Primary Care Quality Indicators in Ontario: Summary of Trends from 2018 to 2022

March 15, 2023

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Methods

Primary question: How has the COVID-19 pandemic affected the quality of primary care in Ontario?

Study population:

- All patients living in Ontario and alive and eligible for OHIP on 6-month cross-sectional increments from October 2018 to April 2022
  - Excluding those in long-term care; in palliative care; age <1

Methods

Data Sources

Registered Person's Database (RPDB)

- Identification of Ontario population
- Patient-level characteristics (recent OHIP registration)

OHIP claims database

- Primary care physician visits
- New enrolments

Primary Care Population (PCPOP) dataset

- Cancer screening indicators
- Patient-level characteristics (age, sex, postal code)

Ontario Hypertension Dataset

- Hypertension follow-up indicator

Narcotics Monitoring System (NMS)

- High risk prescribing indicators

ICES Physician Database

- Continuity of care

Postal Code Conversion File (PCCF)

- Neighbourhood income quintile
- Rurality Index of Ontario (RIO)

These datasets were linked using unique encoded identifiers and analyzed at ICES.

Methods

Analysis

- Trends in primary care indicators between October 2018 and April 2022
  - *Cancer screening*: colorectal cancer screening; breast cancer screening
  - *Diabetes care*: patients with diabetes with follow-up care; retinopathy screening; statin prescribing
  - *Hypertension care*: patients with hypertension with follow-up care
  - *High risk prescribing*: opioids dispensed; new opioid starts; opioids and benzodiazepines (or z-drugs) dispensed
  - *Continuity of care*: visits to usual provider of care
  - *Capacity*: new enrolments
- Stratification of primary care indicators by sex, neighbourhood income, immigration, rurality between October 2018 and April 2022
  - Colorectal cancer screening; patients with diabetes with in-person follow-up care

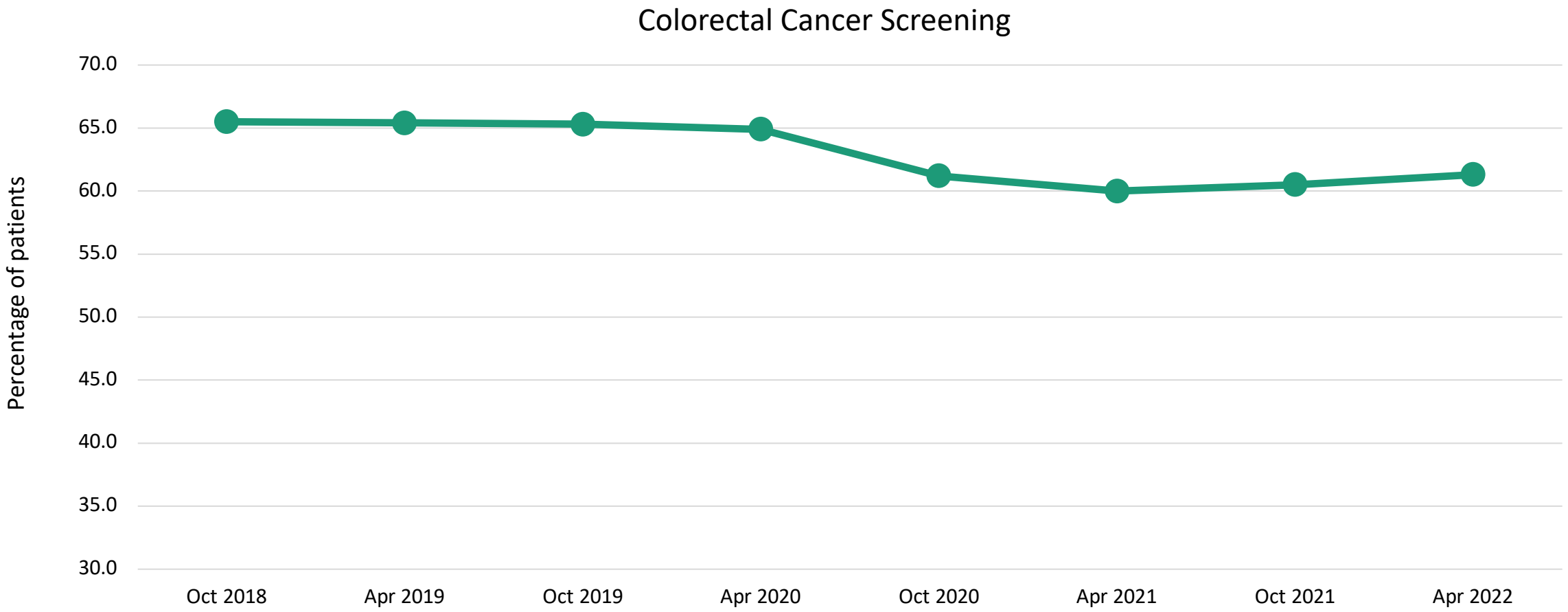
Cancer Screening Indicators

- Colorectal cancer screening
- Breast cancer screening

Colorectal cancer screening rates decreased after the COVID-19 pandemic and has been slow to return to pre-pandemic measures.

The percentage of screen-eligible patients who were up-to-date on colorectal cancer screening* was steady around 65% prior to the beginning of the COVID-19 pandemic. There was a decrease to 60% by April 2021. By April 2022, there was a small increase to 61%.

*patients aged 52 to 74 years at index date who had a FOBT within the past 2 years, other investigations (i.e., barium enema, sigmoidoscopy) within the past 5 years or a colonoscopy within the past 10 years



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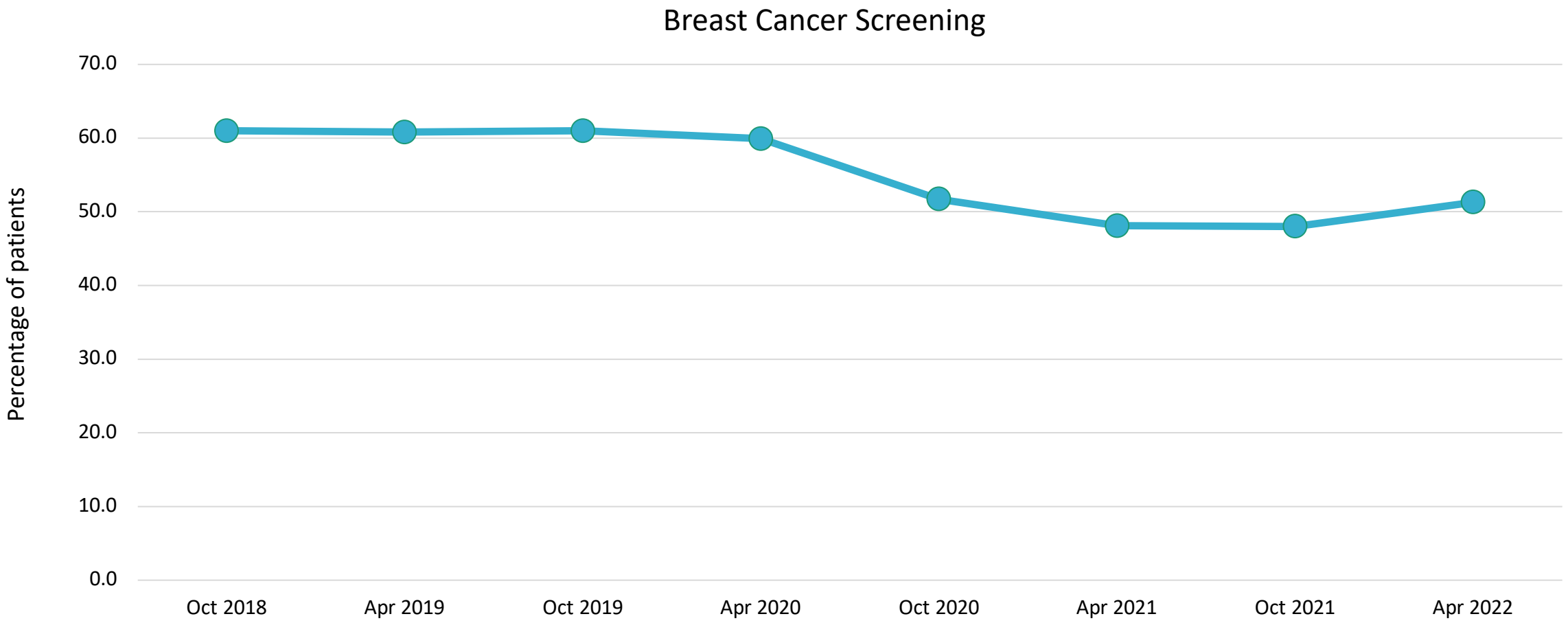
Data: PCPOP
Analysis: ICES

Breast cancer screening rates decreased 13% after the COVID-19 pandemic. By October 2021, less than half of eligible patients were up-to-date on screening.

