Trends in Utilization, Spending, and Quality for Chronically-Ill Privately-Insured Patients

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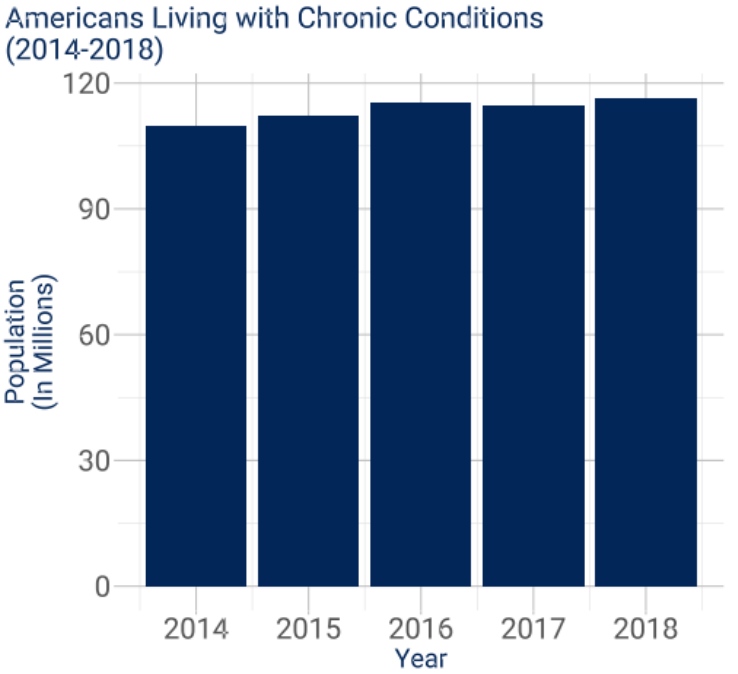
Motivation

- As of 2018, more than 50% of US population had been diagnosed with a chronic condition[1].
- These populations only receive a fraction of the recommended preventative they require[2] and these conditions drive the vast majority of health care costs[3].
- Health equity remains a concern in this setting[3]:
  - higher rates of pain
  - higher rates of mortality
  - higher rates of functional limits due to chronic conditions



IPUMS NHIS, Accessed: https://nhis.ipums.org/
Chronic Conditions include: hypertension, coronary heart disease, stroke, diabetes, cancer, arthritis, hepatitis, weak/failing kidneys, asthma, COPD, and chronic bronchitis.

[1] Boersma P, Black LI, Ward BW. Prevalence of Multiple Chronic Conditions Among US Adults, 2018. Prev Chronic Dis 2020;17:200130. DOI: http://dx.doi.org/10.5888/pcd17.200130

[2] McGlynn EA, Asch SM, Adams J, et al. The quality of health care delivered to adults in the United States. New England Journal of Medicine, (2003) 348:2635-264.

[3] Centers for Disease Control and Prevention. The Power to Prevent, The Call to Control (2009)

Our Proposal

Aims (2013-2021):

- Investigate trends in use of care, cost of care, and intermediate health outcomes for chronically-ill populations in CT.
  - For example: EDAC[4] and procedure-specific readmission rates[5].
- Estimate the relationship between use of care, cost of care, and intermediate health outcomes for chronically-ill populations in CT.
- Explore whether disparities exist in these trends or relationships across demographics (e.g., race).

Value:

- Lack of recent analysis in trends for chronically-ill populations.
- Push forward our understanding of disparities for chronically-ill populations.
- Offer insight into shaping care for chronically-ill populations across social determinants.

[4] https://qualitynet.cms.gov/inpatient/measures/edac

[5] https://qualitynet.cms.gov/inpatient/measures/readmission

Our Methods

- Outcomes
  - We'll create high/low-value care metrics as defined by NCQA HEDIS specifications.
  - We'll examine hospitalization metrics as defined by CMS.
- Covariates/populations
  - We'll use APCD to identify race, gender, county, employment sector, poverty-level, and chronic conditions to identify sub-populations.
- Statistical Analysis
  - We'll use multiple regression techniques and risk-adjustment to understand variation in care.

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Our Team

- A wide variety of interdisciplinary experts in health policy, health economics, social determinants, programmatic design, medicine, and data science, with a track record of success in this work.
    - Dr. Chima Ndumele (PI), an Associate Professor of Health Policy, has conducted several studies on provision of services and the relationships between social determinants, health care, and health. His primary focuses include delivery systems in improving health care access and outcomes for low-income populations.
    - Dr. Jacob Wallace, an Assistant Professor of Health Policy, has conducted several studies on how provider networks and the existence of public options impact health care access and outcomes using novel administrative claims data.

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Potential Data Limitations

- Date of care
  - Our understanding is claim dates are masked to a monthly-level, while not ideal this will still allow most quality metrics.
- Diagnosis codes
  - Our understanding is diagnosis codes switch from ICD-9s to ICD-10s, we've crosswalked these before and don't expect to have issues.
- Sub-populations
  - Our understanding is income and geography are aggregated to a poverty-line binary, and county. These levels of aggregation will offer valuable insight, despite lacking the detail of zip-level or annual income measures.

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Data Security

- Storage system
  - Physical files will be secured by Dr. Chima Ndumele.
  - Yale Information Technology Services (ITS) provides our team with a secure server in a secure data center that is consistent with HIPAA policies.
- Who has access
  - Dr. Chima Ndumele
  - Matthew Lavallee
  - Both binded by Yale's Appropriate Use Policy[6].
- Changes
  - You'll be notified about changes to the team or who has data access by Dr. Chima Ndumele (PI).

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[6] Yale Policy 1607, see, http://policy.yale.edu/policies

Questions

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