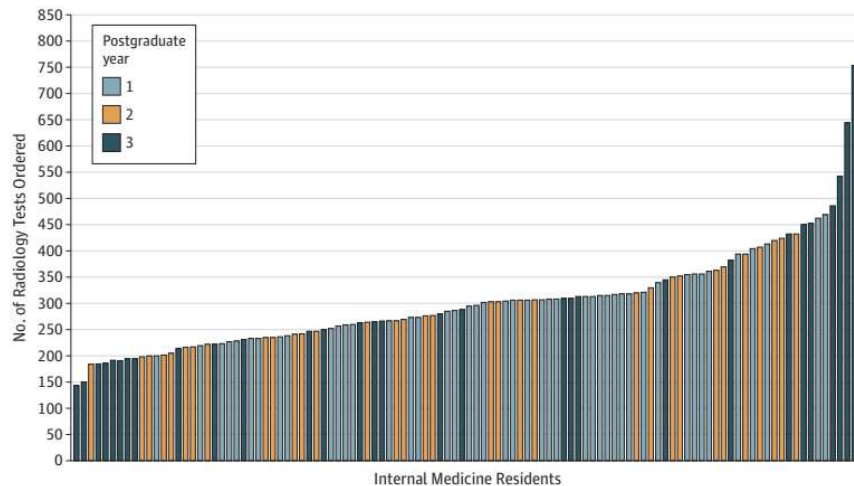
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- Why isn't there a dose-response?
- Consider collapsing to fewer categories (primary senior teaching physician, other senior physicians they work with, non-teaching senior physicians whom residents don't work with)
 - Might also try to conceptualize a continuous measure of percent of visits with a senior faculty

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Future paper idea(s)

Figure 2. Total Number of Radiology Tests Ordered by Each Internal Medicine Resident



- Using Medicare (or other) data, following resident physicians once they are practicing independently
- Compare care patterns during and after residency
- If P sees her own patients, compare care patterns of P to the care patterns of the Rs she works with (before and after residency). How much practice patterns/styles are imparted during residency? How much do they endure after residency? How much do the Rs differ from each other within the same P?