

Leveraging Electronic Medical Record (EMR) Changes and Virtual Care Towards Improving Tobacco Screening and Referral Rates

Sun Choi¹, Yunlong Liang², Monica Ku³, Jennifer Do¹, Naa Kwarley Quartey¹, Iryna Tymoshyk³, Anna Feng³, Anjie Yang⁴, David Girard⁵, Rugsha Sivanandan⁵, Meredith E Giuliani^{1,6}, Suman Dhanju⁵, Colleen Dunphy⁵, Lawson Eng^{1,3,5}

¹Cancer Education Program, Princess Margaret Cancer Centre, Toronto, ON; ²Data and Analytics, Princess Margaret Cancer Centre, Toronto, ON; ³Division of Medical Oncology and Hematology, Princess Margaret Cancer Centre, Toronto, ON; ⁴Department of Pharmacy, University Health Network, Toronto, ON; ⁵Toronto Central South Regional Cancer Program, University Health Network, Toronto, ON; ⁶Department of Radiation Oncology, Princess Margaret Cancer Centre, Toronto, ON



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INTRODUCTION

- Continued smoking after a diagnosis of cancer is associated with poorer outcomes; there are many benefits related to smoking cessation in the context of cancer care
- In Ontario, Canada, all Regional Cancer Centres are required to screen all new cancer patients for tobacco use and refer patients using tobacco to cessation support as a part of standard of care
- These screening and referral rates are captured as provincial-wide quality and performance metrics
- However, due to the COVID-19 pandemic and a subsequent change in electronic medical record (EMR) system to Epic, there were declines in both our local screening and referral rates for smoking cessation support

OBJECTIVES

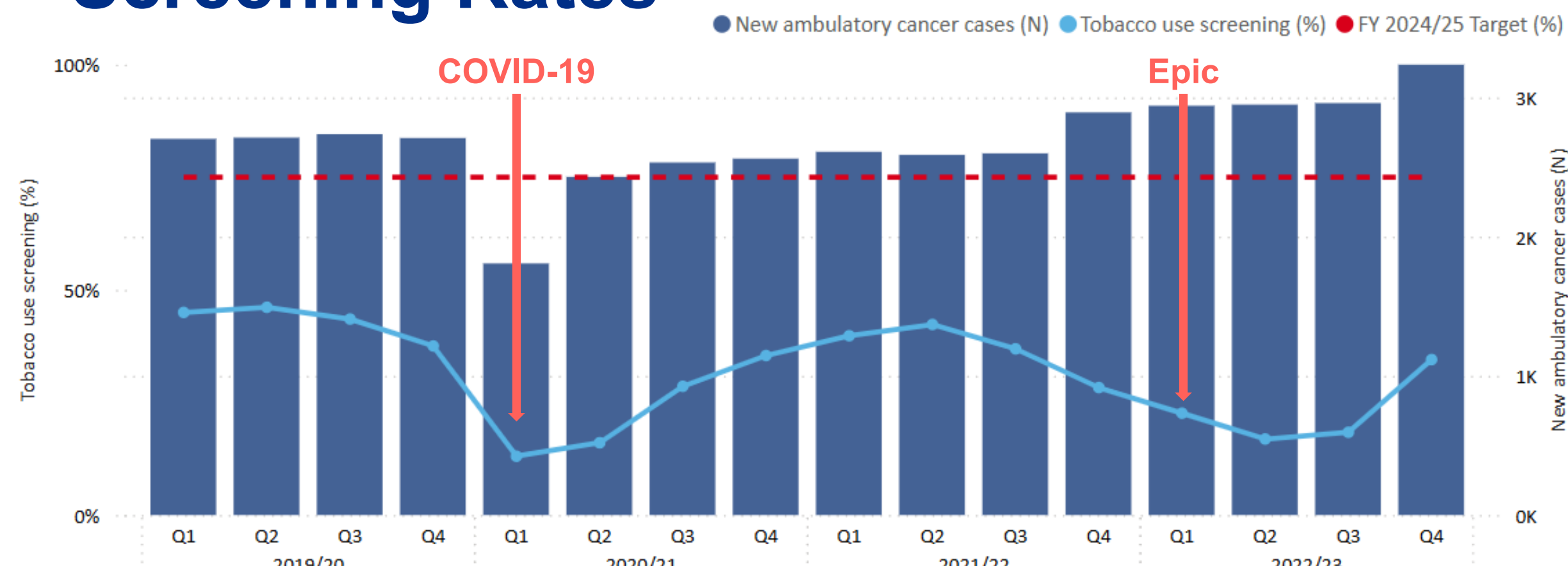
To utilize a change in EMR system to Epic to re-implement tobacco use screening and referrals across our regional cancer program

