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

Leah S Steele, Anna Durbin, Elizabeth Lin, Alexander Kopp, Charles Victor, Julie Klein-Geltink, Brandon Zagorski, Richard Glazier

Funding: This study was supported by the Institute for Clinical Evaluative Sciences (ICES), which is funded by an annual grant from the Ontario Ministry of Health and Long-Term Care (MOHLTC).

The opinions, results, and conclusions reported in this paper are those of the authors and are independent from the funding sources. No endorsement by ICES or the Ontario MOHLTC is intended or should be inferred.

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)

Providers & payments in new models

New models	Care providers	Physician payment	Incentives
Enhanced FFS	Primary care physicians (PCPs) only	FFS claims paid in full	$2,000/ year available to PCPs for rostering 10 patients with schizophrenia or bipolar disorders (Guideto Physician Compensation, 2009)
CAP	PCPs only	Based on patient age/sex + 10-15% shadow billing	
TBC + MHW	PCPs + allied health incl. MHW		
TBC - MHW	PCPs + allied health, but no MHW		

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_{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

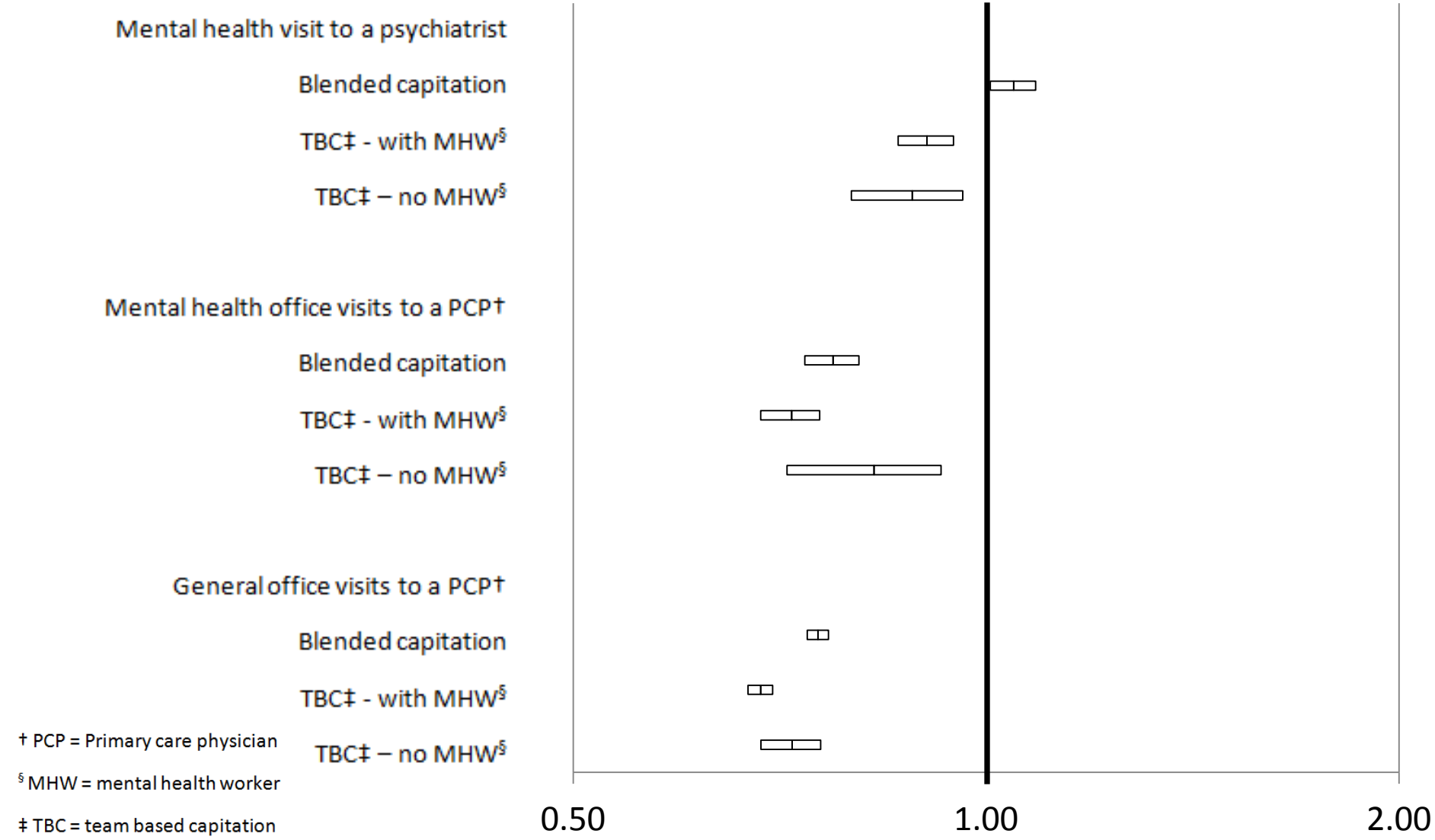
- Negative binomial regression models
- Main predictor variable: Enhanced FFS (reference cat.) vs. CAP, and 2 TBC models
- Generalized estimating equations accounted for clustered data
- Patient covariates:

