Impact of Patient-Centered Medical Home on Staffing and Productivity in Community Health Centers

Jeongyoung Park, PhD
Xiaoli Wu, MS
Bianca Frogner, PhD
Patricia Pittman, PhD

1GWU Health Workforce Research Center; 2University of Washington Center for Health Workforce Studies

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Patient-Centered Medical Home

- The PCMHs put emphasis on improved access to primary care and an ongoing relationship with a primary care provider or team, with improved whole-person, comprehensive and coordinated care
- Increased investment in primary care to achieve the “Triple Aim”
Evidence on PCMH

• Growing in size and scope

• Evidence underscores
  – Reductions in health care costs and unnecessary utilization of services
  – Improvement in quality of care metrics, access to primary care, and patient or clinician satisfaction
Gaps in Evidence/Motivation

• Workforce transformation ("who does what" & "how") associated with PCMH adoption remains limited
• The relationship of PCMH adoption to practice productivity is unknown
• The work to date is exclusively focused on physician/group practices
Community Health Centers

- 1,278 grantees in 2014
- Federally funded safety-net organizations
- Provide comprehensive primary care to more than 22 million underserved population
PCMH in CHCs

• Federal and State Support
  – Patient-Centered Medical/Health Home Initiative (PCMHHI), HRSA, FY2010
  – Federally Qualified Health Center Advanced Primary Care Practice, CMMI
  – State Medicaid Payment Incentive

• Over 65% of CHCs, as of Dec 2015
Aims

• To examine staffing changes associated with PCMH adoption in CHCs
• To examine practice productivity changes associated with PCMH adoption in CHCs
Data Sources

- Uniform Data System, 2007-2013
- HRSA Roster of PCMHs under PCMHII
- GWU Readiness for Meaningful Use and Health Information Technology and PCMH Recognition Survey
- Area Health Resources File
- State NP Scope of Practice Law
Study Population

• 994 CHCs consistently in UDS, 2007-2013
  – 244 early PCMH adopters (prior to PCMHHI) excluded

• 750 CHCs identified
  – 450 PCMH adopters (through PCMHHI)
  – 300 non-adopters

• 693 CHCs included
  – 450 PCMH adopters (through PCMHHI)
  – 243 1 to 1 propensity-score matched non-adopters
Analytic Approach

• Difference-in-Differences (DD)

\[ Y_{it} = \alpha + \beta_1 PCM_{i} + \beta_2 Post_t + \beta_3 (PCMH*Post)_{it} + X_{it} \theta + \gamma_i + \lambda_t + \epsilon_{it} \]

- \( \beta_3 \) is a DD estimator
- CHC FE \((\gamma_i)\) and Year FE \((\lambda_t)\)
- Robust standard errors clustered at CHC-level
PCMH Adoption

• Model 1: PCMH adoption
  – (PCMH*Post)
  – An indicator of PCMH adoption in a given year

• Model 2: Years after PCMH adoption
  – (PCMH*Post_{1,2,3+})
  – Dummies to specify the years after PCMH adoption
  – Whether the treatment effect changes over time after treatment
Outcomes

• Staffing, FTEs
  – (1) Primary care physicians
  – (2) Advanced practice staff (NPs, PAs, CNMs)
  – (3) Nurses
  – (4) Other medical staff (MAs, NAs, QI/IT staff, etc.)
  – (5) Mental health and substance abuse service staff
  – (6) Enabling service staff (case manager, health educators)

• Productivity, # visits made by each type of staff
  – Except other medical staff
  – Medical visits (1)-(3) adjusted by case-mix complexity
Covariates

• Patient characteristics
  – Age, sex, race/ethnicity, insurance, limited English proficiency, poverty

• Practice characteristics
  – Size, grant$$, EHR adoption

• Other environmental characteristics
  – Number of physicians, NPs, PAs in the county
  – State laws governing NP scope of practice
Staffing Changes Associated with PCMH (Model 1)

- PCPs: -0.23 FTEs
- Advanced: 0.53 FTEs
- Nurses: 0.17 FTEs
- Other Medical: 1.23 FTEs
- MH/SA: 0.73 FTEs
- Enabling: 0.36 FTEs
- Total: 3.26 FTEs

*p<0.05, **p<0.01, ***p<0.001
Staffing Changes Associated with PCMH (Model 2)

***p<0.001, **p<0.01, *p<0.05
Productivity Changes Associated with PCMH (Model 1)

- **PCPs**: -1094
- **Advanced**: +810
- **Nurses**: +709
- **MH/SA**: +537
- **Enabling**: 951

Significance levels:
- ***p<0.001***
- **p<0.01***
- *p<0.05*
Productivity Changes Associated with PCMH (Model 2)

***p<0.001, **p<0.01, *p<0.05
Productivity Changes Associated with PCMH-Related Staffing Changes

• Regression of (total visits) on (PCMH*Post*6Staff)
  – Including other medical staff
  – Coef. on each interaction term represents marginal productivity of each staffing type associated with PCMH adoption

• We found marginal productivity increases associated with this staffing shift
  – (+) significant, advanced practice staff
  – (+) but not significant, other medical staff
Summary of Key Findings

• A growth in advanced practice staff, other medical staff, and enabling staff over time
• A decline in primary care physicians, but not statistically significant
• No significant changes/trends in either nurses or mental health/substance abuse service staff
• No significant increases in total visits, but we found marginal productivity increases associated with this staffing shift
Limitations

• Grantee-level analysis
  – Multiple sites, implementation is heterogeneous

• The UDS data do not differentiate what roles each type of staff play
  – “who does what” & “how” still unknown

• Our measure of productivity is narrowly defined
Implications

• Expansion of staff to non-physicians associated with PCMH adoption

• Policies are needed not only to support the increased supply of these professionals, but to ensure their optimal use within care team

• Close attention to their training is critical to ensuring the quality of services they provide
Questions?