The percentage of screen-eligible patients who were up-to-date on breast cancer screening* was steady around 61% prior to the beginning of the COVID-19 pandemic. There was a decrease to a nadir of 48% by October 2021, a difference of 13% in 18 months. There has been increasing trend since October 2021.

*female patients aged 52 to 69 years at index date who had a mammogram within the last 2 years.



Kiran et al, March 2023

Data: PCPOP
Analysis: ICES

Chronic Disease Care Indicators

- Patients with diabetes with in-person follow-up care
- Retinopathy screening among patients with diabetes
- Statin prescribing among older adults with diabetes
- Patients with hypertension with in-person follow-up care

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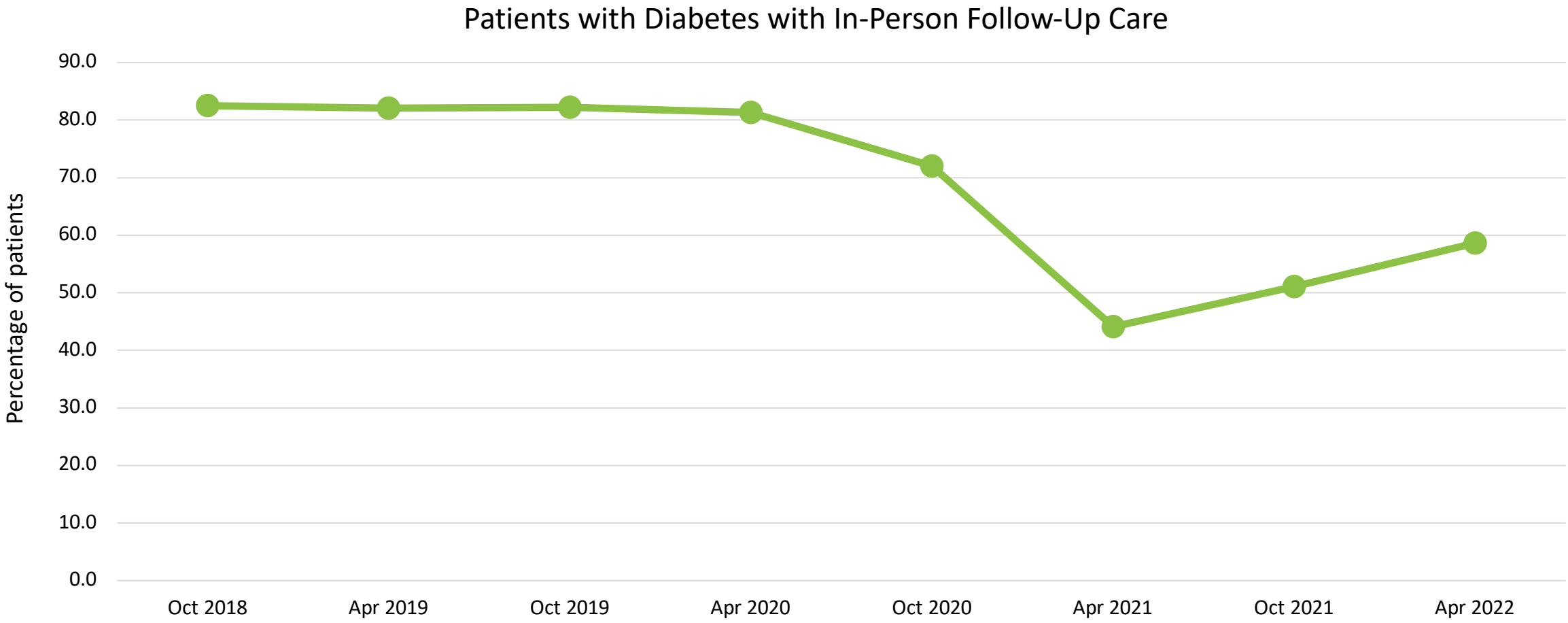
In-person visits by patients with diabetes to their physician decreased by almost 50% after the COVID-19 pandemic, with signs of steady increase since April 2021.

The percentage of diabetic patients* who had an in-person visit to their physician for any reason within the last 12 months was stable at 82% prior to the COVID-19 pandemic. By April 2021, there was a decrease to 44%. Since April 2021, there has been a steady increasing trend.

*diabetic patients age 18 and older one year prior to the index date

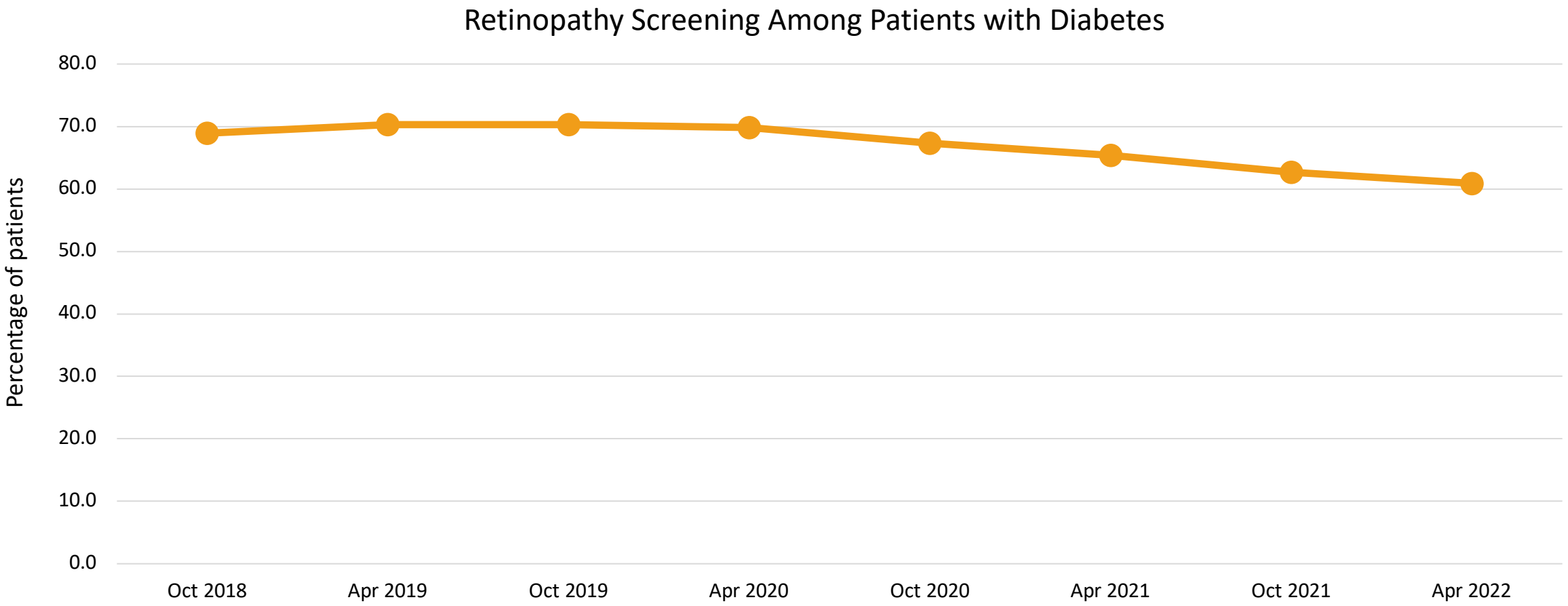


Data: OHIP
Analysis: ICES

Retinopathy screening among patients with diabetes has decreased by 10% since the COVID-19 pandemic.

