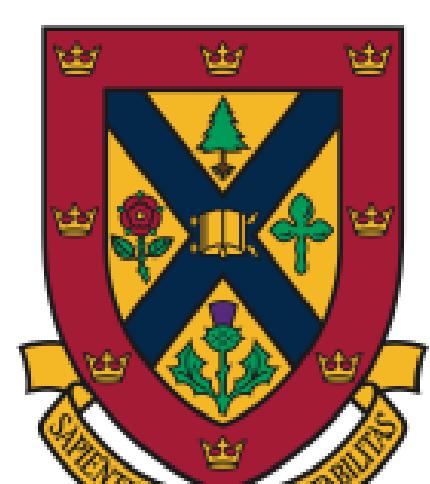


Leveraging electronic medical record data to develop patient interventions: a pilot study

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1. Background

- Segmentation techniques are applied in marketing but not fully explored in health care
- New approaches might help tailor interventions more specifically to patient needs
- Using positive deviance (a form of collective intelligence), people with similar behavioral characteristics may be able to learn from, problem solve with, and motivate each other
- Problem: Many patients still don't have good control over their Type 2 Diabetes (T2D) despite good Diabetes Education, Treatment and Follow-up
- Can positive deviance and data-driven segmentation help patients with poor diabetes control learn from those 'like them' who are successfully managing their disease?

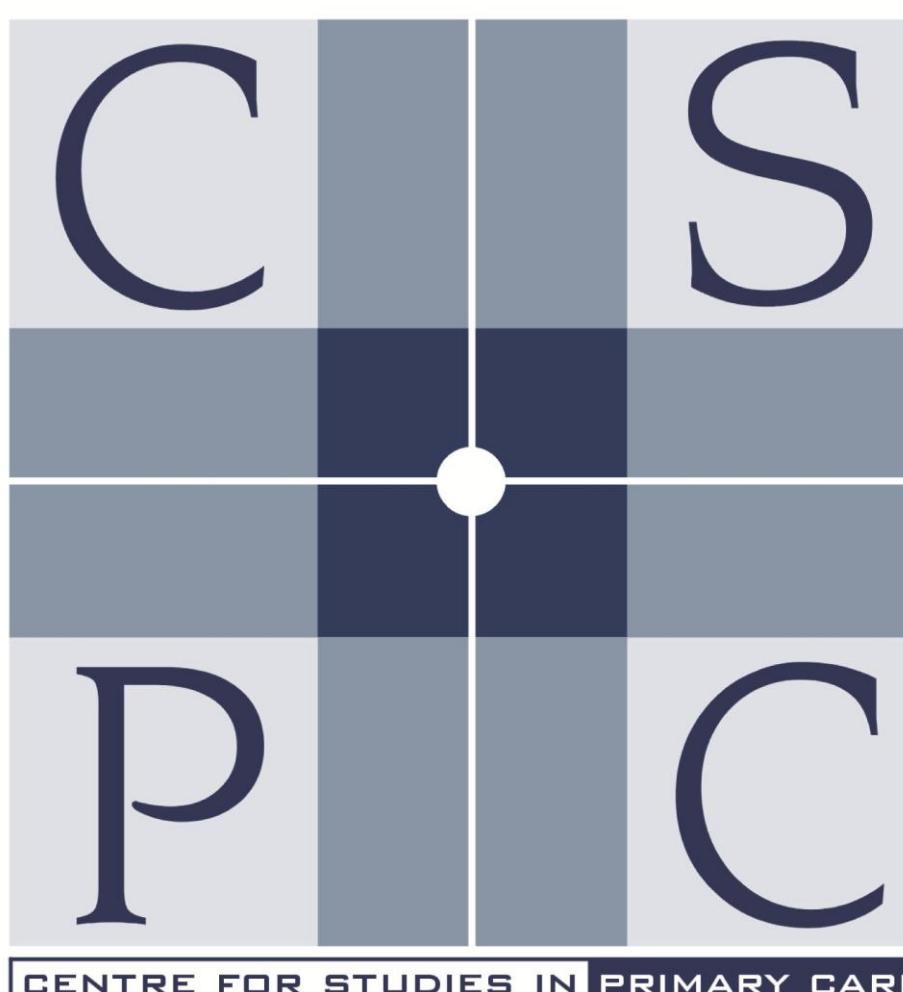
2. Aims

- Develop and validate machine learning algorithms to segment patients with T2D into meaningful clusters;
- Develop and assess a virtual peer-to-peer workshop intervention for patients with type 2 diabetes (T2D) by segmenting participants based on medication use.