METHODS

- Following the EMR transition to Epic in June 2022, we piloted EMR and virtual care strategies from January 2023 to March 2026 to improve both tobacco screening and referral rates
- Prior to COVID-19, tobacco use screening, and referrals were completed using an iPad based questionnaire given to patients to complete during appointment check-in and referrals were automatically faxed after completion of screening
- However, due to COVID-19, this was transitioned into a hybrid pre-visit electronic tobacco use assessment questionnaire emailed to patients and in clinic paper-based referral system
- We created a multi-disciplinary smoking cessation team consisting of members across clinical (medical, pharmacy and nursing) specialties, cancer education, Epic/EMR systems, data warehouse, and hospital/cancer program leadership to develop a strategy towards improving screening and referral rates (Figure 2)
- Tobacco use screening and referral rates were measured quarterly throughout the implementation process

RESULTS

Screening Rates



Referral Rates

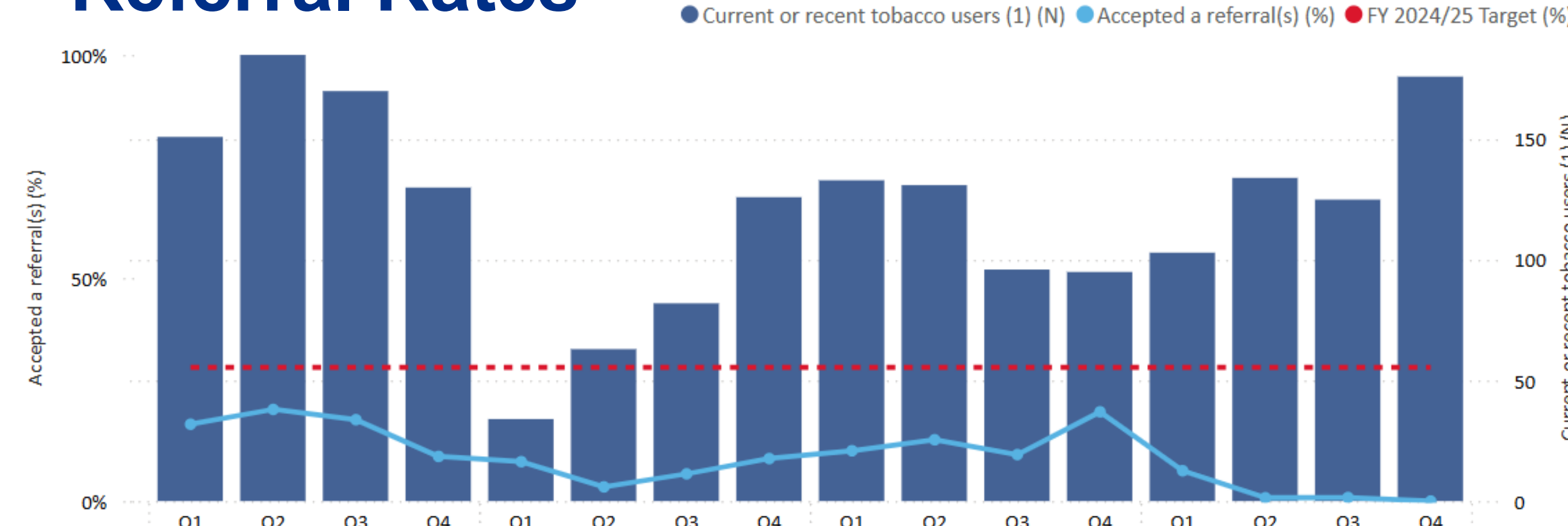


Figure 1. Baseline screening (top) and referral rates (bottom) before the COVID-19 pandemic, during the COVID-19 pandemic and initial transition to Epic. Yearly data is divided into quarters where Q1 (April to June), Q2 (July to September), Q3 (October to December), Q4 (January to March). Provincial guidelines for screening and referrals are 70% and 30% respectively (red line)

Quarter	Pre Intervention	2023				2024				2025			
		Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Screening Rate	18%	33%	38%	39%	41%	42%	44%	42%	36%	38%	52%	60%	60%
Referral Rate	1%	0%	1%	3%	20%	25%	26%	22%	28%	24%	23%	20%	24%

Table 2. Screening and referral rates during our implementation of various steps to improve tobacco use screening and cessation support referral rates

