

# Impact of the COVID-19 pandemic on colorectal cancer screening in Ontario, Canada: What Did We Learn?

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**Ontario Health**  
Cancer Care Ontario

# Objectives

- To describe key activities to support the management of the gastrointestinal (GI) endoscopy backlog and the gradual restart of colorectal cancer (CRC) screening services
- To describe the impact of COVID-19 on CRC screening in Ontario across four time periods: pre-, early-, mid- and late-COVID-19

# Ontario's ColonCancerCheck (CCC) program

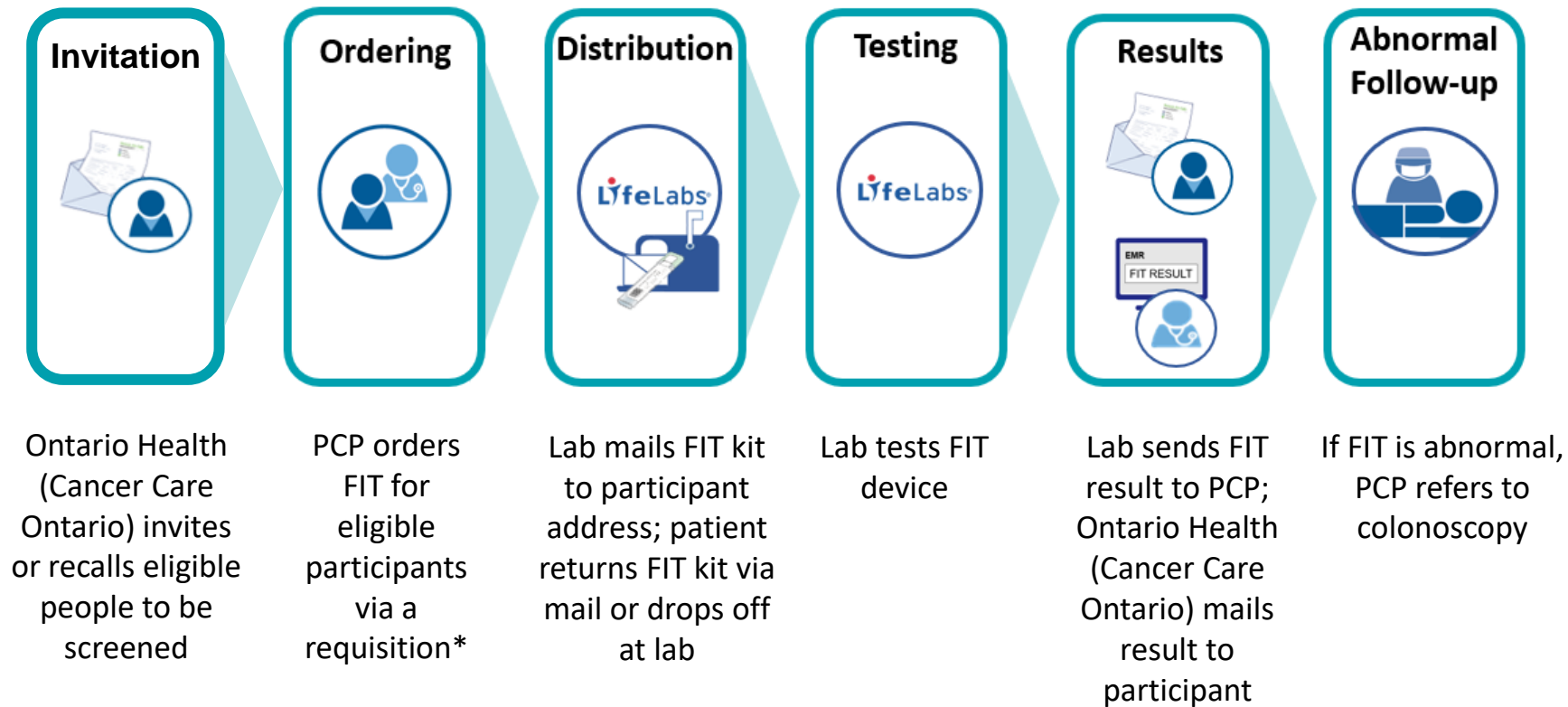
- Canada's first organized province-wide CRC screening program launched in 2008
- Sends letters to eligible people
- Screening offered to people ages 50-74 via primary care provider (PCP)

# CCC's recommendations

- Screening test used depends on risk level:
  - **Average risk:** Fecal immunochemical test (FIT) since June 2019
  - **Increased risk ( $\geq 1$  first-degree relative with CRC):**  
Colonoscopy
- Post-polypectomy surveillance recommendations: FIT for prior low risk adenoma
- CCC's recommendations are promoted centrally with Regional Cancer Programs and regional clinical leaders

