An Integrated Care Pilot: Pediatric Expense Outcomes for the Collaborative Practice Model

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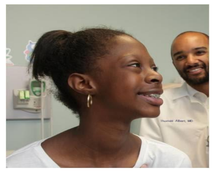
Background

- Mental health disorders are among the top five most costly conditions in children, at an estimated total annual expense of $247 billion (Soni et al. 2014, Perou et al. 2013)
- Despite the high cost, 80% of children in need of mental health services do not get them (Whitney et al. 2019)
- It is critical to determine which collaborative models of care are achieving cost-effective, positive mental health outcomes (Grimes et al. 2011)
- Previous case studies and meta-analyses have shown clinical benefits associated with collaborative practice models, but less is known regarding how integrated pediatric care affects spending (Asarnow et al. 2015, Grimes et al. 2018)







Aims

The aim of this study was to examine spending and service use patterns associated with an integrated care pilot, the "Collaborative Practice Model"(CPM) vs. those associated with usual care (UC) among youth in an urban safety net health system who were in the top 10% of behavioral health spending at baseline.

Methods

Collaborative Practice Model (CPM) for Pediatric Integrated Care

- The CPM clinical intervention consists of three major components:
  - **Integrated care**
    - Weekly on-site consultation to primary care pediatrics practice from a paired specialty team of a child psychiatrist and a family support specialist (FSS)
    - Pre-evaluation "huddles" with primary care to clarify the diagnostic questions and the reason for referral
    - Shared treatment planning with the family and PCP after the evaluation
  - **Peer-to-peer Parent Support**
    - Parents/Guardians were interviewed by the FSS as part of the team's evaluation, using a strengths-based approach to identify child and family needs
    - The FSS facilitated communication between families and providers to enhance engagement
    - The FSS offered outreach support, including home visits, if needed, to coach and encourage families to follow-up on the CPM team recommendations
  - **School and Community Linkages**
    - As needed, the CPM team coordinated with schools, courts, child welfare, natural supports and community resources to identify and foster an individualized plan of care for each family
- Children in the top 10% MH Expenses at baseline in the Intervention clinic were identified as the CPM Group if they received any CPM service, including FSS phone support alone
  - Those who received the CPM team evaluation are identified as getting the full CPM intervention.

http://childrenshealthinitiative.org/

Data and Analysis

Data Source and Study Sample:

- Data: Electronic health records (EHRs) linked with Medicaid managed care insurance claims
- Setting: Urban safety-net academic medical system providing care to over 25,000 children annually at multiple hospitals and community clinics
- Sample: Total N = 208 children, ages 3-17, who were in the top 10% of baseline mental health expenditures between 2011 and 2013.
  - One Intervention Clinic (Collaborative Practice Model): N=28
  - Seven Comparison Group Clinics (Usual Care): N=180

Outcome variables

- Total mental health treatment expenditures (ICD-9 codes between 290 and 319)
- Total physical health treatment expenditures (all other claims)
- Two observations per child: Annualized spending Pre-Post intervention period

Statistical methods

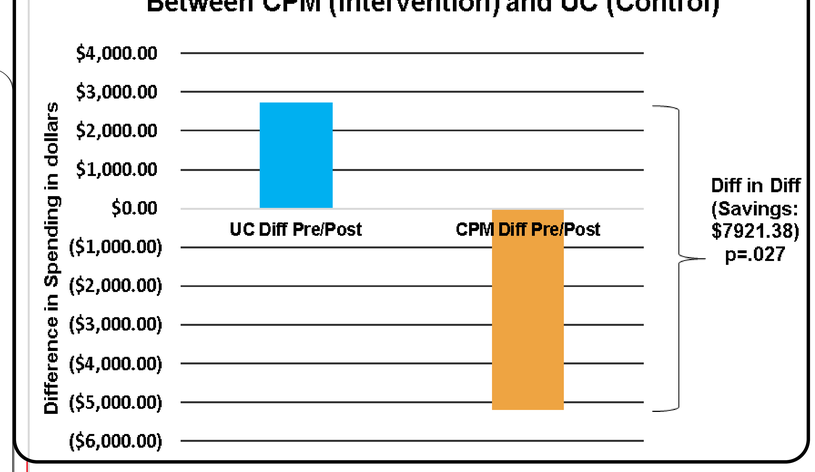
- Outcome modeling:
  - Multivariable generalized estimating equations (GEEs) adjusting for covariates. Accounts for within-subject clustering of pre- and post-intervention observations
- Difference-in-differences estimates:
  - Pre-post change in spending for CPM group compared to Pre-post change for UC group
  - Log link and gamma distribution
    - Best fit for the skewed distribution of the spending data.

Results: Any CPM Exposure

- **Difference in Difference for Physical Health: Any CPM Exposure**
  - For children with physical health claims and mental health claims, the difference in physical health expenditure changes between CPM treatment and UC from the pre– to post–intervention period was $2428.40 in savings.
- **Difference in Difference Mental Health Expenditures: Any CPM Exposure**
  - Mean annual mental health expenditures for children in the CPM group during the pre-enrollment period were $6199.87 vs. $2575.16 for those in the UC control group.
  - Post-treatment expenditures fell to $4428.91 for those in the CPM group and rose to $5309.45 in the UC group.
  - Assessing the difference in difference by treatment group and time period, this amounts to a $4505.25 in savings (p=0.099) 95% CI [-$9,857.32, $846.81].

Results: Full CPM Intervention

- **Difference in Difference Mental Health Expenditures: Full Intervention**
  - A subgroup analysis focused on children (n=16 of the 28 in the treatment group) that received the complete treatment intervention, i.e. a full CPM team evaluation.
  - Among this subgroup, the difference in difference between treatment and control from the pre– to post–intervention period was $7921.38 in savings (p=0.027, 95% CI [-$14,912.50, -$930.26])



Discussion

Despite shared challenges associated with social determinants of health (poverty, language barriers, race/ethnicity, trauma, social isolation) within the overall safety-net population, mean health care spending for the CPM youth declined, while mean health care spending for UC youth increased. Availability of the CPM paired specialty consultation team of child psychiatry and peer-to-peer family support staff one afternoon a week to identify needs and facilitate treatment engagement offers promise as a strategy for bending the cost-curve for high-need youth.

References

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