Percentage of diabetic patients* who had at least one retinal exam with an ophthalmologist or optometrist in the last 24 months has shown a steady decrease over time since the COVID-19 pandemic. There has been approximately a 10% decrease between April 2020 and April 2022.

*diabetic patients age 18 and older two years prior to the index date



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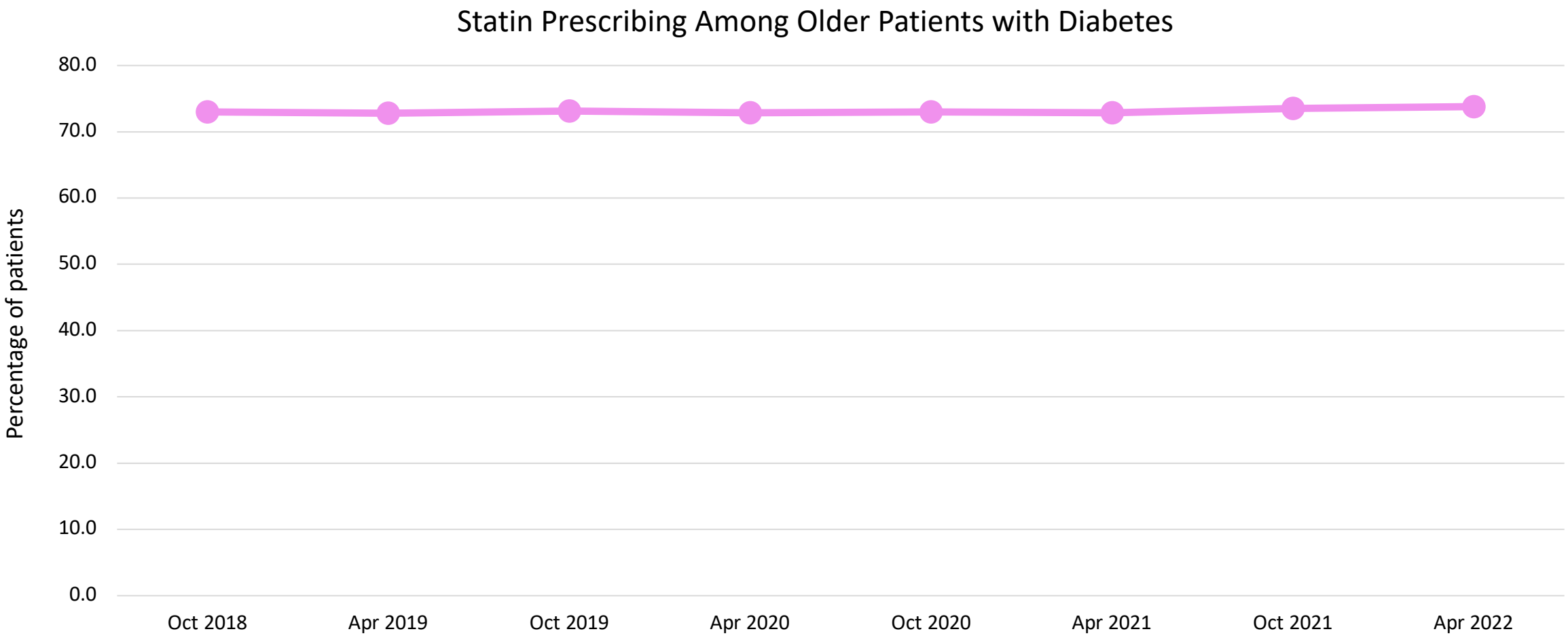
Data: OHIP
Analysis: ICES

Prescribing of statin medications among older patients with diabetes has remained stable throughout the COVID-19 pandemic.

Percentage of elderly diabetic patients* who had a statin medication dispended within the last 12 months has remained overall stable at approximately 73% before and after the COVID-19 pandemic.

*diabetic patients age 66 and older one year prior to the index date



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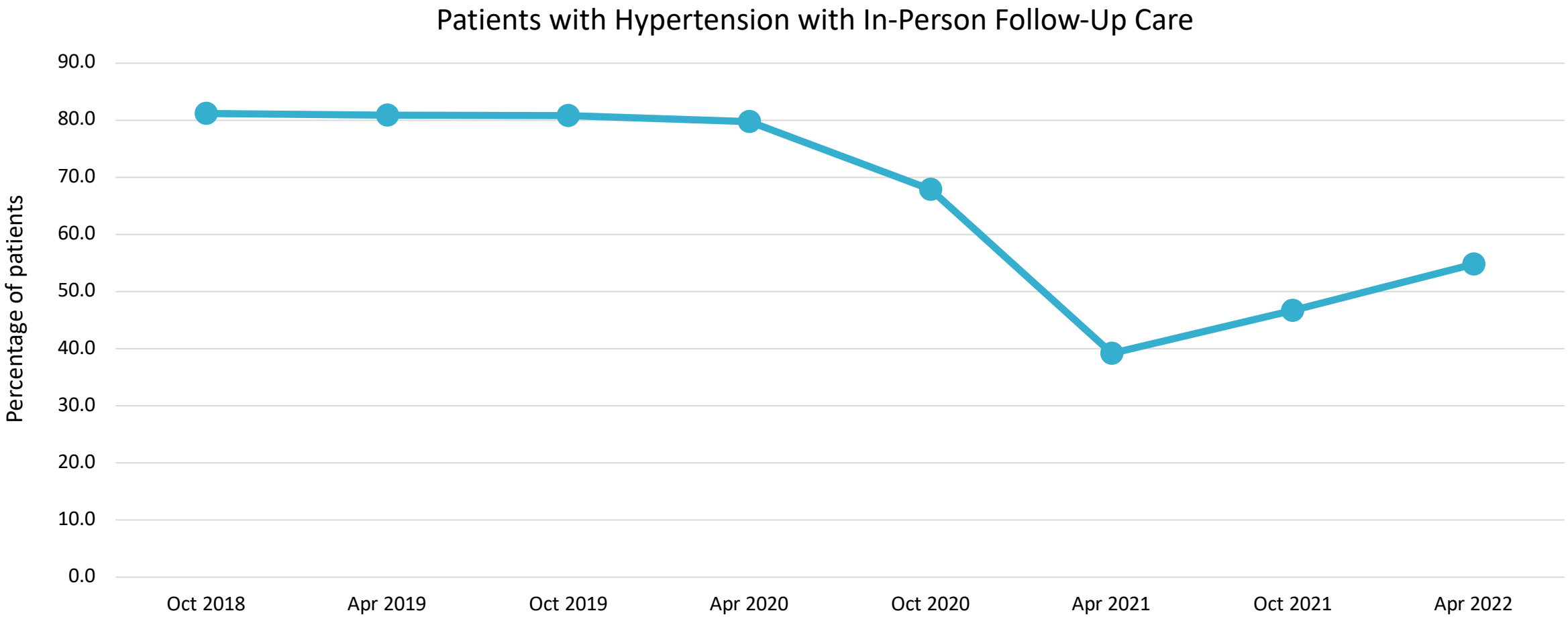
Data: OHIP
Analysis: ICES

In-person visits by patients with hypertension to their physician decreased by 50% after the COVID-19 pandemic , with signs of steady increase since April 2021.

Percentage of patients with hypertension* who had an in-person visit to their physician for any reason within the last 12 months was stable at approximately 80% prior to the COVID-19 pandemic. By April 2021, there was a decrease to 39%. Since April 2021, there is a steady increase to 55% by April 2022.

