Cost-Effectiveness Analysis of a Randomized Study of Depression Treatment Options in Primary Care Suggests Stepped-Care Treatment may Have Economic Benefits

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Presentation Outline

- Background
- Objectives
- Analytic model
- Results
- Lessons/conclusions:
  - While more work is required to identify the most clinically effective versions of a stepped-care pathway (SCP), our findings suggest that the SCP for depression may have substantial potential to improve healthcare system value.

Background

- Some studies suggested that a stepped-care pathway (SCP) is an effective approach to depression management in primary care.
  - The SCP model starts from self-identification of depression risk and severity.
  - Treatment guidelines are then given based on the screening results
    - both antidepressant medication and psychosocial interventions
- However, there is little information regarding the cost-effectiveness of a specific SCP.

Background (Cont'd)

- a RCT conducted in Alberta to assess the impact of a SCP, compared to other treatment options
  - 1,400 patients
  - 12-week follow-up
  - 4 treatment arms:
    1. a standard care (SC);
    2. a treatment-as-usual (TAU);
    3. an online cognitive behavioural therapy (CBT);
    4. a stepped-care pathway (SCP).
  - Outcomes: PHQ-9, EQ-5D
  - The SCP was developed in Calgary
- Trial registration: This trial was registered with Clinical Trials database.
  - Identifier: NCT01975207

Objective

- We conducted an economic analysis to:
  - To estimate medical costs of depression, and
  - To determine whether the SCP was cost-effective
- Study population:
  - The adults who visited their primary care physicians and were screened for depression;
  - Subgroup: screened positive for depression symptoms (PHQ-9 score over 10 at baseline)
- Interventions:
  - The analysis compared SCP with other 3 treatments

Methods: data collection

- EQ-5D
  - Baseline, and
  - 12 weeks post-randomization
- Costs of physician, outpatient, and inpatient services:
  - 12 weeks pre-randomization,
  - 12 weeks post-randomization, and
  - from 12 weeks to 1-year post-randomization.
  - Data sources:
    - provincial healthcare administrative databases