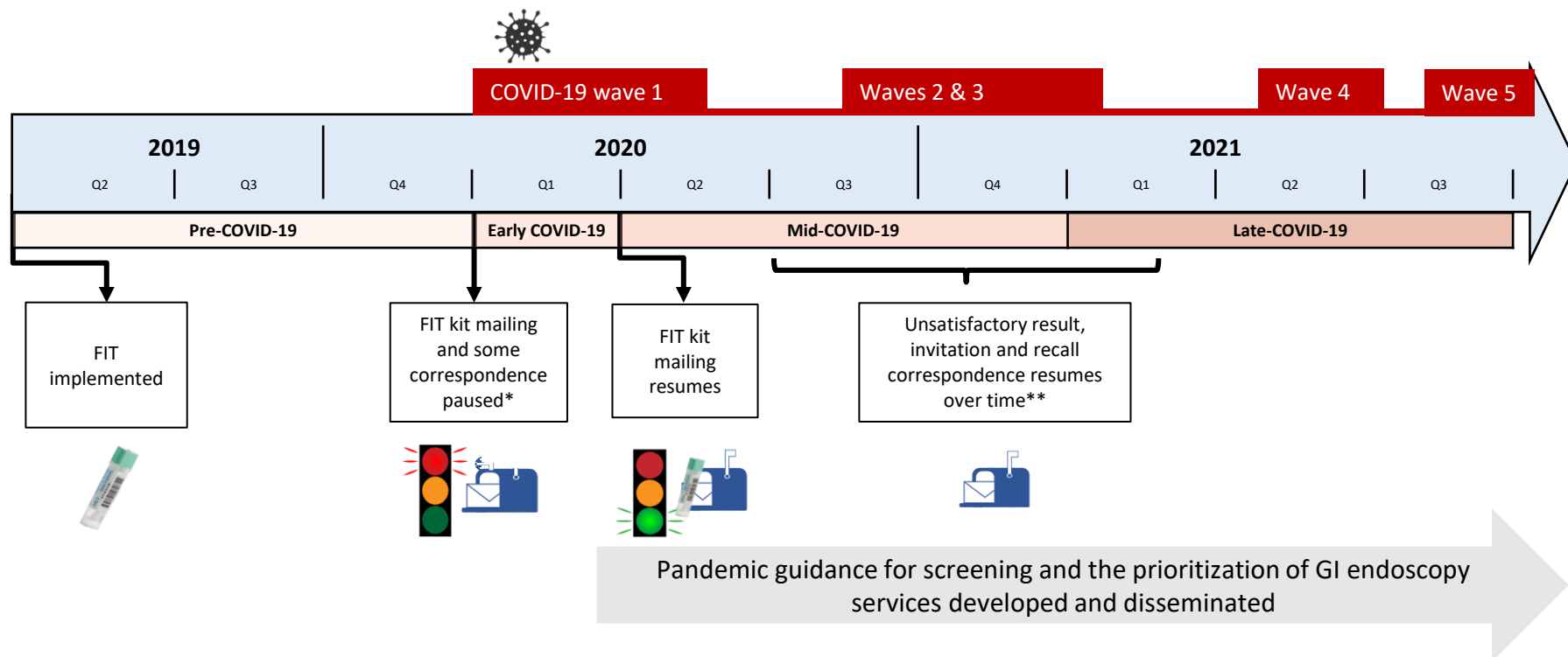


# FIT program in Ontario



\*Participants without a PCP can obtain FIT through Telehealth Ontario

# COVID-19 impacts on screening



\*Due to a Ministry of Health directive, Ontario Health (Cancer Care Ontario) paused correspondence letters including result letters for unsatisfactory tests, invitation and recall letters

\*\*Reminder letters have yet to be resumed

Q1: Apr—Jun  
Q2: Jul—Sept  
Q3: Oct—Dec  
Q4: Jan—Mar

# Pandemic guidance: Prioritization of endoscopy resources

Priority Level	Definition	GI Endoscopy Recommendation
<b>A</b>	Critical and require endoscopy	Always perform
<b>B</b>	<b>B1</b> Non-critical but early negative impact	Should perform
	<b>B2</b> Non-critical but mid- to long-term negative impact	Could perform
<b>C</b>	People who are generally healthy with no anticipated change in outcome expected from delay	Could perform in some circumstances
<b>D</b>	People who can be screened for CRC with FIT instead of colonoscopy	Do not perform

Includes FIT-positive colonoscopies

Screen with FIT for people at average risk and people with prior low risk adenoma

Pandemic guidance encouraged converting low-yield colonoscopy (i.e., average risk screening colonoscopy and prior low risk adenoma) to high-yield colonoscopy (e.g., FIT-positive)