3. Data

- Access to primary care electronic medical record (EMR) data repositories provides an opportunity to implement personalized primary health care solutions
- The Eastern Ontario Network (EON) database includes data from over 200,000 patients across Eastern Ontario
- For this study, data from one EON clinic was utilized to identify patients with T2D (n=825) aged 40 and older

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6. Peer-to-Peer Virtual Workshops

Moderated virtual peer-to-peer workshops were held with patients with good and bad control from within and across segments (lifestyle, medication, and mixed (from all clusters))

Six workshops with 3-6 participants (total n =22) included: sharing experiences, challenges and practical advice related to T2D, discussion and problem solving related to sharing T2D-related collective intelligence

7. Patient Outcomes

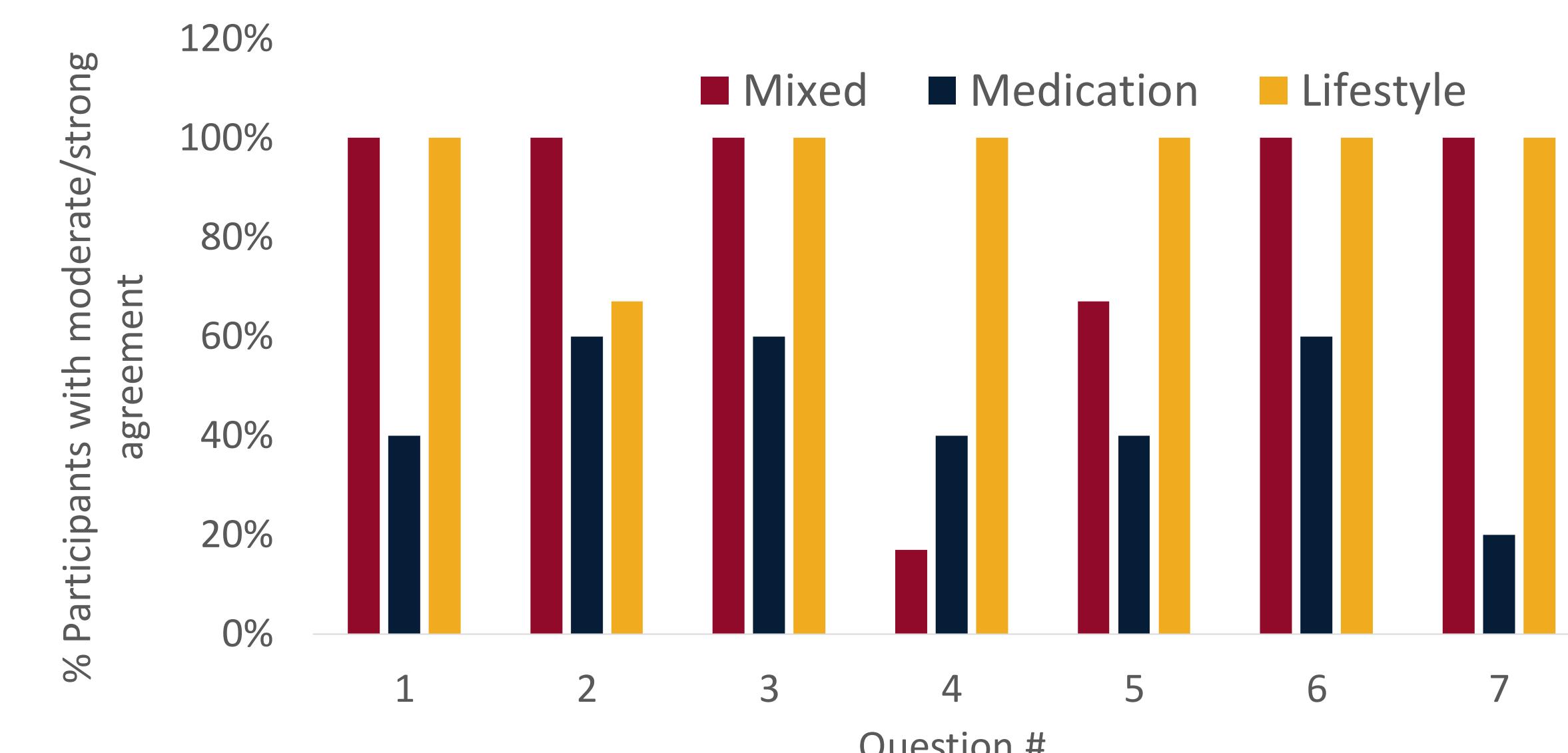


Figure 3: Patient reported outcomes post workshop participation

Learning and motivation:

Lifestyle and mixed group workshops had better overall experience (Q1), better learning (Q2-Q3), higher motivation to set a goal and act in the future (Q4-Q6) compared to the medication group. Only 20% of medication group participants would recommend the workshop, compared to 100% of lifestyle and mixed group participants.