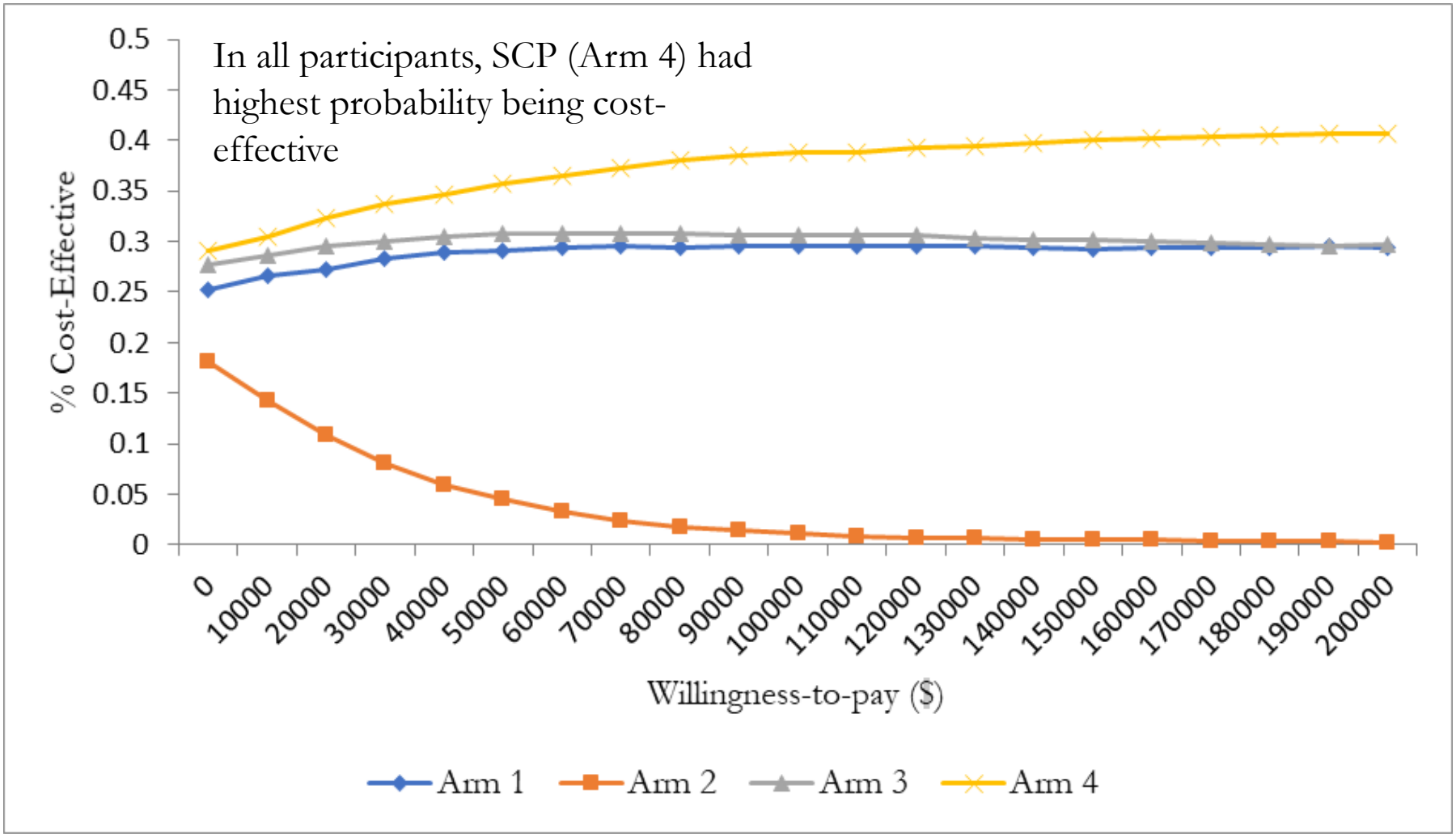
Methods: statistical analysis

- Intention-to-treat (ITT) approach was used
  - helps avoid bias
- multiple imputation:
  - Handle Missing data;
- OLS regression and generalized linear model (GLM):
  - Adjust for imbalances in baseline characteristics
- one-way ANOVA test:
  - Test the difference between intervention arms
- pairwise comparison of mean:
  - Test the difference between each pair of intervention arms
- mean-comparison t-test :
  - Test the difference between baseline and 12-week post randomisation for each intervention arm

