An evaluation of the Diabetes Conversation Map™ Program: Health Outcomes and Healthcare Utilization during a 4-Year Follow-Up

Eiavn Srulovich1,2, Maya Levener-Roberts1, Bradley Curtis1, Xuanyao He1, Moshe Hoshen1, Mina Rotem1, Ilan Gofer1, Efrat Shadmi1, Calanit Key1, Nomy Levin-laina1, Alena Strizek3, Becca Feldman1
1 Department of Nursing, University of Haifa, Haifa, Israel; 2 Clalit Research Institute, Clalit HealthCare Services, Tel Aviv, Israel; 3 Eli Lilly and Company; 4 Community Nursing Division, Clalit HealthCare Services, Tel Aviv, Israel

BACKGROUND
- Diabetes Conversation Map™ (Map™) is a global education program of six sessions that engages patients with Type 2 Diabetes Mellitus (T2DM) in group-based discussions on diabetes-related topics in order to provide patients the knowledge, understanding of their condition, and strategies to achieve desired behaviors and improve outcomes.
- Israel's largest HMO, Clalit Health Services (Clalit), implemented an ongoing Map™ program beginning in 2010.
- Community nurses from primary care and diabetes-specialist clinics are trained and certified as Map™ program instructors to lead the sessions.
- Previous studies with short-term follow-up and small sample sizes report inconclusive evidence regarding the impact of participation in the Map™ program on health outcomes and healthcare utilization.

AIM
To compare clinical and healthcare utilization between participants in the Map program and matched controls.

METHODS
- This was a retrospective cohort study of 11,053 Clalit members with T2DM who enrolled in the 6 session Map™ program between 1.1.2010 and 4.1.2016.
- Each Map™ participant was matched to a control group who never enrolled in the Map™ program by age, sex, and HbA1c level, using a 1:3 sequential matching technique.
- The associations between program participation and post-program laboratory test results (HbA1c, glucose, and LDL levels), and healthcare utilization (frequency of glucose and HbA1c testing; and hospital, physician, and specialist visits) were assessed between cases and controls using multivariable linear and Poisson regression models at 6, 12, 24, 36, and 48 months post index date.

RESULTS | DESCRIPTIVE
Among map participants, 64% were aged 55-74, 58.4% were men, 30.2% and 30.6% were from low and high socioeconomic status, respectively. A summary of the Map™ program impact, presenting significant outcomes on participants over varying follow-up time, compared to controls.

- Diastolic blood pressure
- Triglycerides
- HDL
- Frequency of glucose blood testing
- Frequency of primary care visits
- HbA1c
- Glucose
- LDL
- Frequency of ophthalmologist visits
- Hospital admissions
- Frequency of nutritionist visits
- Length of hospital stay

Clinical outcomes: Map™ participants had significantly lower HbA1c (β=0.31, p<0.001), glucose (β=7.45, p<0.001), and LDL levels (β=1.86, p<0.001) up to 36 months post-enrollment compared to matched controls.

Healthcare Utilization Outcomes: Map™ participants had significantly more blood glucose testing up to 36 months post-enrollment compared to matched-controls (OR=1.04, 95%CI: 1.02-1.07). The participants also had significantly fewer annual primary care visits (β=-0.18, p<0.001) but more annual ophthalmologist visits (OR=1.17, 95%CI: 1.13-1.20) and nutritionist (OR=1.44, 95%CI: 1.38-1.51) visits up to 24, 36, and 48 months post-enrollment, respectively, compared to matched-controls. The annual frequency of hospital admissions (OR=0.78, 95%CI: 0.73-0.83) and length of hospital stay (β=0.34, p<0.001) was lower up to 36 and 48 months post enrollment, respectively, in the Map™ group compared to matched-controls.

CONCLUSIONS
- Participation in the Map™ program was associated with improved clinical outcomes, behaviors, and healthcare utilization for at least 24 months.
- Patient participation in the Map™ program reduced both the health and economic burden attributed to T2DM in this population.

This study was supported by Eli Lilly and Company.