8. Summary

- Pilot data indicates patients in the lifestyle + mixed workshop participants reported improved overall experience, better learning, and higher motivation
- Data analysis is ongoing, including qualitative analysis of workshop discussions
- Patients in the Medication and Lifestyle segments may have different preferences, needs, and characteristics (e.g., HbA1c control)
- This pilot project provides evidence to support the development and implementation of a data driven intervention for patients with T2D
- Segmentation of patients by behavior may help identify strategies that can help patients improve control of disease

Q1: After this workshop I feel better about managing my condition

Q2: I learned new information during the workshop

Q3: The information and interactions during the workshop were useful to me

Q4: I plan to act on the information I obtained in the workshop

Q5: I believe I will achieve my goal within the next three months

Q6: I am motivated to set a goal for improving my diabetes

Q7: I would recommend this workshop to people I know

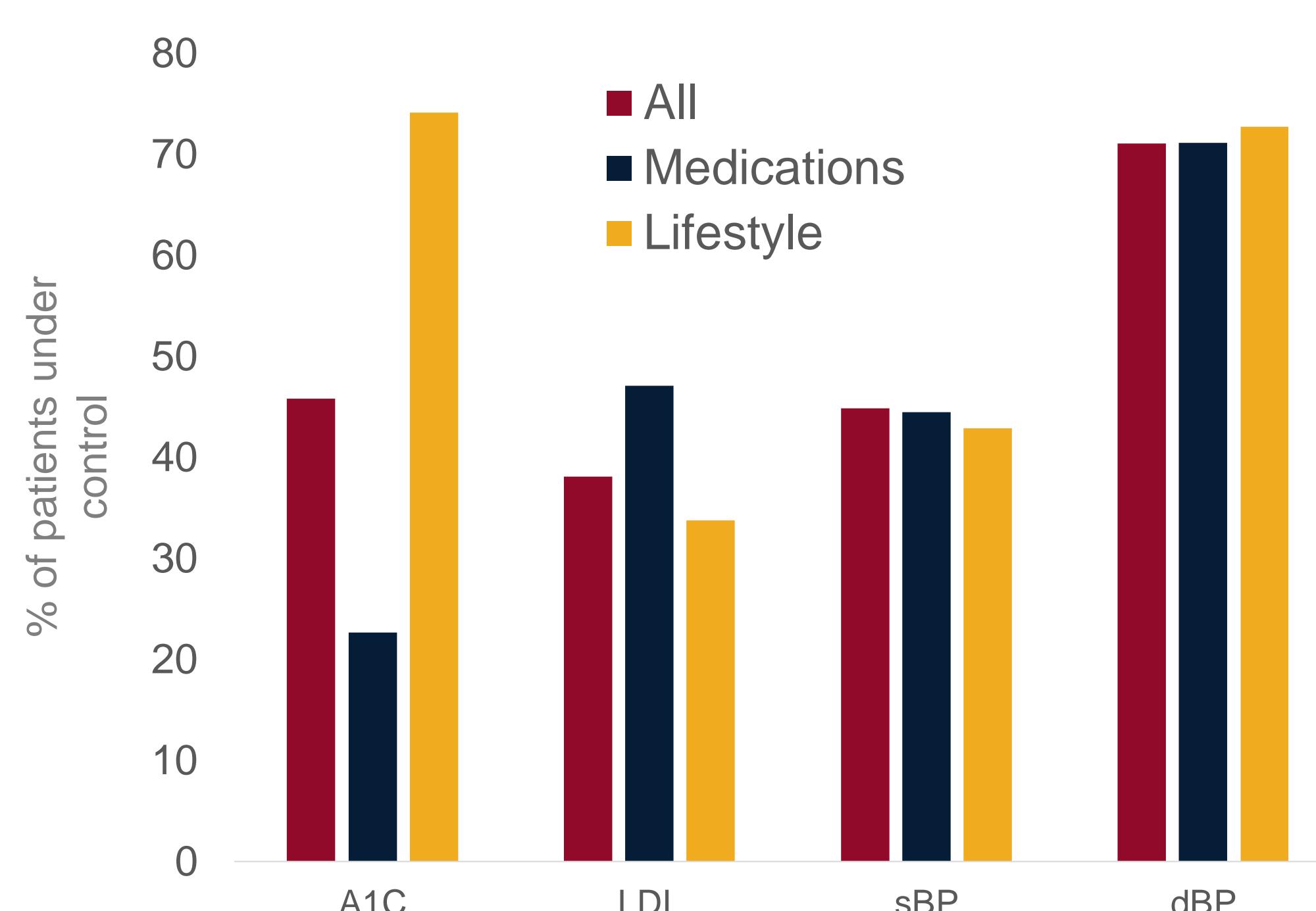


Figure 2: % Patients with good Control of biomarkers by segment