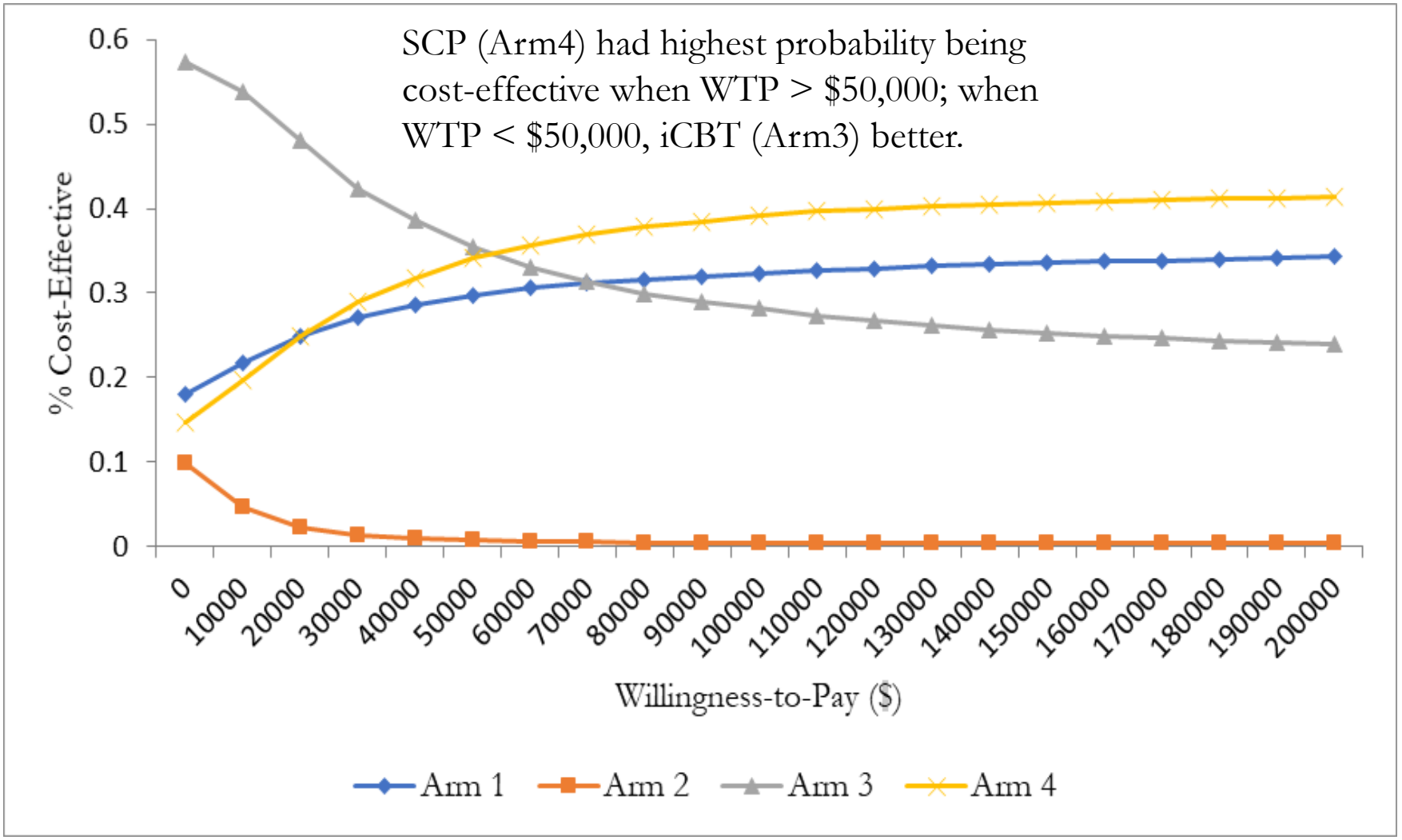
Results: effectiveness

- Significant improvement in PHQ-9 and EQ-5D from baseline to 12-week post randomisation in all arms
  - In all participants, the mean change
    - 0.72 (95% CI 0.61– 0.82) in PHQ-9 and
    - 0.024 (95% CI 0.021 – 0.027) in EQ-5D
  - In depressed participants (PHQ-9 > 10 at baseline), the mean change
    - 4.8 (95% CI 4.58– 5.02) in PHQ-9 and
    - 0.103 (95% CI 0.092 – 0.115) in EQ-5D
- However, there was no significant difference between groups.

CE Results: In all participants



CE Results: In depressed subgroup



Number of participants receiving physician, outpatient, and/or inpatient services

Arm	No services	Physician only	Physician + outpatient	Physician + inpatient	Physician + outpatient + inpatient	Total
All participants						
Arm 1 (SC)	4 (1.0%)	179 (43.4%)	176 (41.99%)	3 (0.73%)	53 (12.9%)	412
Arm 2 (TAU)	8 (2.0%)	160 (40.3%)	160 (39.80%)	2 (0.5%)	69 (17.4%)	397
Arm 3 (iCBT)	4 (1.0%)	188 (45.3%)	164 (37.83%)	7 (1.69%)	59 (14.2%)	415
Arm 4 (SCP)	3 (1.6%)	75 (41.0%)	88 (48.08%)	na	**17 (9.3%)**	183
Depressed subgroup						
Arm 1 (SC)	0 (0%)	21 (37.5%)	28 (50%)	na	7 (12.5%)	56
Arm 2 (TAU)	2 (3%)	21 31.8(%)	35 (53%)	na	8 (12.1%)	66
Arm 3 (iCBT)	0 (0%)	22 (44%)	23 (46%)	na	5 (10%)	50
Arm 4 (SCP)	0 (0%)	12 (35.3%)	18 (52.9%)	na	**4 (11.8%)**	34

Discussion

- Our study found no significant difference between SCP, SC , TAU and iCBT in terms of depression symptom reduction and EQ-5D improvement.
- Interestingly, our CEA revealed SCP is more cost-effective than the other alternatives.
- A relatively small portion of patients received hospital stays in SCP group.
  - Our finding may be driven by this, given that hospital costs are
    - 8 times outpatient costs and
    - 12 times physician costs
- While more work is required to identify the most clinically effective versions of a SCP, our findings suggest
  - that the care pathway may have substantial potential to improve healthcar system value.

Limitations

- The sample size was much smaller in the particular SCP group than the others.
- The effectiveness data was derived from 12-week trial and then assumed the observed quality of life at 12-week would be maintained until one year.
- The set-up costs SCP were not included in the economic analysis.

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