# Early Ontario data: Cancer detection rate for hospital-based colonoscopies by indication

Colonoscopy indication	2018	2019	2020
Abnormal FIT		5.02%	4.73%
Abnormal guaiac fecal occult blood test	3.92%	3.88%	3.40%
Symptomatic	1.66%	1.58%	1.80%
Other screening*	0.44%	0.49%	0.65%
First-degree relative	0.38%	0.31%	0.34%
Surveillance	0.40%	0.40%	0.49%
Total	1.03%	1.07%	1.39%

*\*Other screening refers to average risk screening colonoscopy*

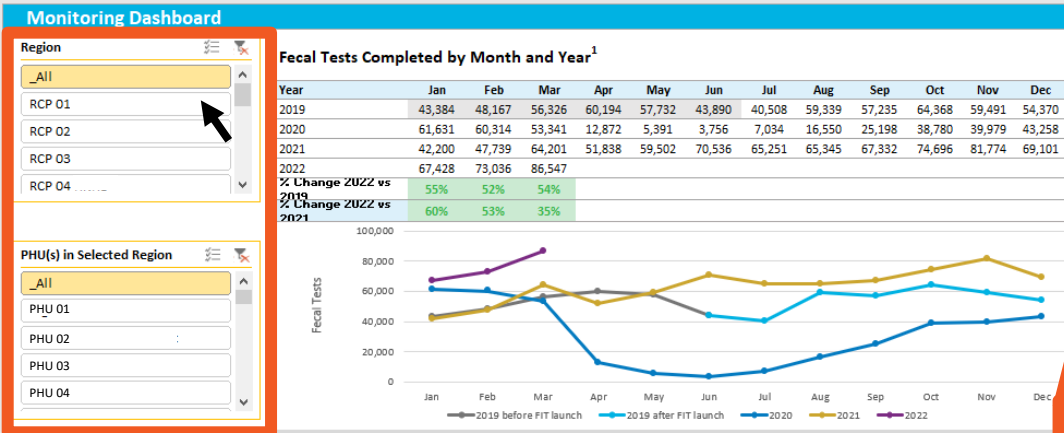
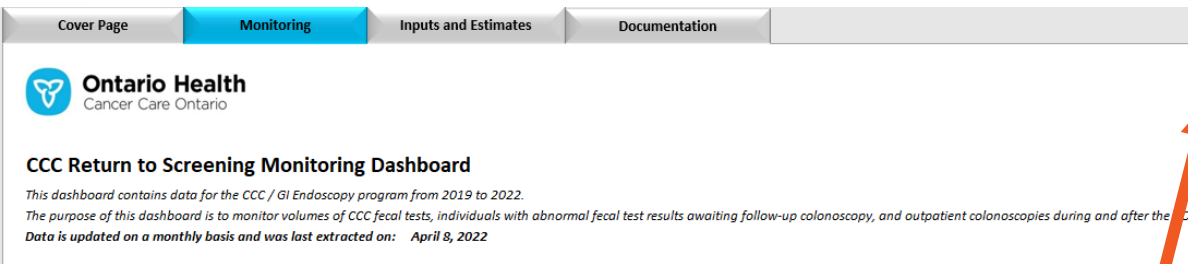


# COVID-19 GI endoscopy regional monitoring and planning tool

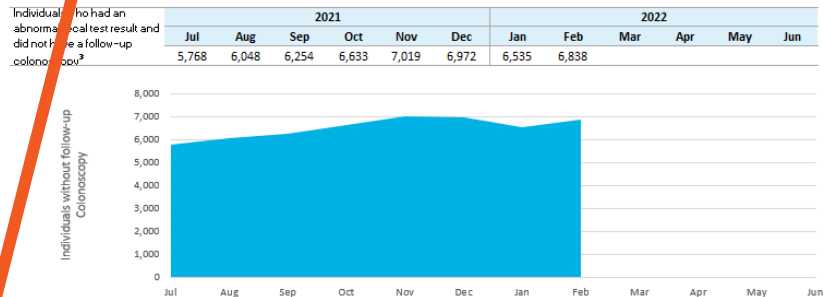
- Ontario Health (Cancer Care Ontario) developed a regional monitoring and planning tool to help Regional Cancer Programs plan for and manage the resumption of screening and their endoscopy backlog



# COVID-19 GI endoscopy regional monitoring and planning tool cont'd

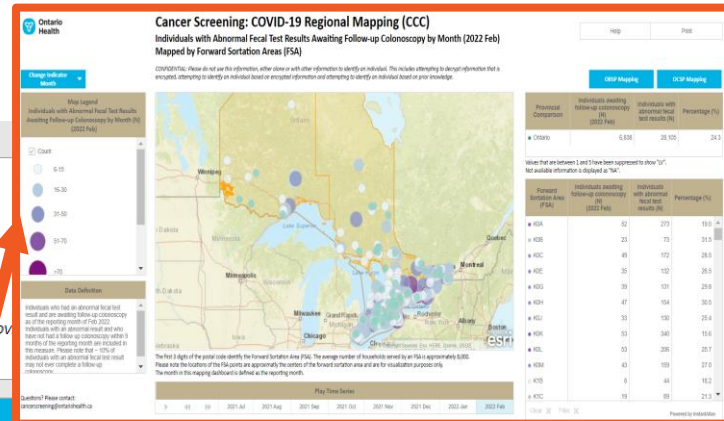


## Individuals with Abnormal Fecal Test Results without Follow-up Colonoscopy by Month, 2021 - 2022<sup>2</sup>



This indicator can also be explored geographically at the FSA level on the map, please click here.