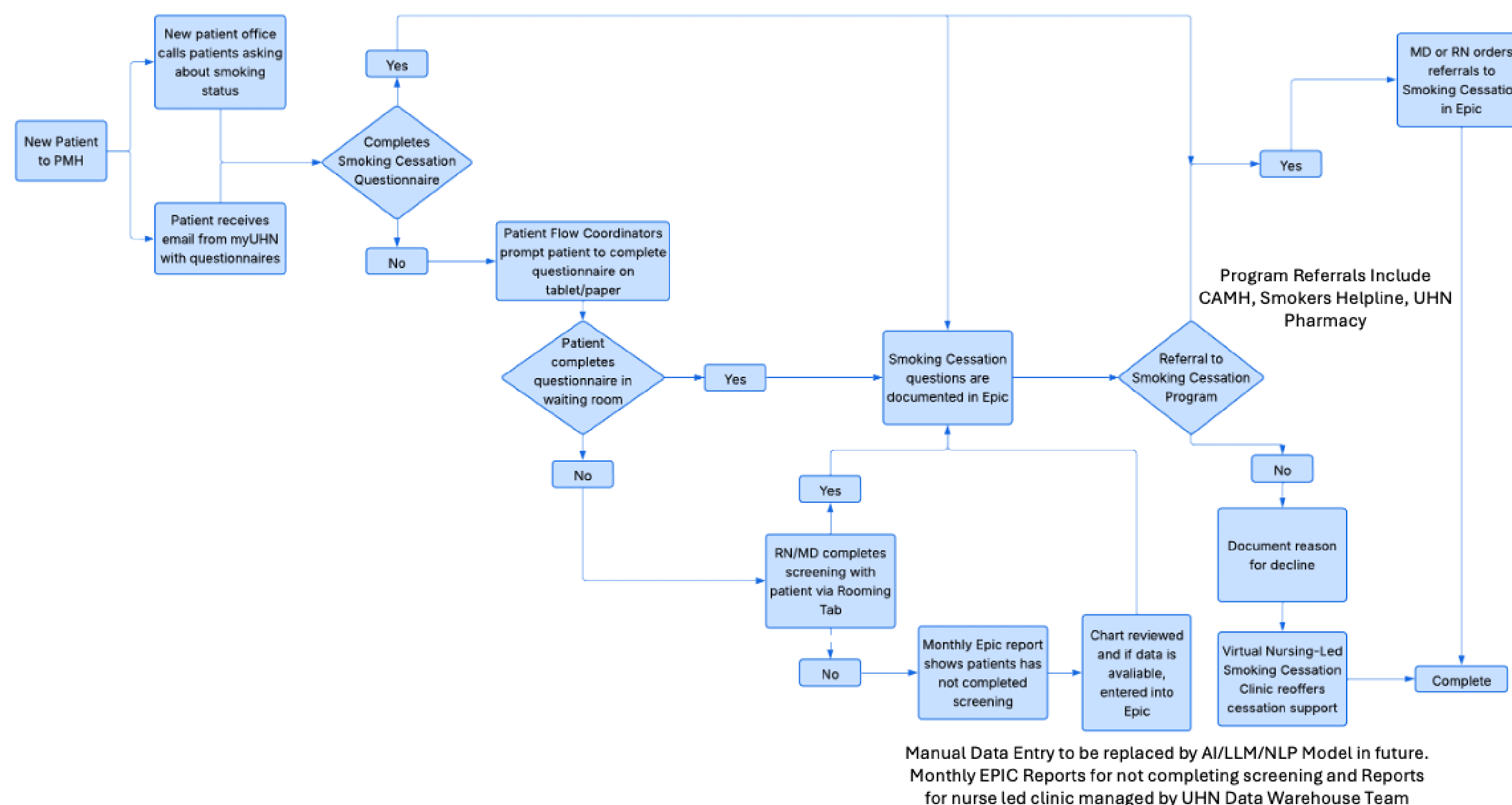
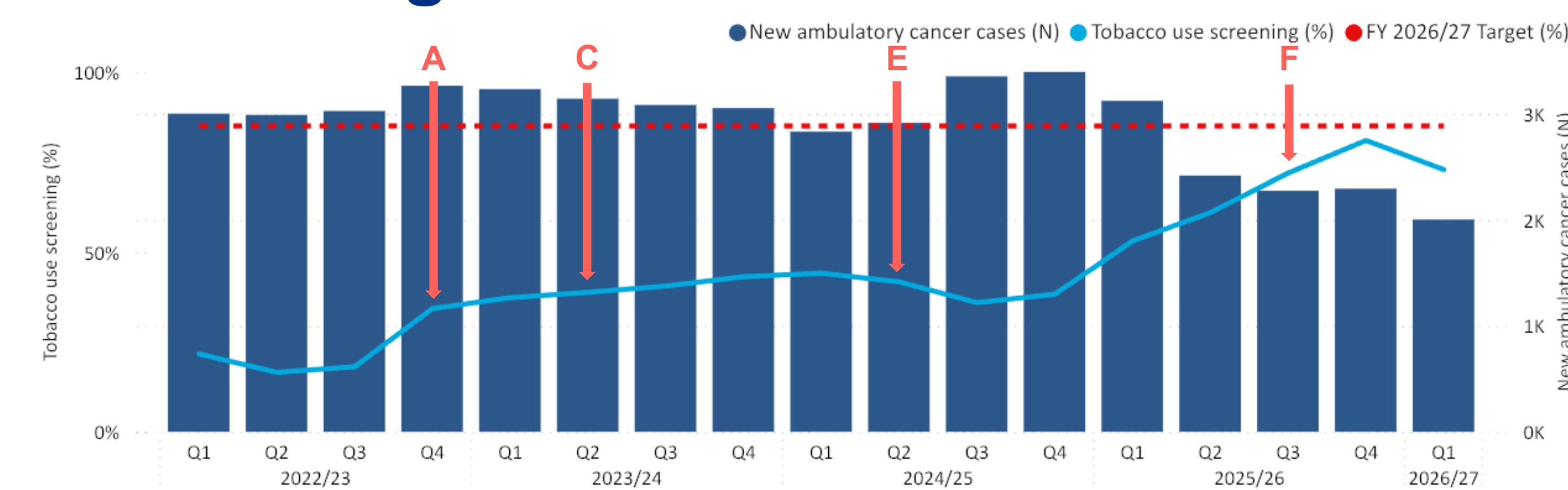


Figure 2. Re-designed tobacco use screening and referral clinical and data workflow created by our multi-disciplinary team

Step	Proposed Intervention Step	Completion
A	Collation of tobacco use data sources	Jan to Mar 2023
B	Creation of referral inbox to track referrals	Jul to Sep 2023
C	Assignment of e-questionnaires to correct visit type	Jul to Sep 2023
D	Development of a virtual nurse-led smoking cessation clinic	Oct to Dec 2023
E	Engagement of new patient office to screen to tobacco use	Jul to Sep 2024
F	Manual transcription of smoking data from free text to extractable Epic fields	Oct to Dec 2025

