USING SDOH DATA IN RATE SETTING: *MASSHEALTH RISK ADJUSTMENT MODEL*

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How did this work come about?

- About me: Developer of models CMS uses to make risk-adjusted capitation payments for Medicare Advantage
  - Founded DxCG, Inc. (now Cotiviti), a predictive modeling company
- Commonwealth Medicine (founded 1983) - Public service consulting & operations division of UMass Medical School
  - Mission: *To create solutions that improve health and well-being, focused on those served by public programs.*
- SUPLN – State-University Partnership Learning Network at AcademyHealth
  - *Collaboratively works to support evidence-based state health policy and practice with a focus on transforming Medicaid-based healthcare*

MassHealth models to incorporate SDoH and medical risk factors

- To predict total cost of care: for payments to Accountable Care Organizations (ACOs)

- For other outcomes: E.g., Long-term services and supports (LTSS) costs (also from functional status) for nursing home-certifiable seniors

- Risk-adjusted quality measures for ED utilization: E.g., ED visit rates among people with SMI/SUD

ACO payment model predicting total cost of care

- MassHealth (MA Medicaid and CHIP) wanted a "total cost of care" model to set rates for managed care and accountable care organizations (MCOs, later ACOs)

- MassHealth had been using a claims-based medical-risk model (DxCG) for payment

- Goal: Refine the model by adding predictors
  - Especially social determinants of health (SDoH)

MassHealth ACO payment model

- Age-sex categories
- DxCG Relative Risk Score (medical RRS)
- Disability categories
  - Dept. of Mental Health Client (DMH)
  - Dept. of Developmental Services Client (DDS)
  - Other Medicaid-entitled due to disability
- Housing issues
  - Unstable housing or homeless
  - Neighborhood stress level captured in Neighborhood Stress Score (NSS)

Neighborhood Stress Score (NSS)

- Measure of "economic stress" summarizing 7 census variables identified in a principal components analysis:
  - % families with income < 100% of FPL
  - % < 200% of FPL
  - % adults unemployed
  - % households receiving public assistance
  - % households with no car
  - % households with children and single parent
  - % age 25 or older w/o HS degree
- NSS is standardized (Mean = 0, SD = 1)

MassHealth populations in Nov 2018

MassHealth total enrollment ~ 1.8 million

- All costs - Covered by capitated payment
  N ~ 1.2 million, with ~ 870,000 in ACOs
- LTSS costs - Senior Care Options (SCO), dual-eligible, nursing homecertifiable
  N ~ 29,000
- ED use - Serious mental illness (SMI)/Substance use disorder (SUD)
  N ~ 150,000

Contributions of SDoH variables

- Total annualized medical cost, for ACOs/MCOs
  - Each 1 SD increment in NSS adds ~1%
  - Housing problems add ~10%
- LTSS costs, for SCOs
  - Housing problems add ~13%
  - Each 1 SD increment in NSS adds ~6%
- ED visit rates, for members with SMI and/or SUD
  - 18% of adults in this population have housing problems
  - Each 1 SD increment in NSS increases the rate ~10%
  - Housing problems add ~2% for each unit of medical risk – leading to higher payments for homeless people than for those who are unstably housed, but not homeless

Consequences of our work

- Increased attention to coding for homelessness
  - Prior prevalence = 0.68%
  - Most recent = 1.31% (nearly double, but still small)
- Some participants in the MA quality measurement improvement task force are calling for studies on how to address social needs, such as housing problems at a community level
- MA DSRIP waiver is setting up flexible service dollars for "health-related" housing and nutritional needs
  - The currently planned evaluation of these programs is limited

Summary thoughts

- It's hard to pay for SDOH investments within a 1-year time frame, and considering only health care dollars
- ROI is predicated on the idea that a health plan CAN save money on care, but short time frame and narrow scope is a heavy lift
- A state that spends $ to address social needs (housing, unemployment, criminal justice system) should be able to figure out how to spend money upstream to make people healthier, pool money from different programs, and ultimately have a healthier society that is spending less on health care
- Our work – Aims to quantify the fairly substantial cost in the health care sector alone that could be mitigated/reduced by addressing people's social needs

THANK YOU!
I LOOK FORWARD TO OUR DISCUSSION

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On behalf of the UMass Medical School research team and our MassHealth partners