Provision of care to patients with serious mental illness and primary care reform in Ontario

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Primary care reform in Ontario

• Reforms in Ontario, 2000s: restructuring of primary care to:
  – increase access
  – improve quality
  – manage costs

• Resulted in 3 major primary care models:
  – Enhanced fee-for-service (FFS)
  – Capitation-based (CAP)
  – Team-based capitation (TBC) ➔ may include mental health workers (MHWs)
<table>
<thead>
<tr>
<th>New models</th>
<th>Care providers</th>
<th>Physician payment</th>
<th>Incentives</th>
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<tbody>
<tr>
<td><strong>Enhanced FFS</strong></td>
<td>Primary care physicians (PCPs) only</td>
<td>FFS claims paid in full</td>
<td>$2,000/ year available to PCPs for rostering 10 patients with schizophrenia or bipolar disorders (Guideto Physician Compensation, 2009)</td>
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<td><strong>CAP</strong></td>
<td>PCPs only</td>
<td>Based on patient age/sex + 10-15% shadow billing</td>
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<tr>
<td><strong>TBC + MHW</strong></td>
<td>PCPs + allied health incl. MHW</td>
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<tr>
<td><strong>TBC - MHW</strong></td>
<td>PCPs + allied health, but no MHW</td>
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Study objective & design

• **Objective:** To examine mental and general health service use by patients with diagnostic billing codes for psychotic or bipolar disorders in newly introduced primary care models in Ontario

• **Design:** Cross-sectional

• **Data:** Linked administrative data at Institute for Clinical Evaluative Sciences
The sample

• Adult Ontarians (18 years+):
  – Patients with diagnostic billing codes for psychotic or bipolar disorders (2007-9) → proxy for serious mental illness (SMI)
  – Rostered in enhanced FFS, CAP or TBC +/- MHW

→ \( n_{\text{total}} = 125,233 = 1.7\% \) of eligible Ontarians

– Among them mental and general service use was examined
Outcomes

- Mental health and general visits to PCPs
- Mental health visits to psychiatrists
- Mental health and general emergency department (ED) visits
- Mental health and general hospital stays
- Average lengths of stay for admissions
Unadjusted analyses

- **Descriptive:** patient characteristics across models (enhanced FFs, CAP, TBC+MHW, TBC-MHW)
- **Bivariate:** mental health & general service use across models
Adjusted analyses

• Negative binomial regression models
• Main predictor variable: Enhanced FFS (reference cat.) vs. CAP, and 2 TBC models
• Generalized estimating equations accounted for clustered data
• Patient covariates:
  - age & sex, diabetes, recent registrants (i.e., immigrants)
  - rurality, hypertension, presence of co-morbidities
  - income, congestive heart failure, expected use of health care resources
  - quintile, failure, resources
Results - Descriptive

- Among 125,233 SMI persons (our sample)
- Compared to CAP and the two TBC models, SMI people in enhanced FFS:
  - Were slightly older
  - Had higher resource use, diabetes and hypertension
  - Were more likely to be immigrants and to live in urban, lower income areas
Figure 1: Rate ratios and confidence limits for office visits by rostered SMI adults in capitation based models compared to enhanced FFS models.

- Mental health visit to a psychiatrist
- Blended capitation
- TBC‡ - with MHW
- TBC‡ - no MHW

- Mental health office visits to a PCP
- Blended capitation
- TBC‡ - with MHW
- TBC‡ - no MHW

- General office visits to a PCP
- Blended capitation
- TBC‡ - with MHW
- TBC‡ - no MHW

† PCP = Primary care physician
‡ MHW = mental health worker
TBC = team based capitation
Figure 2: Rate ratios and confidence limits for ED visits by rostered SMI adults in capitation based models compared to enhanced FFS models.
Figure 3a: Rate ratios and confidence limits for number of admissions by rostered SMI adults in capitation based models compared to enhanced FFS models
Figure 3b: Rate ratios and confidence limits for length of stay by rostered SMI adults in capitation based models compared to enhanced FFS models
Strengths

• **Summary:** Compared to enhanced FFS, SMI patients in CAP/TBC had fewer primary care visits, and more ED visits and hospitalizations

• This extends existing research because it:
  - Includes inpatient + outpatient service use
  - Picks up most PCP services in a single payer system
  - Helps build this research in Canada
Policy implications

Q: How can mental health care provision be aligned with health system goals?

- Attention to financial incentives under capitation
  
$\quad$ Adjust PCP remuneration for case-mix (beyond age, sex) to account for higher expected service use by SMI persons

$\quad$ Pay PCPs more for patients with some illnesses to offset some of the financial risk & increase patient attractiveness (Scott et al., 2012)

$\quad$ Process of care incentives in primary could improve quality of health care to SMI populations
  
  $\quad$ Process of care already exist for diabetes (Kiran et al., 2012)
References


THE END
Patients with serious mental illness

- Patients with serious mental illness (SMI):
  - Often have high needs (e.g., comorbid illnesses)
  - Can pose financial risk to PCPs due to unpredictable fluctuation in care costs (Dewa et al. 2001)

- Recent Ontario study: persons with mental illness are under-represented in rosters of capitation-based models (Steele et al. 2013)
• U.S. studies on people with SMI in capitation models have mixed results for outpatient care and associations with fewer mental health hospital admissions.

  – Many studies are dated and may have reflected unrepresentative samples in capitation plans.
Payment in new primary care models

• Enhanced FFS: claims are paid in full
• CAP & TBC: payments based on patient age/sex + 10-15% shadow billing
  – Not adjusted for case mix
• Up to $2000/ annum available to primary care physicians (PCPs) for rostering 10 patients with schizophrenia or bipolar disorders
  – Even so, a 2013 Ontario study: persons with mental illness are under-represented in rosters of capitation-based models (Steele et al. 2013)
ZOOMING IN to Figure 1: Rate ratios and confidence limits for PCP visits by rostered SMI adults in capitation based models compared to enhanced FFS models.