

# The Role of Primary Care in Health Care

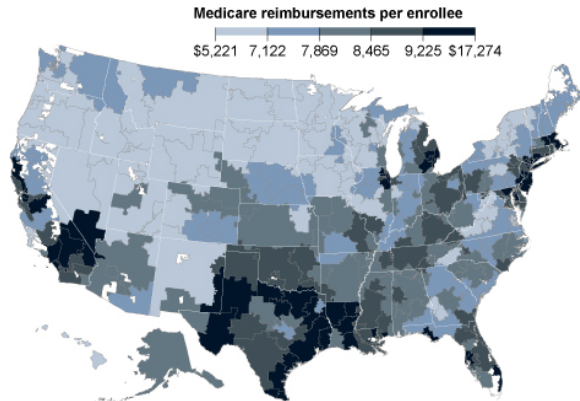
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WENNBERG INTERNATIONAL COLLABORATIVE

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# Motivation

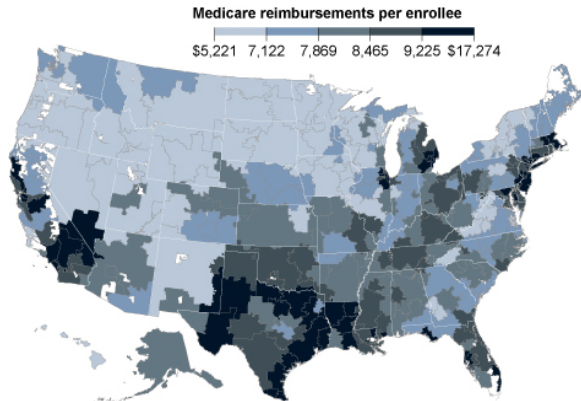
- Lots of variation in health spending – utilization is important driver
- Prior work suggests at least *some* of this variation is inefficient  
[Fisher et al. (2003)]
- How do we make McAllen, TX look like Grand Junction, CO? Should we?



**Source:** Dartmouth Atlas (via NYT)

# Motivation

- Patient health and physician practice patterns both important contributors to health care utilization  
[Cutler et al. (2019); Finkelstein et al. (2016); Molitor (2018)]
- Primary care physicians (PCPs) play a special role
  - Many in the US are enrolled in HMO-style plans where PCPs determine utilization through referrals
  - Even outside HMO context, physicians provide important information/steerage
  - PCPs also impact utilization directly and *potentially* through investments in health



Source: Dartmouth Atlas (via NYT)

# This paper

- **Question:** How important are PCPs and broader practice environment in driving utilization/spending?
  - When does higher spending commute value?
- **Unique data from Military Health System:**
  - Primary care physicians have a broad effect on utilization due to HMO context:
    - Direct effect
    - Referrals
    - Coordination
- **Leverage patient/physician moves** to generate quasi-random assignment to estimate physician (and place) contributions to spending *and* outcomes

# Contributions

- **Investment value of primary care**

Starfield et al. (2005); Currie and Zhang (2021); Basu et al. (2019); Chang et al. (2017)

- **Place-based variation in health spending**

Cooper et al. (2019); Cutler et al. (2019); Finkelstein et al. (2016, 2021); Molitor (2018); Fadlon and Van Parys (2020)

- **Provider decisions and spending in HMOs**

Cutler et al. (2000); Gaynor et al. (2004); Polsky and Nicholson (2004); Shumsky and Pinker (2003)

# Setting

- **The MHS**

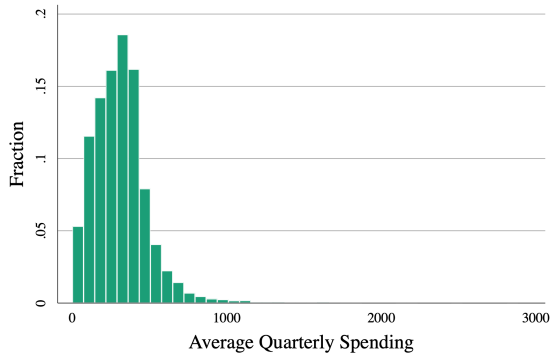
- HMO environment where PCPs determine downstream utilization via referrals
- MHS has similar geographic variation in utilization/spending  
[Bond and Schwab (2019)]