*patients age 18 and older one year prior to the index date with hypertension



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Data: OHIP
Analysis: ICES

High Risk Prescribing Indicators

- Opioids dispensed
- New opioids dispensed
- Opioids and benzodiazepines (or Z-drugs) dispensed

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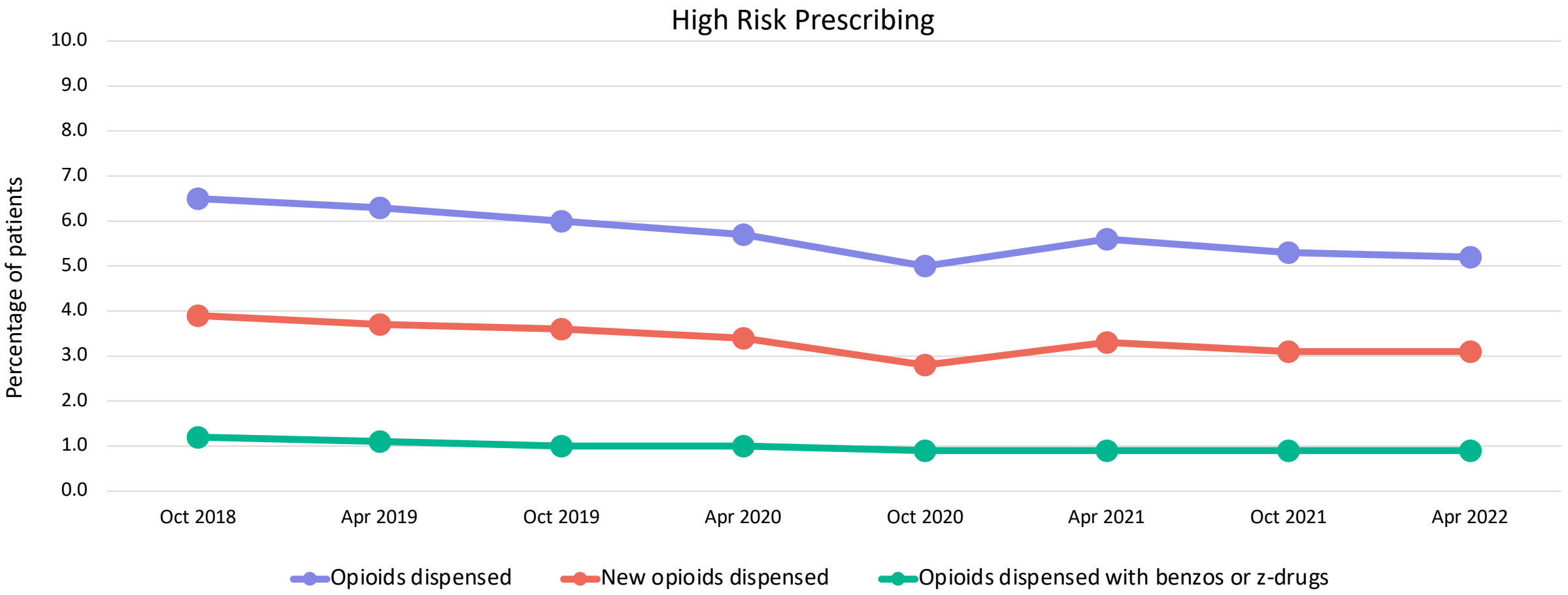
High risk prescribing of opioids (total and new prescriptions) shows a decreasing trend over time. Co-prescribing of opioids with benzodiazepines (or Z-drugs) remains low over time.

Percentage of non-palliative patients dispensed an opioid prescription*, newly dispensed opioid prescription*, and dispensed an opioid prescription with a benzodiazepine (or Z-drug) prescription* all show an overall decreasing trend over time.

*within the last 6 months. Excluding opioid agonist therapy.



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Data: NMS
Analysis: ICES

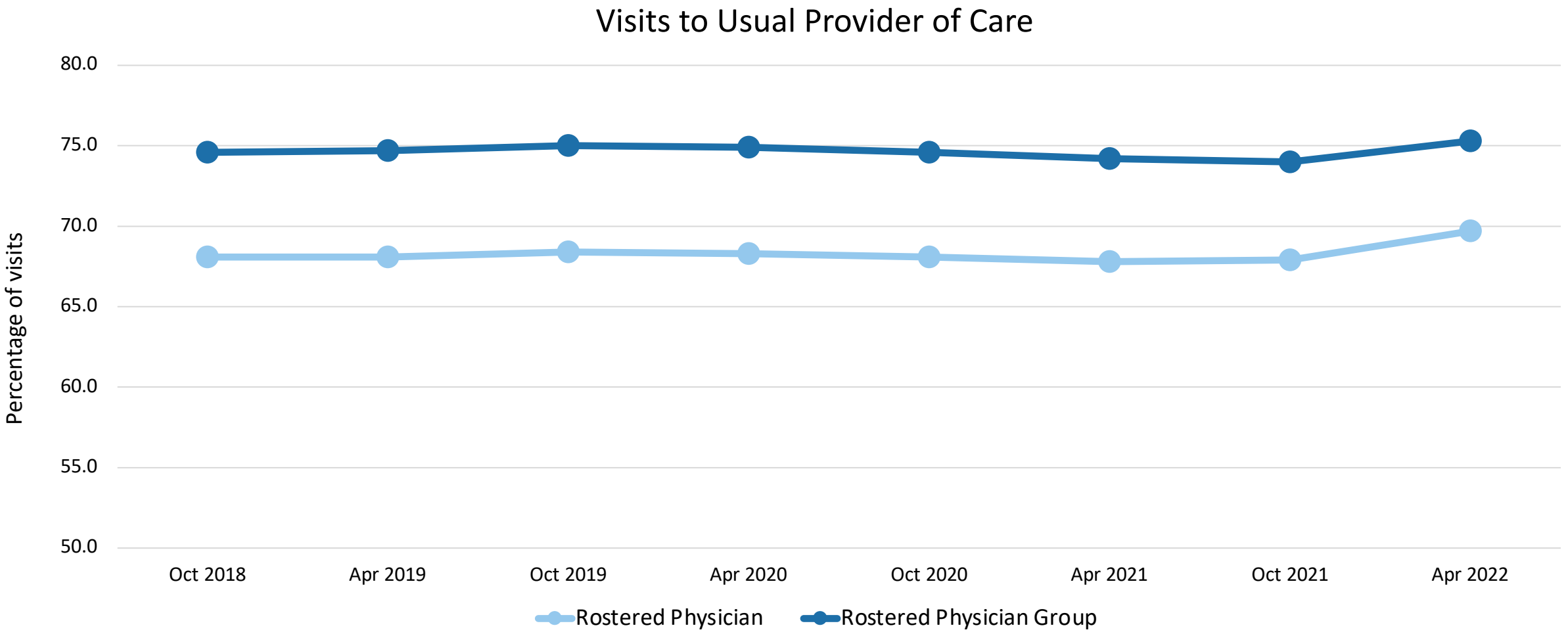
Continuity of Care Indicators

- Visits to usual provider of care (rostered physician)
- Visits to usual provider of care (rostered physician group)

In-person visits by patients to their usual provider of care remain steady over time.

Percentage of in-person visits to a patient's rostered physician and in-person visits to a physician in a patient's rostered group of physicians* show a similar trend of overall a similar measure before and after the COVID-19 pandemic, with an upward trend since October 2021.

*total number of in-person visits in the 2 years prior to index date among all non-focused, comprehensive GP in-person outpatient visits in the 2 years prior to index date.