Data can be viewed at the regional-level



# COVID-19 GI endoscopy regional monitoring and planning tool cont'd

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## CCC Return to Screening Monitoring Dashboard

This dashboard contains data for the CCC / GI Endoscopy program from 2019 to 2022.

The purpose of this dashboard is to monitor volumes of CCC fecal tests, individuals with abnormal fecal test results awaiting follow-up colonoscopy, and outpatient colonoscopies during and after the COVID-19 pandemic.

Data is updated on a monthly basis and was last extracted on: April 8, 2022

### Monitoring Dashboard

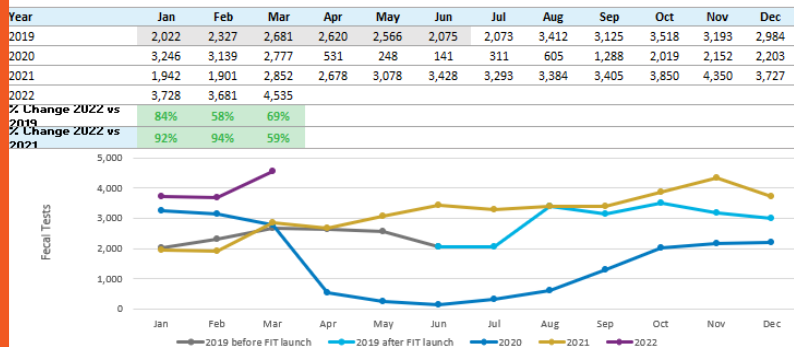
Region

- \_All
- RCP 01
- RCP 02
- RCP 03
- RCP 04

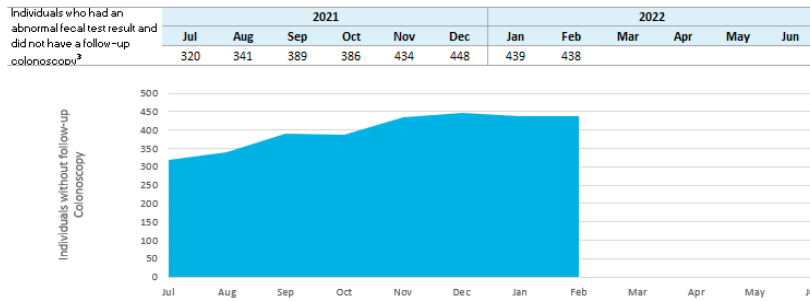
PHU(s) in Selected Region

- \_All
- PHU 01
- PHU 02
- PHU 03

#### Fecal Tests Completed by Month and Year<sup>1</sup>

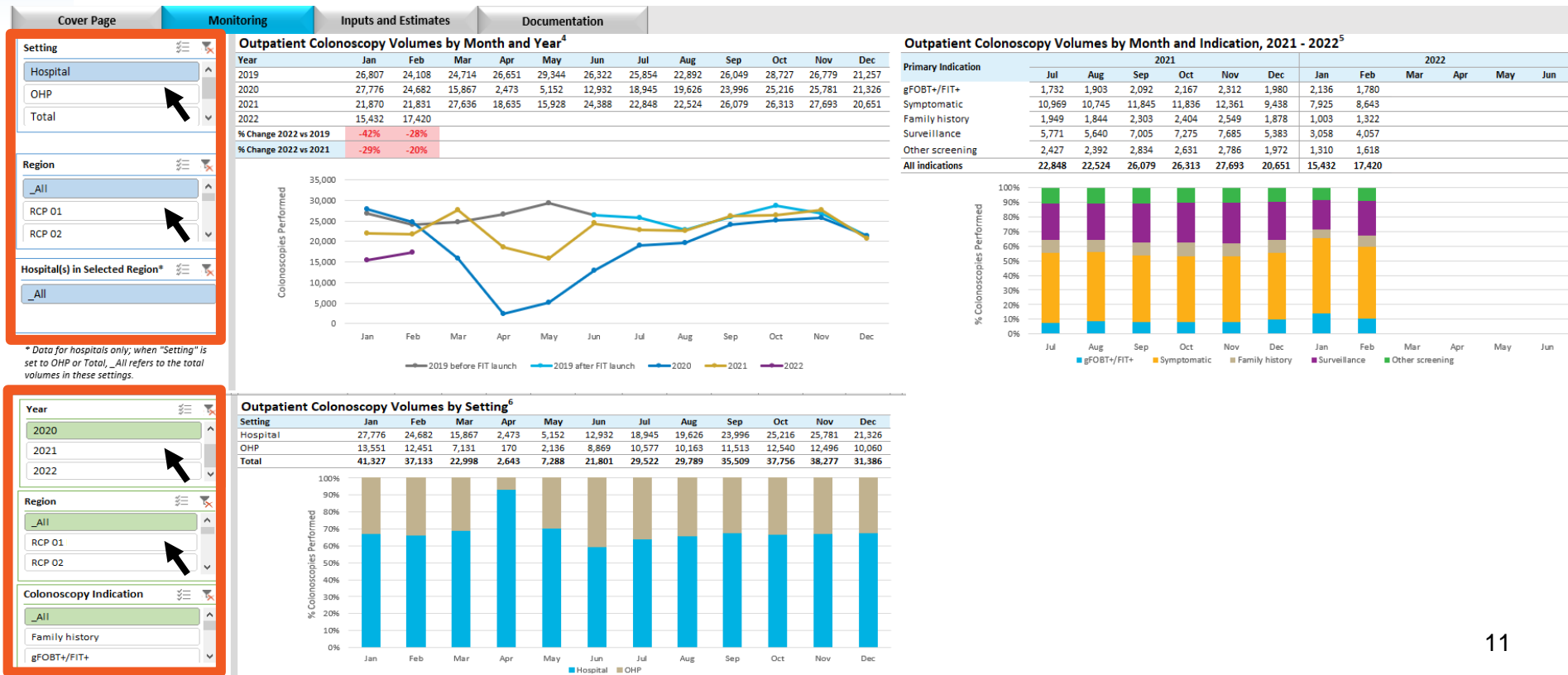


#### Individuals with Abnormal Fecal Test Results without Follow-up Colonoscopy by Month, 2021 - 2022<sup>2</sup>



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# COVID-19 GI endoscopy regional monitoring and planning tool cont'd