- **Data**

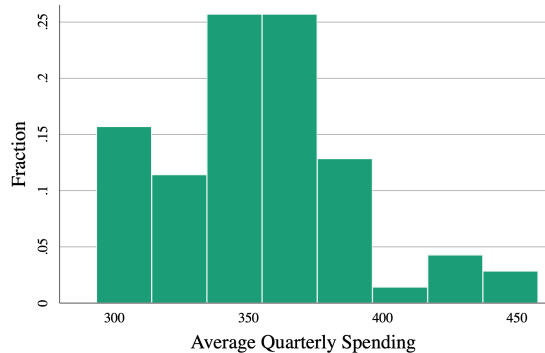
- **Estimating spending:** Medicare prices (Average = \$1,681/year)
- We examine **dependent movers**:
  - Not the reason for the move
  - Nonetheless required to move
- 344,602 unique beneficiaries
- 11,440 unique primary care providers

# Lots of variation in utilization across physicians and regions

Average Spending by PCP



Average Spending by Place



# Empirical Challenges

- In most settings, we expect strong sorting between patients and physicians
  - Potential selection issues if available physicians are those with lower quality
  - Both patients and providers are forced to move in the MHS due to operational needs of the military
- Physician behavior/decisions can impact later utilization outcomes (i.e. referrals, changes to health states). How do we attribute utilization to a physician?
  - MHS has a strict HMO model where the majority of downstream utilization is governed by PCP referral
  - Patients are quasi-randomly assigned to physicians when moves occur, and we can observe that assignment

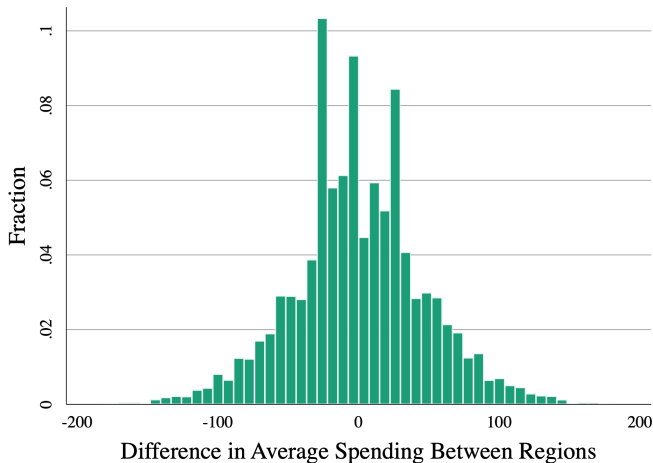


# Leveraging Movers

- 463,810 moves in our data
- Average move implies a change of \$36 per quarter (\$144 per year)
- We estimate:

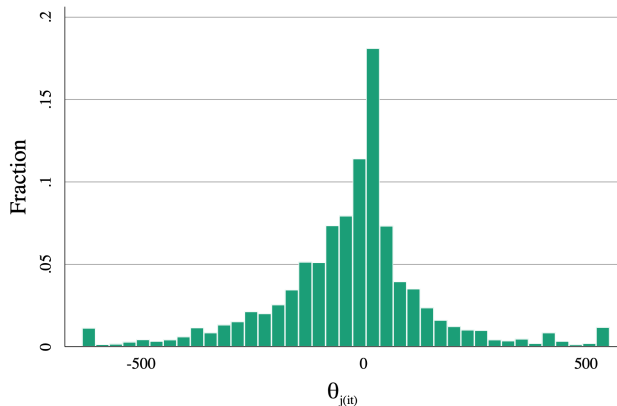
$$y_{it} = \theta_{j(it)} + \theta_{r(it)} + \theta_i + \epsilon_{it}$$