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Data: OHIP
Analysis: ICES

Primary Care Capacity

- New patient enrolments

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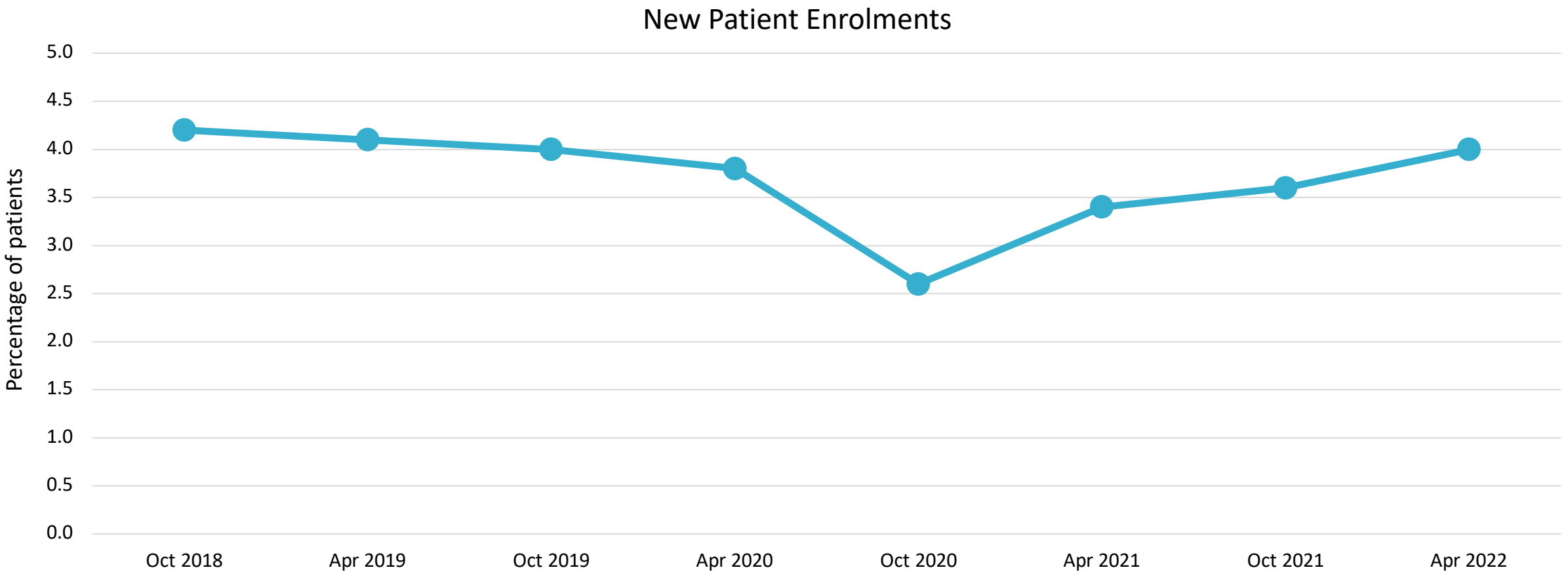
There was a notable decrease in new patient enrolments after the COVID-19 pandemic. Since October 2020, there has been an increase towards the pre-pandemic baseline.

Percentage of all patients that are new enrolments* shows a small decreasing trend prior to the COVID-19 pandemic. New enrolments dropped significantly to a nadir of approximately 2.5% of all patients in October 2020. Since then, there is an increasing trend back towards pre-pandemic measures by April 2022.

*new patient enrolments among all rostered patients in the last 6 months as captured through OHIP billing code Q200 for rostering



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Data: OHIP
Analysis: ICES

Stratifications

Colorectal Cancer Screening

- Stratifications by sex, neighbourhood income, immigration and rurality

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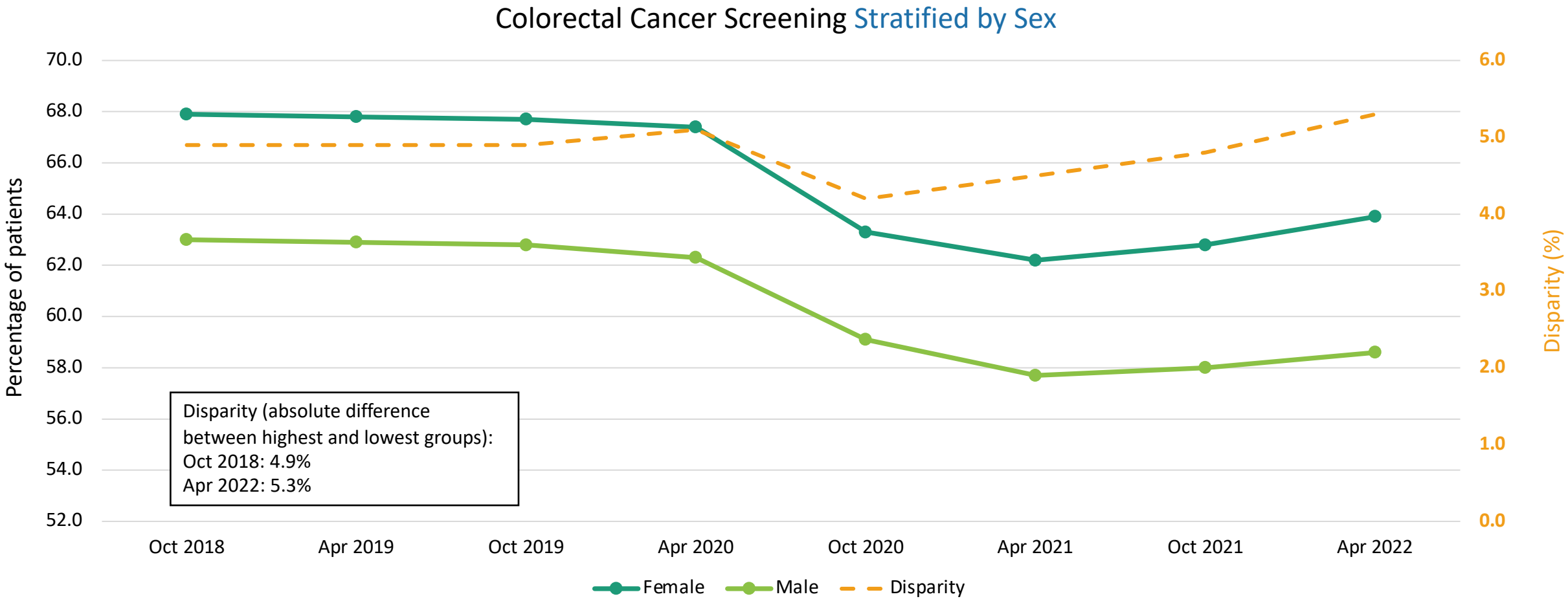
A higher percentage of female patients are up-to-date on colorectal screening compared to male patients.

When stratified by sex, the percentage of screen-eligible patients who were up-to-date on colorectal cancer screening* was higher among female patients when compared to male patients. There disparity between the two groups does not change much over time.

*patients aged 52 to 74 years at index date who had a FOBT within the past 2 years, other investigations (i.e., barium enema, sigmoidoscopy) within the past 5 years or a colonoscopy within the past 10 years



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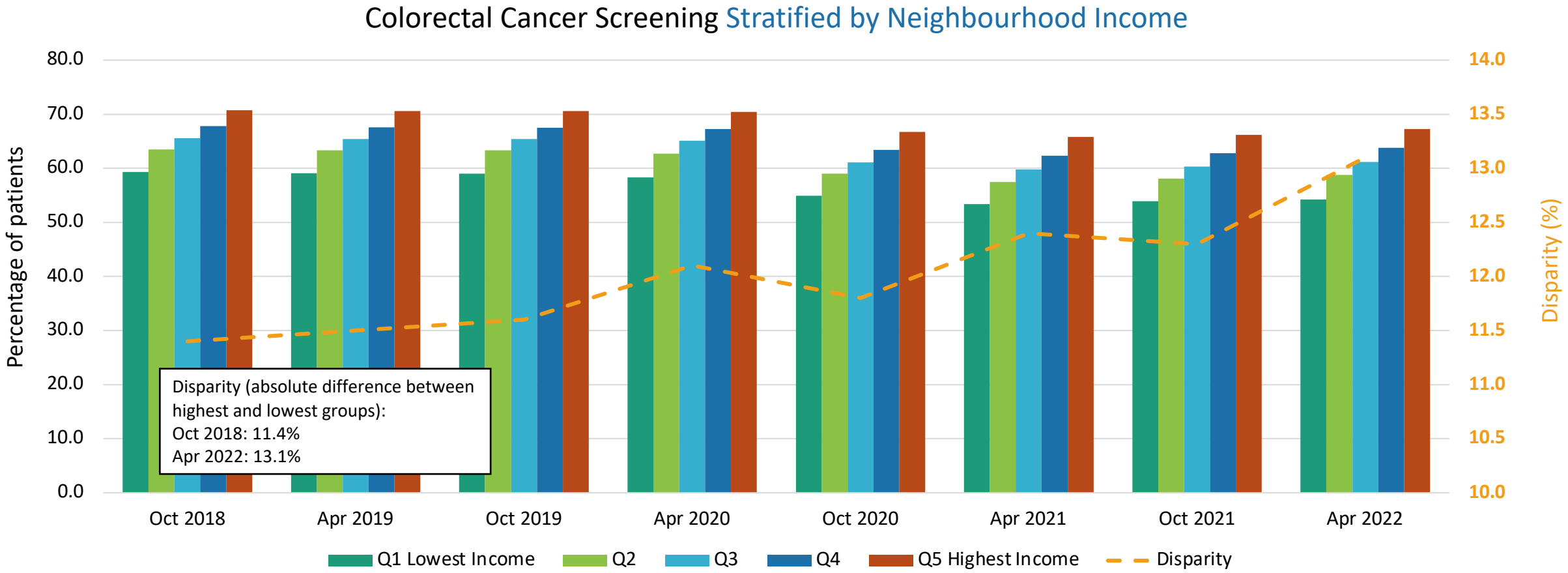
Data: PCPOP
Analysis: ICES

Colorectal screening was consistently lowest in neighbourhoods with lowest income quintile. The gap between lowest and highest groups is 13%.