age & sex	diabetes	recent registrants (i.e., immigrants)
rurality	hypertension	presence of co-morbidities
income quintile	congestive heart failure	expected use of health care 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



† 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

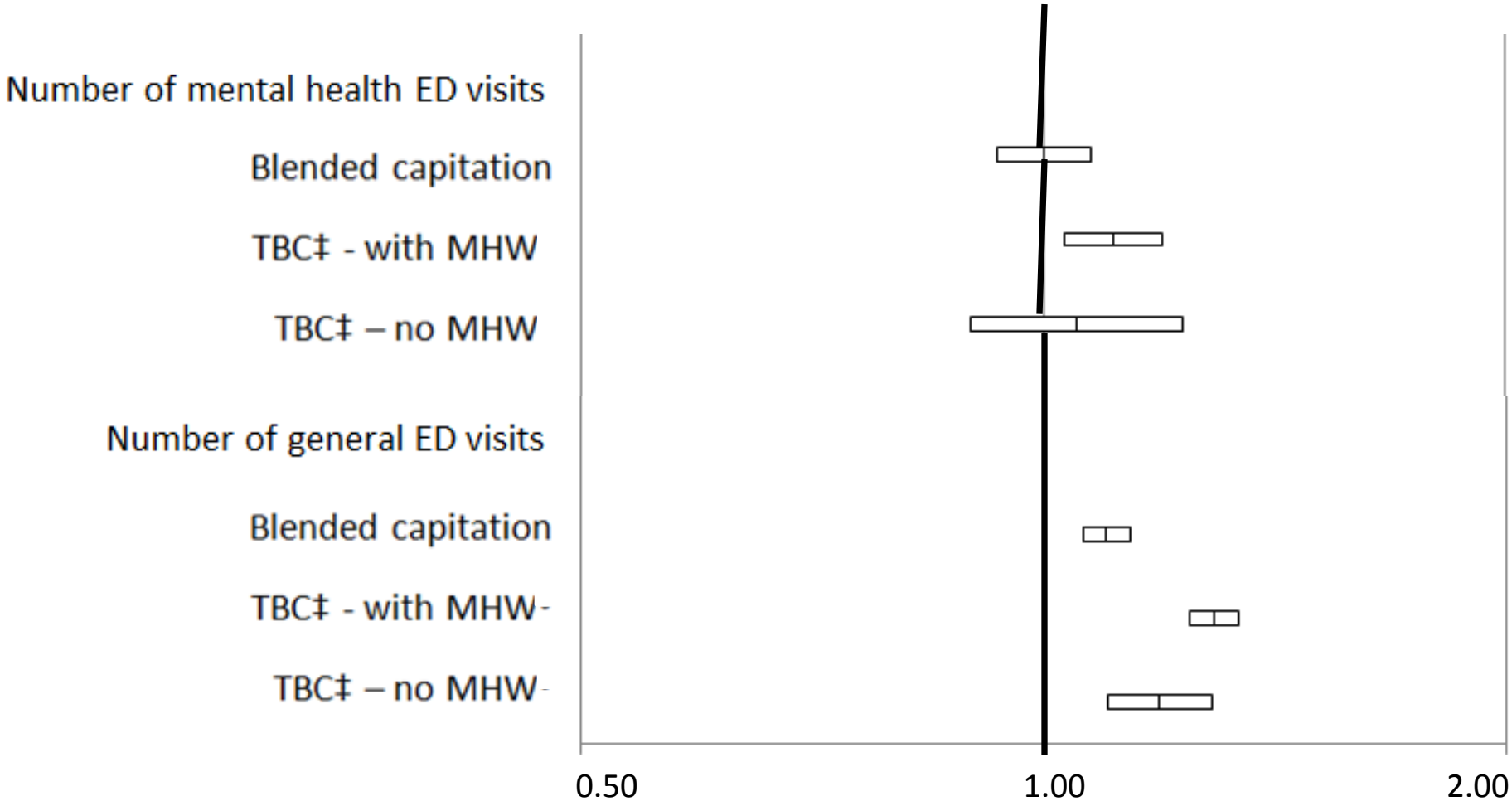


Figure 3a: Rate ratios and confidence limits for number of admissions by rostered SMI adults in capitation based models compared to enhanced FFS models

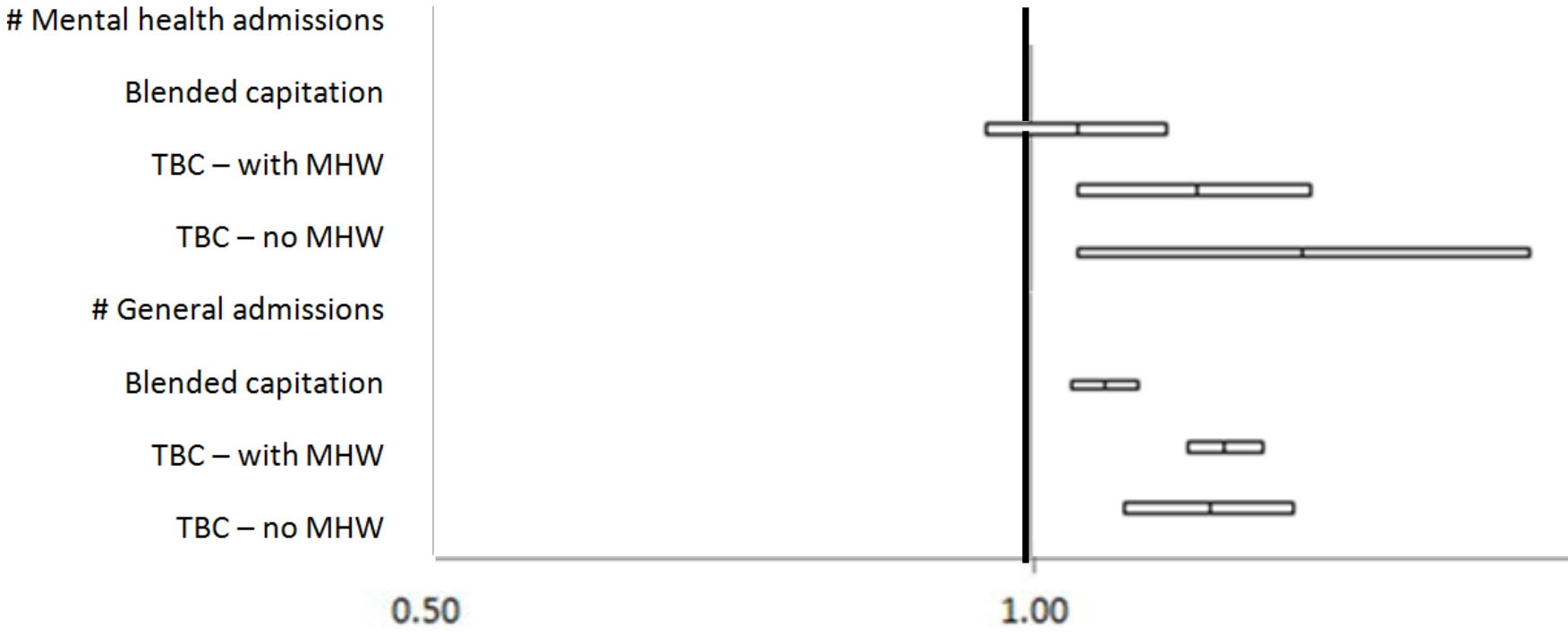
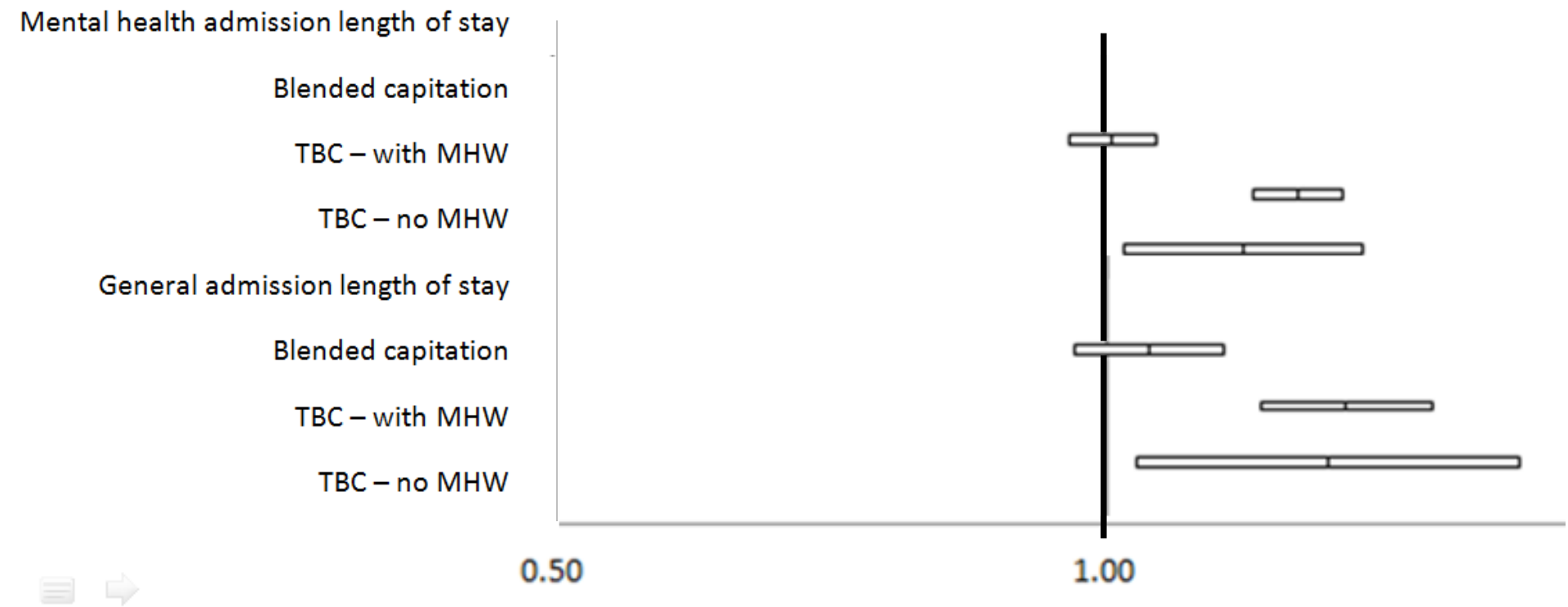


Figure 3b: Rate ratios and confidence limits for length of stay by rostered SMI adults in capitation based models compared to enhanced FFS models



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
  - 💲 Adjust PCP remuneration for case-mix (beyond age, sex) to account for higher expected service use by SMI persons
  - 💲 Pay PCPs more for patients with some illnesses to offset some of the financial risk & increase patient attractiveness (Scott et al., 2012)
  - 💲 Process of care incentives in primary could improve quality of health care to SMI populations
    - Process of care already exist for diabetes (Kiran et al., 2012)

References

- Guide to Physician Comepnsation. Version 3.0. Special Premiums. Premiums for Primary Health Care of Enrolled Patients with Serious Mental Illness. Sept 2009. Avaiable from: http://www.health.gov.on.ca/en/pro/programs/fht/docs/fht_compensation.pdf
- Kiran T, Victor C, Kopp A, Shah B, Glazier RH. The relationship between financial incentives and quality of diabetes care in Ontario. 2012 May;35(5):1038-46. doi: 10.2337/dc11-1402.
- Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. Cochrane Database of Systematic Reviews; 2011. Report No.: CD008451.

- 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 [16, 37, 40, 41] and associations with fewer mental health hospital admissions [15, 36-38]
  - 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