for patient  $i$   
quarter  $t$   
PCP  $j$   
region  $r$



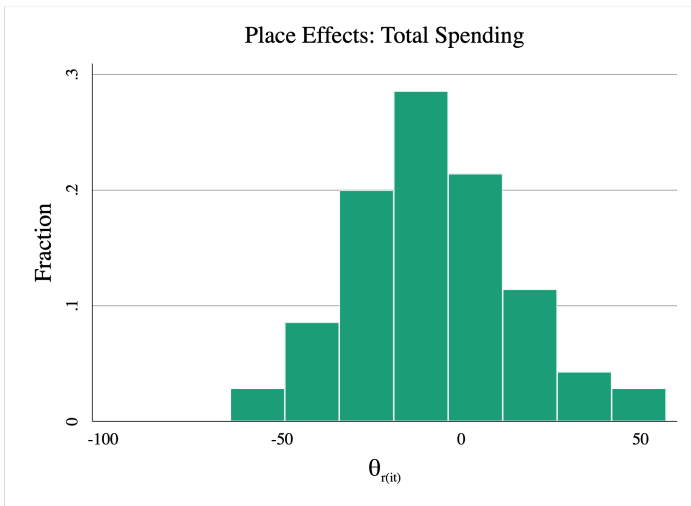
# Physicians vary considerably in utilization outcomes, even after controlling for patients/places

Physician Effects: Total Spending



- SD of physician effects is \$179
- Implies moving from 75th percentile to 25th percentile would reduce spending by \$149 (\$596/year)
- Future task: test sensitivity to adjusting for potential sampling error

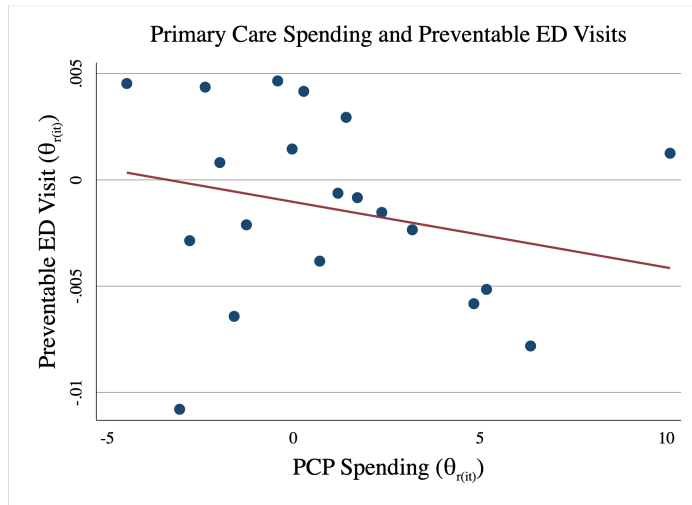
# Place effect is smaller but important



- SD of place effects is \$23
- Implies moving from 75th percentile to 25th percentile would reduce spending by \$27 (\$108/year)

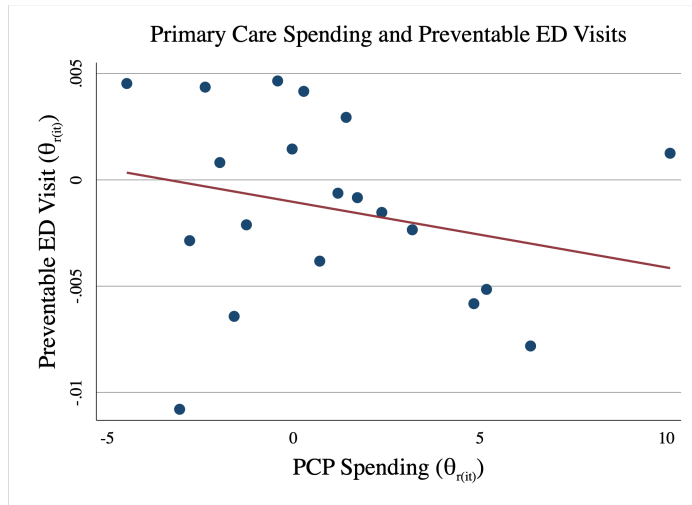
# Do higher utilization places achieve better outcomes?

- We expect that PCPs could have an impact on future health states (preventative medicine)
- For now, focus on “preventable” ED visits, which are likely to materialize within a short time window



# Do higher utilization places achieve better outcomes?

- Regions with more PCP spending see fewer preventable ED visits
- \$20 per person per quarter lowers ED probability by about 1pp



# Discussion

- Findings:
  1. Lots of variation in spending/utilization across providers and places
  2. PCP spending has investment value: higher PCP spending lowers preventative admissions
- Next steps:
  - Deeper analysis of PCP spending outcomes and practice patterns
  - Correlates of high/low spending places: composition of providers, availability of facilities, etc....
  - Demonstrating randomization/exogeneity
    - Descriptive evidence
    - Retiree comparisons

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