When stratified by neighbourhood income quintile, the percentage of screen-eligible patients who were up-to-date on colorectal cancer screening* shows a step-wise increase as neighbourhood income quintile increases. The disparity between the lowest group (1st income quintile) and the highest group (5th income quintile) widens over time.

*patients aged 52 to 74 years at index date who had a FOBT within the past 2 years, other investigations (i.e., barium enema, sigmoidoscopy) within the past 5 years or a colonoscopy within the past 10 years



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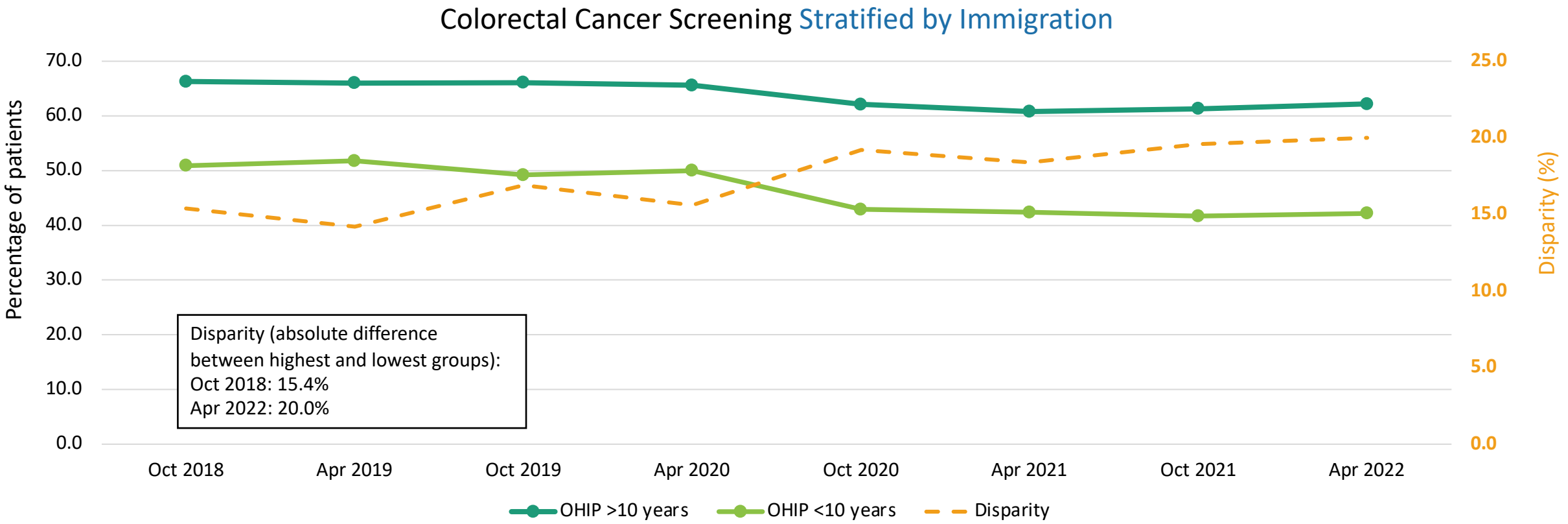
Data: PCPOP
Analysis: ICES

Patients identified as recent immigrants (OHIP registration within previous 10 years) have lower up-to-date colorectal cancer screening compared to other Ontarians. The gap between the two groups increased from 15% to 20% over time.

When stratified by recent OHIP registration within the previous 10 years (proxy for immigration), the percentage of screen-eligible patients who are up-to-date on colorectal cancer screening* is lower among patients who are newcomers to Ontario within the previous 10 years. The disparity between the two groups widen over time.

*patients aged 52 to 74 years at index date who had a FOBT within the past 2 years, other investigations (i.e., barium enema, sigmoidoscopy) within the past 5 years or a colonoscopy within the past 10 years



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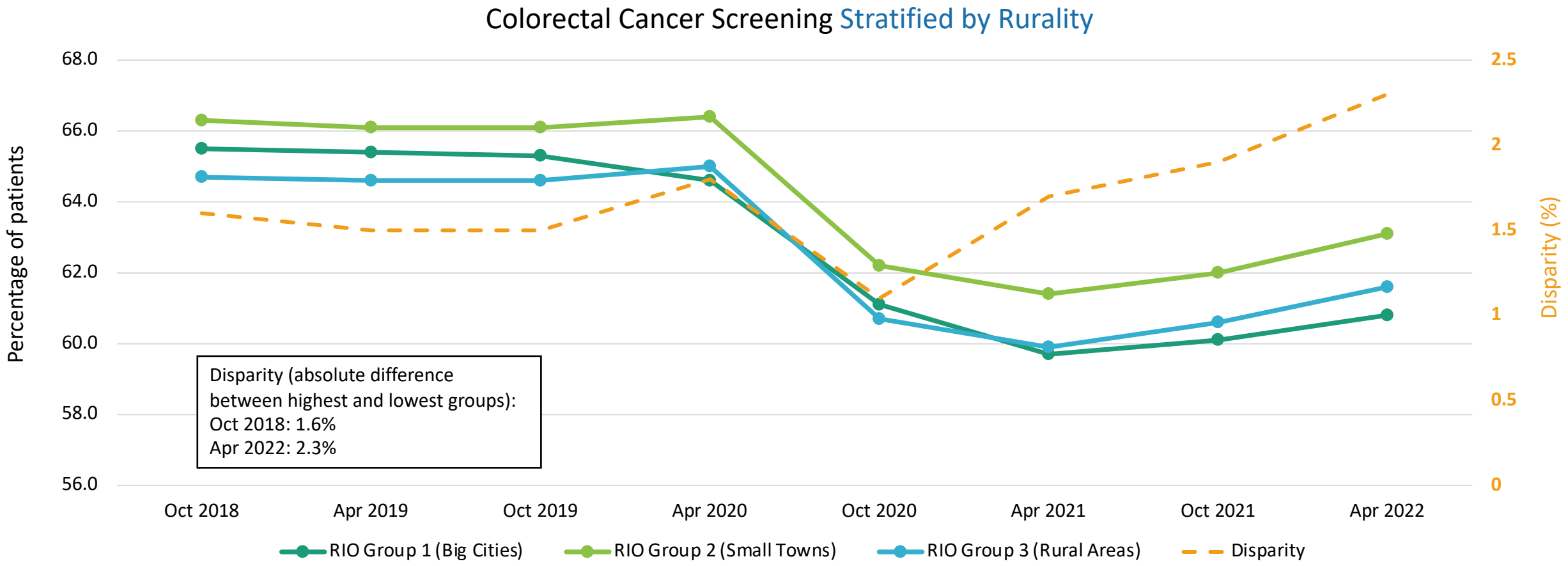
Data: PCPOP
Analysis: ICES

Patients in small towns have a consistently higher colorectal cancer screening rate over time. Patients in big cities have the lowest measures at the most recent time point.

When stratified by the rurality index of Ontario (RIO) score, the percentage of screen-eligible patients who were up-to-date on colorectal cancer screening* was highest for RIO Group 2. Patients in RIO Group 1 were historically the second-highest group but has become the lowest group after the COVID-19 pandemic and has been surpassed by RIO Group 3.