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Setting

Hospital  
OHP  
Total

Region

\_All  
RCP Q1  
RCP Q2

Hospital(s) in Selected Region\*

\_All

\* Data for hospitals only; when "Setting" is set to OHP or Total, \_All refers to the total volumes in these settings.

Year

2020  
2021  
2022

Region

\_All  
RCP Q1  
RCP Q2

Colonoscopy Indication

\_All  
Family history  
gFOBT+/FIT+

Outpatient Colonoscopy Volumes by Month and Year<sup>4</sup>

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	287	237	261	297	256	256	303	208	238	328	253	192
2020	266	253	134	0	55	245	281	236	299	289	304	219
2021	244	195	257	247	247	258	227	251	230	361	346	298
2022	125	209										

% Change 2022 vs 2019

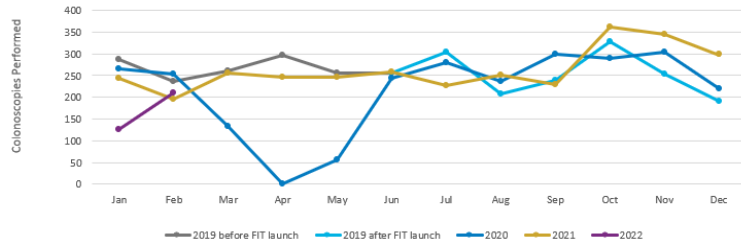
-56%

-12%

% Change 2022 vs 2021

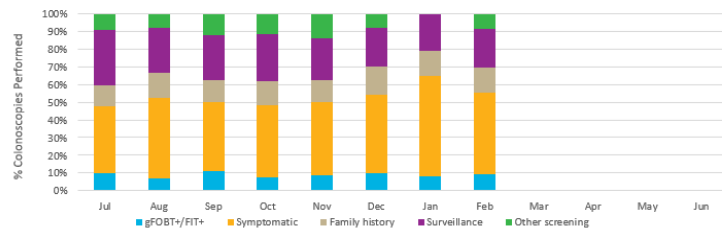
-49%

7%



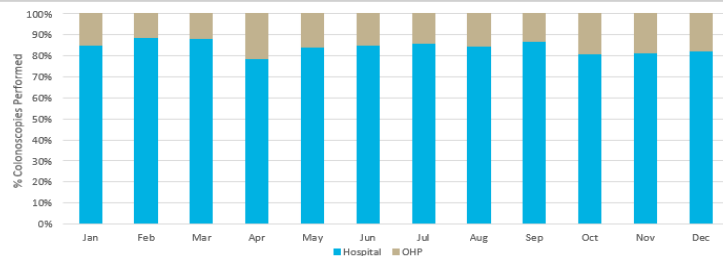
Outpatient Colonoscopy Volumes by Month and Indication, 2021 - 2022<sup>5</sup>