Table 1. Listing of major re-implementation processes applied to help with improving tobacco use screening and referral rates and their implementation status as of March 2026

Screening Rates



Referral Rates

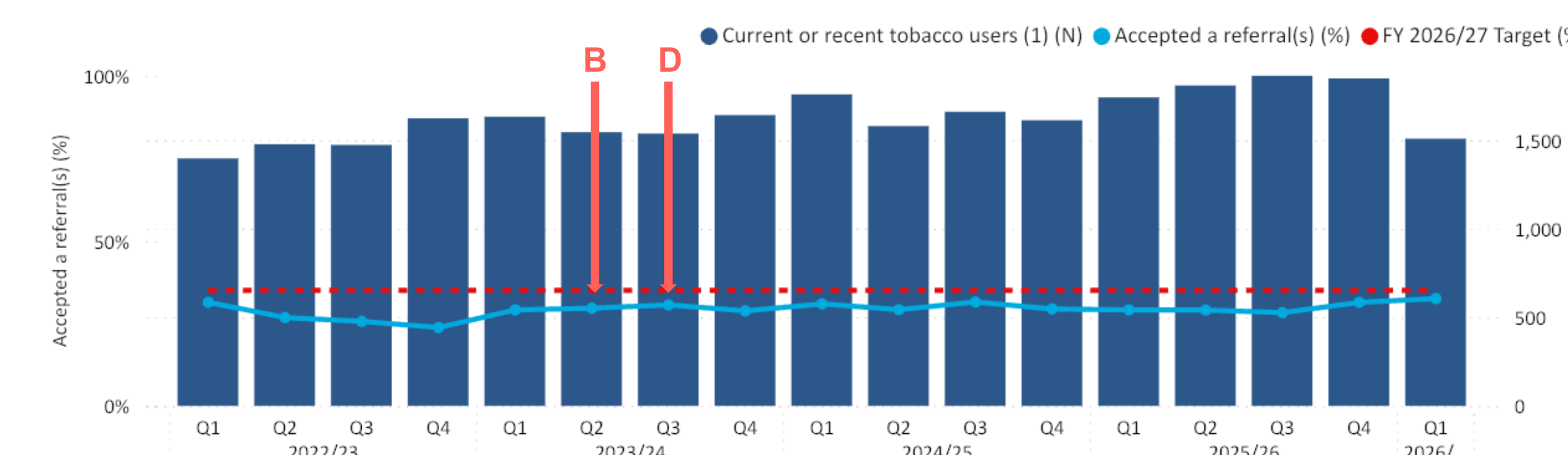


Figure 3. Screening (top) and referral rates (bottom) after piloting various implementation steps labelled based on label from Table 1.

Feasibility Outcomes

Total number of calls made during clinics from Nov 2023 to Mar 2024	214
Number of half-day clinics run from Nov 2023 to Feb 2024	22
Average number of calls per clinic	11
Average length of each call (mins)	3
Percentage of patients accepting referral	16%
Percentage of patients who already quit smoking at time of assessment	26%

Table 3. Feasibility outcomes for virtual nurse-led weekly half-day smoking cessation follow-up clinic. This clinic contacted new patients identified in the cancer program on Epic who were using tobacco but were either not offered or declined a referral for smoking cessation support to re-offer a referral to a cessation support program. These metrics represent the results for the pilot run of the clinic from November 2023 to May 2024 (n=167 patients)

CONCLUSIONS

- Both EMR implementation and virtual care strategies helped to successfully improve both cancer program wide tobacco use screening and referral rates for smoking cessation support
- The greatest impact on screening was seen from the collation of EMR data sources on tobacco use on EPIC and the development of a virtual nurse led clinic had the greatest impact on referral rates
- A virtual nurse-led clinic is feasible with helping to follow-up on providing support for smoking cessation among cancer patients

Contact: sun.choi@uhn.ca