*patients aged 52 to 74 years at index date who had a FOBT within the past 2 years, other investigations (i.e., barium enema, sigmoidoscopy) within the past 5 years or a colonoscopy within the past 10 years



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Data: PCPOP
Analysis: ICES

Stratifications

Patients with Diabetes with In-Person Follow-Up Care

- Stratifications by sex, neighbourhood income, immigration and rurality

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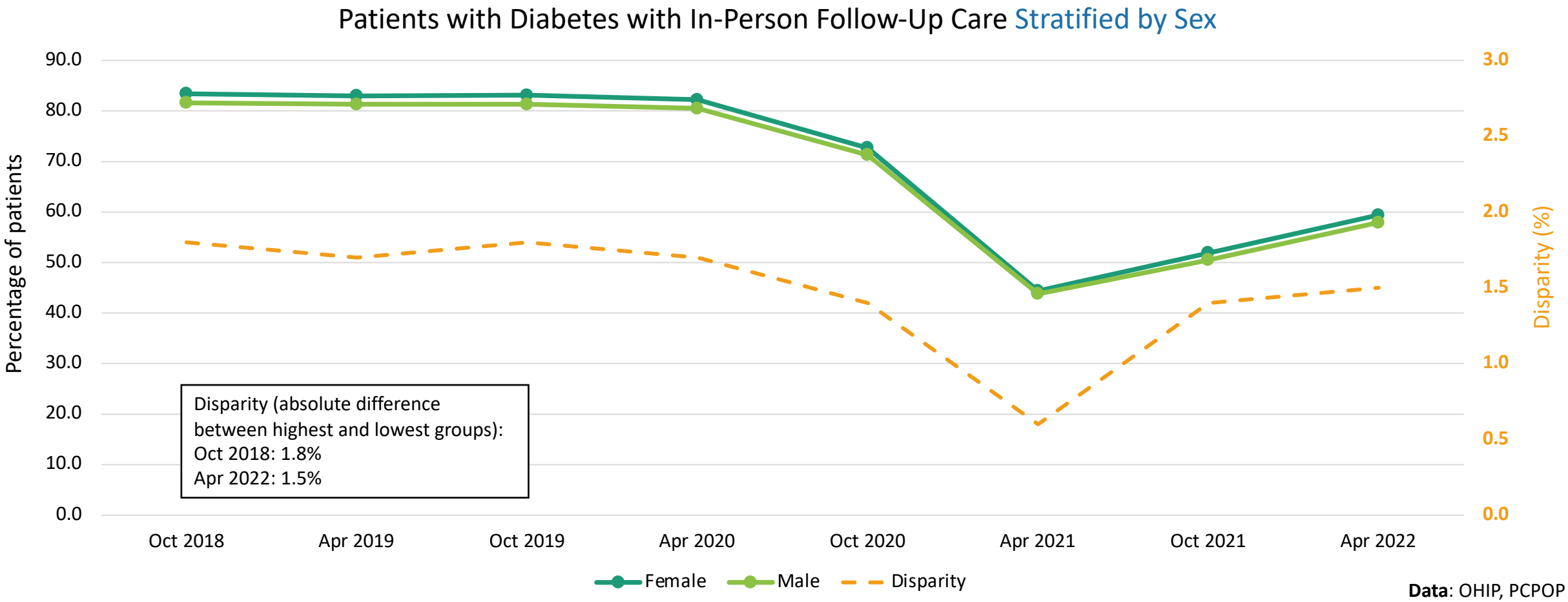
In-person visits by patients with diabetes are overall similar between female and male patients over time.

When stratified by sex, the percentage of diabetic patients* who had an in-person visit to their physician within the last 12 months was very slightly higher among female patients compared to male patients, across the decreasing trend after the COVID-19 pandemic and increasing trend since 2021.

*diabetic patients age 18 and older one year prior to the index date



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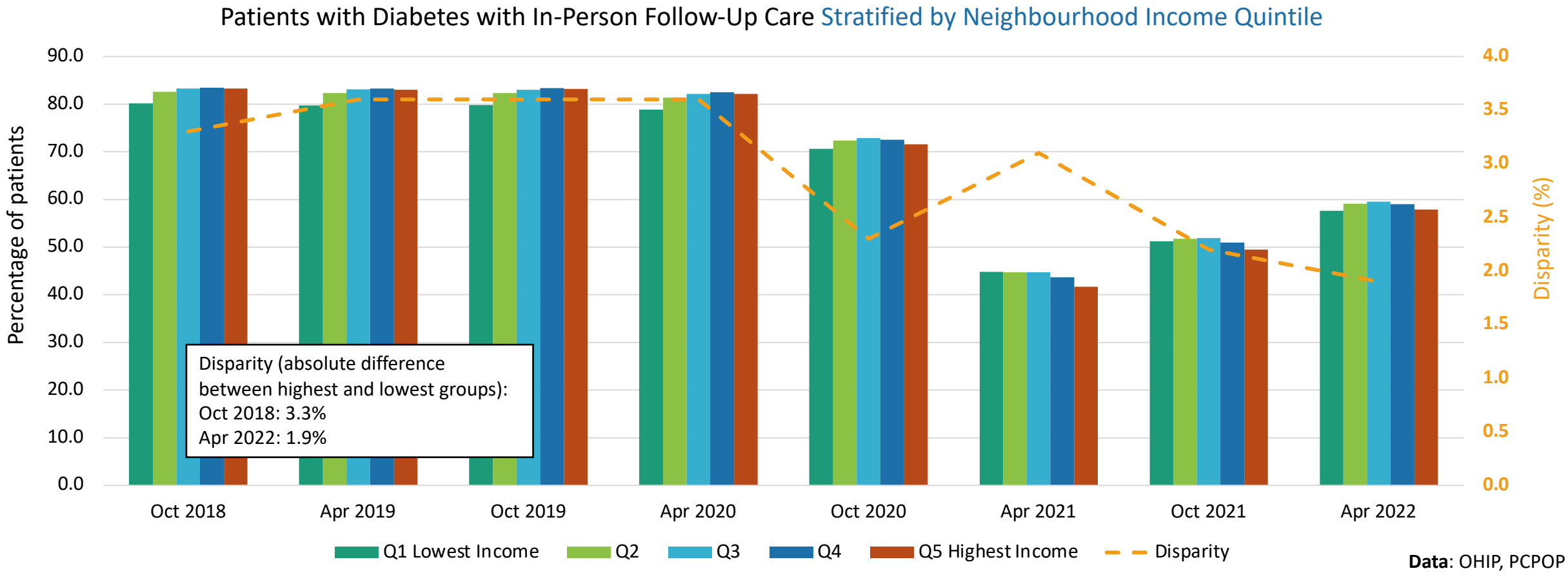
Data: OHIP, PCPOP
Analysis: ICES

In-person visits by patients with diabetes were lowest in neighbourhoods with lowest income quintile before the COVID-19 pandemic. As all groups declined after the pandemic, patients in neighbourhoods with the highest income quintile became the lowest group by April 2021.

When stratified by neighbourhood income quintile, the percentage of diabetic patients* who had an in-person visit to their physician for any reason within the last 12 months shows a general step-wise increase with increasing income quintiles. After the COVID-19 pandemic, patients in the highest income quintile declined past the lowest income quintile. Since April 2021, all groups show an increasing trend.