Primary Indication	2021						2022					
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
gFOBT+/FIT+	22	18	26	28	30	30	10	19				
Symptomatic	87	114	89	147	143	131	71	97				
Family history	26	36	29	48	44	49	18	29				
Surveillance	71	63	59	97	82	64	26	46				
Other screening	21	20	27	41	47	24	0	18				
All indications	227	251	230	361	346	298	125	209				

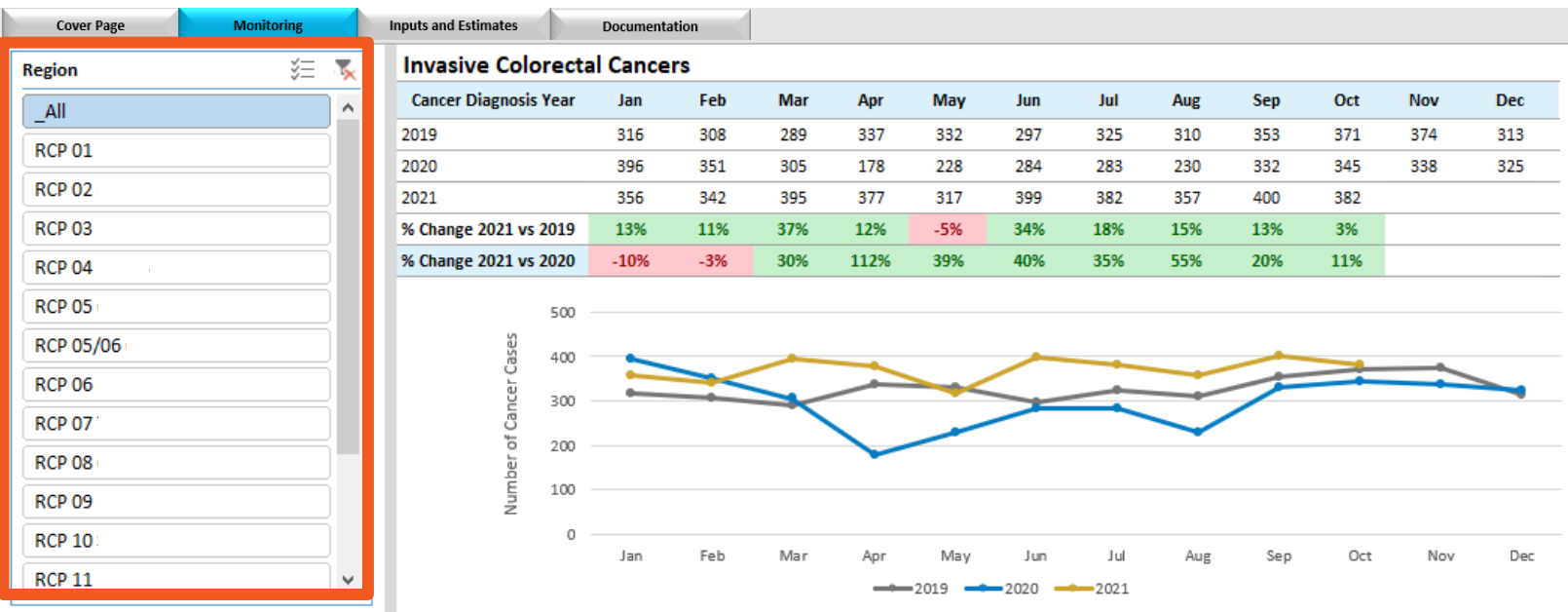


Outpatient Colonoscopy Volumes by Setting<sup>6</sup>

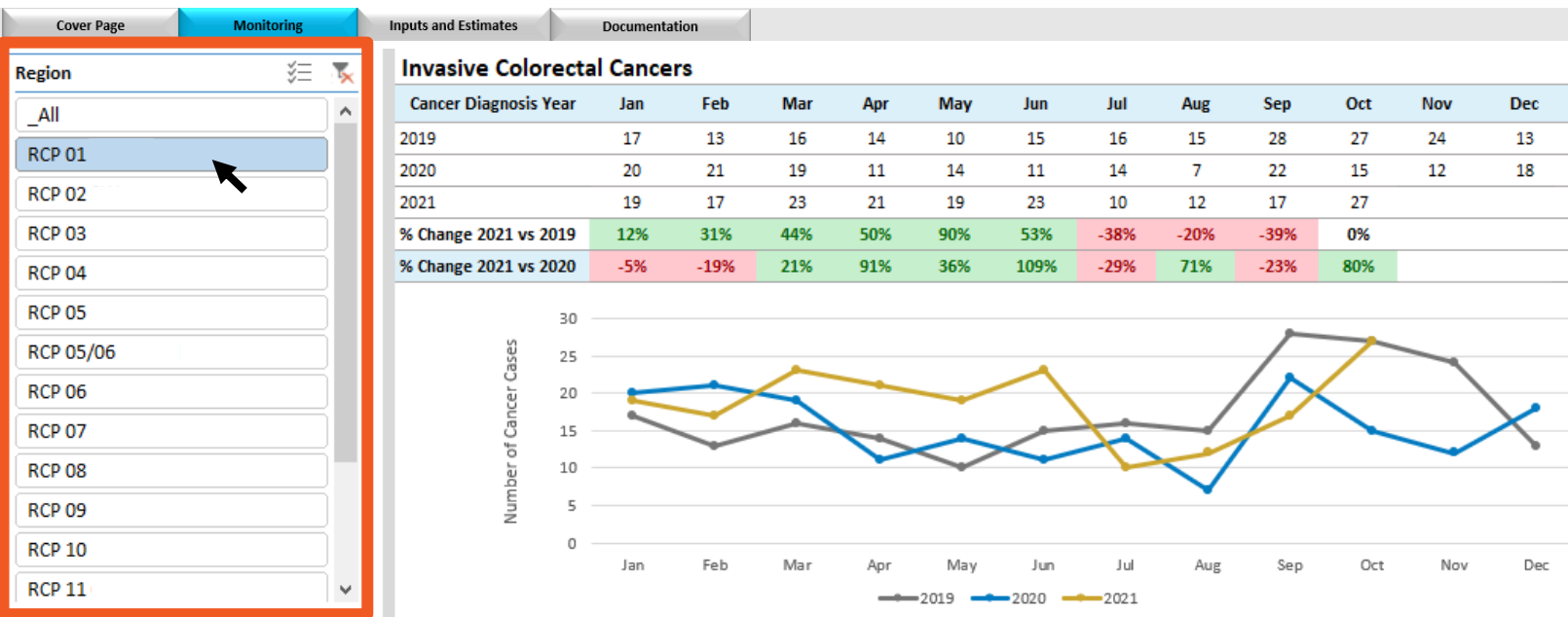
Setting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hospital	1,378	1,516	1,928	919	1,295	1,475	1,392	1,383	1,523	1,520	1,523	1,372
OHP	244	195	257	247	247	258	227	251	230	361	346	298
Total	1,622	1,711	2,185	1,166	1,542	1,733	1,619	1,634	1,753	1,881	1,869	1,670



# COVID-19 GI endoscopy regional monitoring and planning tool cont'd



# COVID-19 GI endoscopy regional monitoring and planning tool cont'd



# COVID-19 GI endoscopy regional monitoring and planning tool cont'd

## Monitoring

## Inputs and Estimates

## Documentation

## Data Inputs

### Step 1. Select your region

"Baseline" volumes are monthly estimates of the number of hospital outpatient colonoscopies that would have been performed under normal, non-pandemic circumstances in the remaining months of 2020 and in 2021. These volumes are based on actual volumes of colonoscopies performed in 2019 and adjusted for 1% growth per year. These volumes do not account for other non-pandemic factors that may impact 2020 and 2021 volumes, for example, hospital mergers or changes in colonoscopy practice due to FIT implementation.

LHIN 01	Observed									Estimates for Ontario												
	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
Baseline colonoscopy volumes (in absence of pandemic)	15,793	2,468	5,079	12,874	18,359	19,389	23,370	23,022	27,047	21,470	27,346	24,593	25,212	27,188	29,934	26,852	26,374	23,352	26,573	29,304	27,317	21,684

[Click to reset inputs for Steps 2, 3 and 4 to default values](#)

**Step 2. Select expected proportion of "low-risk" colonoscopies to be converted to FIT screening**

As per COVID-19 Tip Sheet #09-Guidance for Increasing GI Endoscopy Services, people who can be screened for colorectal cancer with FIT instead of colonoscopy should be referred back to their primary care provider with the recommendation to screen with FIT when FIT screening resumes. This input represents the expected reduction in demand for "low-risk" colonoscopies in the remaining months of 2020 and in 2021 relative to "baseline" volumes (shown in Step 1). All colonoscopies with "Other Screening" indication and 50% of colonoscopies with "Surveillance" indication are deemed "low-risk" for

50%

### Step 3. Set expected % operating capacity (relative to baseline volume)

*"Expected % operating capacity" refers to the expected percentage of "baseline" colonoscopy volumes (shown in Step 1) that hospitals are expected to perform during the gradual restart of cancer screening services. For each month, input an expected % operating capacity value and the expected colonoscopy capacity will be calculated in the next row below.*