*diabetic patients age 18 and older one year prior to the index date



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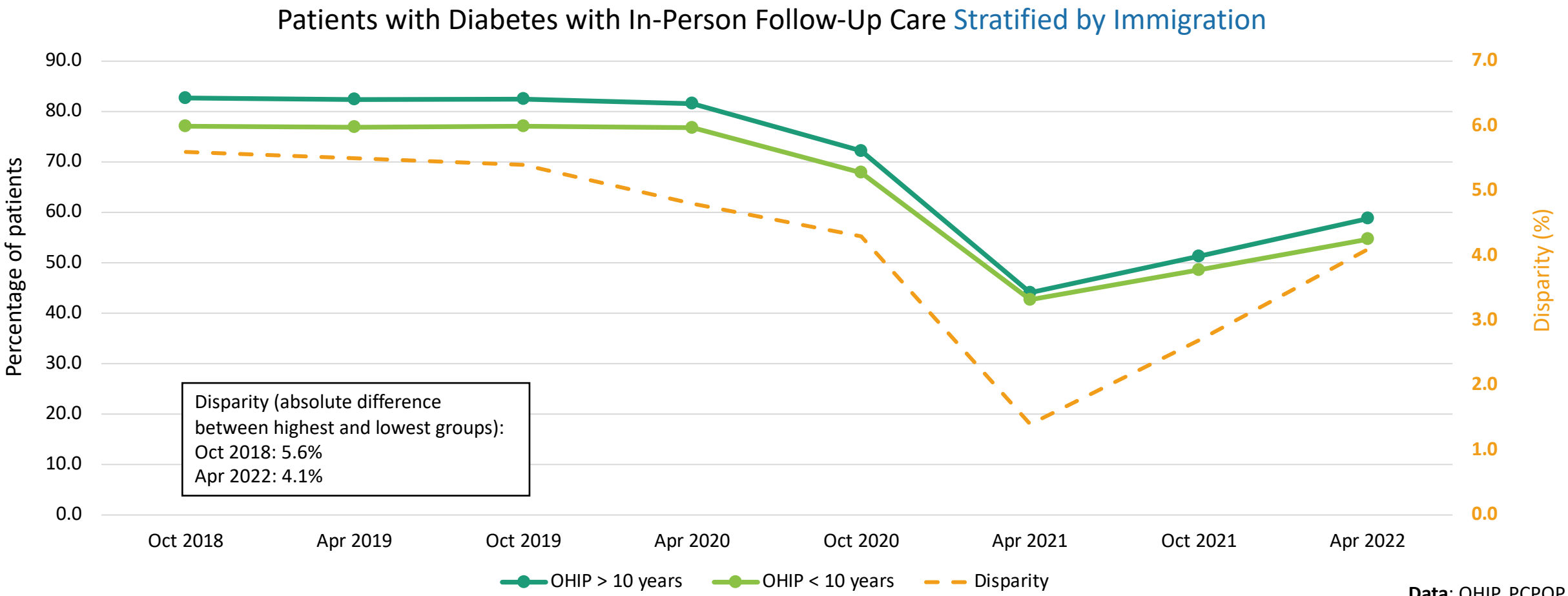
Data: OHIP, PCPOP
Analysis: ICES

In-person visits by patients with diabetes were lower among recent immigrants (OHIP registration within previous 10 years) compared to other Ontarians.

When stratified by recent OHIP registration within previous 10 years (proxy for immigration), the percentage of diabetic patients* who had an in-person visit to their physician for any reason within the last 12 months is lower among patients with recent registration. The disparity between the groups narrowed after the COVID-19 pandemic as both groups showed decreasing trends. As both groups started increasing after April 2021, the disparity started widening again

*diabetic patients age 18 and older one year prior to the index date



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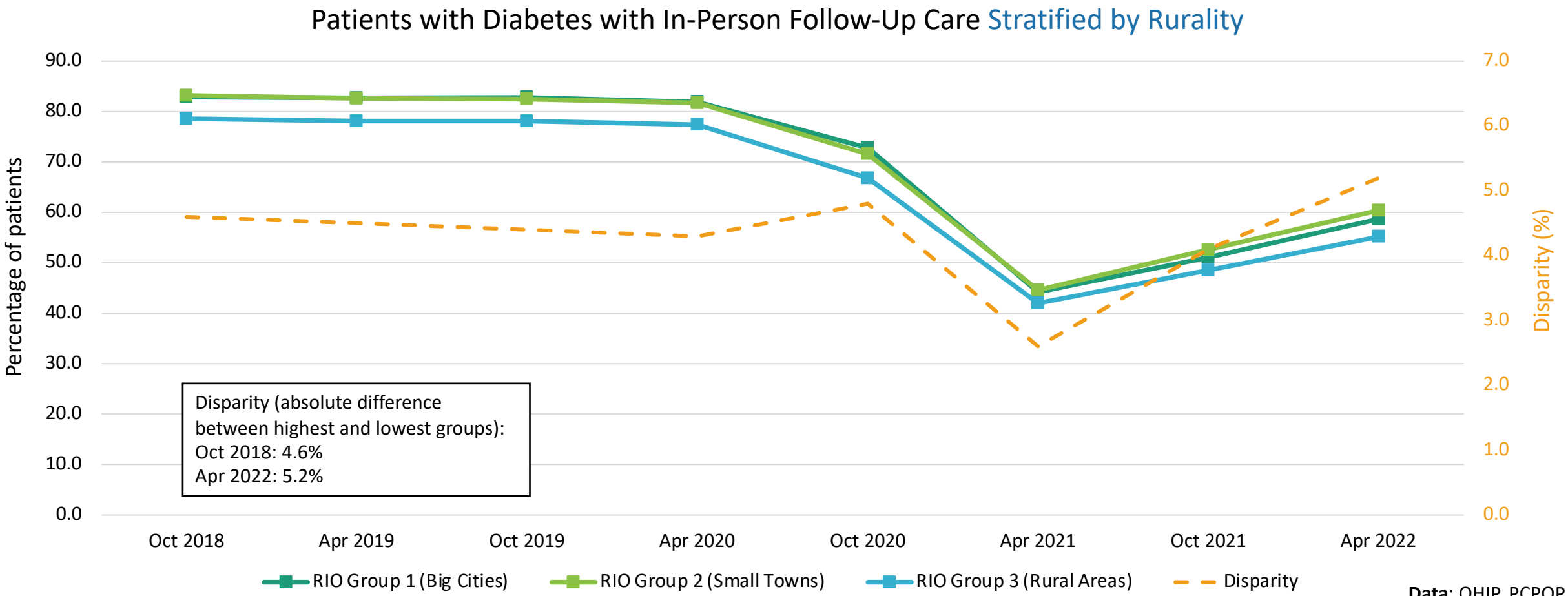
Data: OHIP, PCPOP
Analysis: ICES

In-person visits by patients with diabetes are highest among patients in small towns and lowest among patients in rural areas.

When stratified by the rurality index of Ontario (RIO) score, the percentage of diabetic patients* who had an in-person visit to their physician within the last 12 months shows that those in RIO Group 1 and 2 have higher measures than patients in RIO Group 3. The disparities between the groups narrow slightly as all groups showed a decreasing trend. As all groups show increasing measures after April 2021, the disparity between groups is widening as well, with patients in the RIO Group 2 having the highest measures

*diabetic patients age 18 and older one year prior to the index date



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Data: OHIP, PCPOP
Analysis: ICES

Limitations

- Cervical cancer screening data was excluded from the analysis due to high prevalence of usage of hospital-based laboratories
- Immigration stratification does not represent the full data for new immigrants as the proxy measure for immigration is OHIP eligibility within 10 years prior to the cycle index date, therefore this does not capture individuals <10 years at index date. This proxy measure also captures inter-provincial migrants.
- We were limited in our assessment of primary care quality measures to those that can be measured in health administrative databases

Summary

- Cancer screening, in-person follow-up for patients with diabetes or hypertension, and retinopathy screening in patients with diabetes declined after the COVID-19 pandemic and have not yet returned to their pre-pandemic baseline
- Visits to usual care provider and statin prescribing among patients with diabetes remained the same as pre-pandemic baseline
- High risk prescribing decreased over time
- New patient enrolments have returned to pre-pandemic baseline
- Existing income-related disparities in colorectal cancer screening widened during the COVID-19 pandemic

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Acknowledgements

ICES Team: Alex Kopp, Beth Elston, Samantha Lee, Rick Glazier

DFCM Team: Tara Kiran, Adrina Zhong, Kirsten Eldridge, Erin Plenert

This study was supported by ICES, which is funded by an annual grant from the Ontario Ministry of Health (MOH) and the Ministry of Long-Term Care (MLTC). This study also received funding from: CIHR Grant 201806SOP-417727. We thank IQVIA Solutions Canada Inc. for use of their Drug Information File. This document used data adapted from the Statistics Canada Postal CodeOM Conversion File, which is based on data licensed from Canada Post Corporation, and/or data adapted from the Ontario Ministry of Health Postal Code Conversion File, which contains data copied under license from ©Canada Post Corporation and Statistics Canada. Parts of this material are based on data and information compiled and provided by: Ontario Ministry of Health (MOH), CIHI, and Ontario Health (OH). The analyses, conclusions, opinions and statements expressed herein are solely those of the authors and do not reflect those of the funding or data sources; no endorsement is intended or should be inferred.

The use of the data in this project is authorized under section 45 of Ontario's Personal Health Information Protection Act (PHIPA) and does not require review by a Research Ethics Board.