	Observed								Estimates for Ontario													
	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
Expected % operating capacity (relative to baseline volume)	63%	9%	17%	48%	70%	84%	89%	79%	95%	100%	105%	110%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Expected colonoscopy capacity	15,793	2,468	5,079	12,874	18,359	19,389	23,370	23,022	25,694	21,470	28,713	27,052	28,994	31,266	34,424	30,880	30,330	26,855	30,558	33,700	31,415	24,937

#### Step 4. Allocate expected capacity by indication

Please use the following table to allocate the expected colonoscopy capacity (calculated in Step 3) across indications. The default allocation values prioritize the recovery of gFOBT+/FIT+ and symptomatic colonoscopies to align with guidance from COVID-19 Tip Sheet #09-Guidance for Increasing GI Endoscopy Services. **Note: the allocation values in the following table must add up to 100% in each month.**

[illegible]



# COVID-19 GI endoscopy regional monitoring and planning tool cont'd

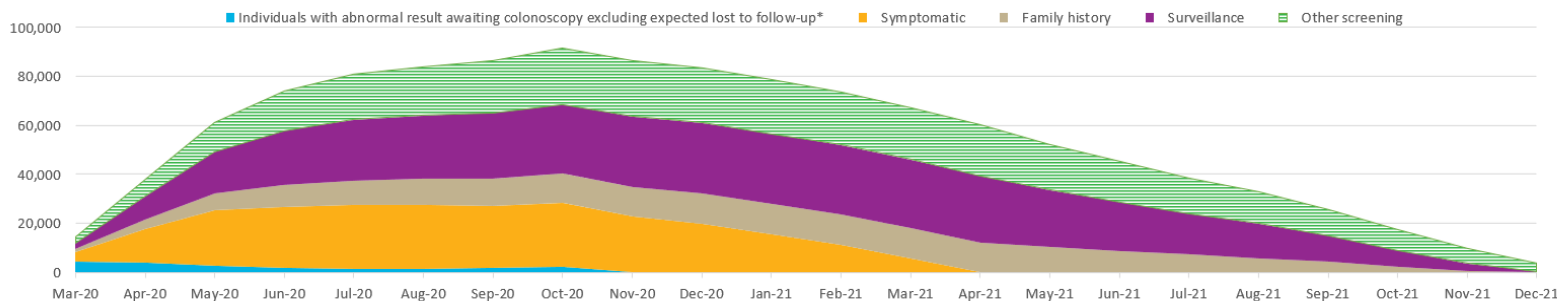
## Projected Outpatient Colonoscopy Volumes and Cumulative Backlog at Hospitals in Ontario

Figure 2: Projected Hospital Outpatient Colonoscopy Backlog by Indication

	Observed								Estimates of COVID-related backlog for Ontario*													
gFOBT+/FIT+	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
Individuals with abnormal result awaiting colonoscopy	6,907	6,300	4,927	3,419	2,764	2,756	2,944	3,264	Not used in backlog calculation													
Individuals with abnormal result awaiting colonoscopy excluding expected lost to follow-up*	4,531	4,028	2,888	1,618	1,241	1,439	1,774	2,218	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other indications																						
Symptomatic	3,614	13,481	22,392	25,226	26,217	25,980	25,346	26,217	22,631	19,770	15,432	11,185	5,793	0	0	0	0	0	0	0	0	0
Family history	1,211	3,835	6,785	8,825	10,109	10,701	11,207	11,894	12,188	12,411	12,492	12,556	12,472	12,179	10,313	8,711	7,232	5,872	4,191	2,291	539	0
Surveillance	2,727	9,677	17,133	22,300	24,770	26,036	26,835	28,352	28,827	28,820	28,610	28,239	27,745	27,186	23,294	19,909	16,710	14,071	10,726	6,768	3,149	363
Other screening	2,336	7,145	12,184	15,887	18,396	19,894	21,234	22,986	22,678	22,304	22,115	21,802	21,376	20,881	18,604	16,591	14,679	12,963	10,788	8,281	5,921	3,529
Total backlog	14,420	38,167	61,382	73,855	80,733	84,051	86,395	91,667	86,324	83,304	78,648	73,783	67,386	60,246	52,210	45,211	38,621	32,906	25,705	17,340	9,609	3,892

†Default values for the COVID-related backlog for gFOBT+/FIT+ colonoscopies in future months are set at 0 based on the assumption of continued adherence to the priority classification framework for GI endoscopy described in COVID-19 Tip Sheet #09-Guidance for Increasing GI Endoscopy Services.

\*the "backlog" of gFOBT+/FIT+ colonoscopies in observed months is calculated as the number of individuals who had an abnormal fecal test result and did not have a follow-up colonoscopy, excluding individuals who may never complete a follow-up colonoscopy (expected to be 10% of all individuals with an abnormal result within the past 9 months, estimated to be between 2,000 and 2,500 individuals in Ontario during normal, non-pandemic circumstances).

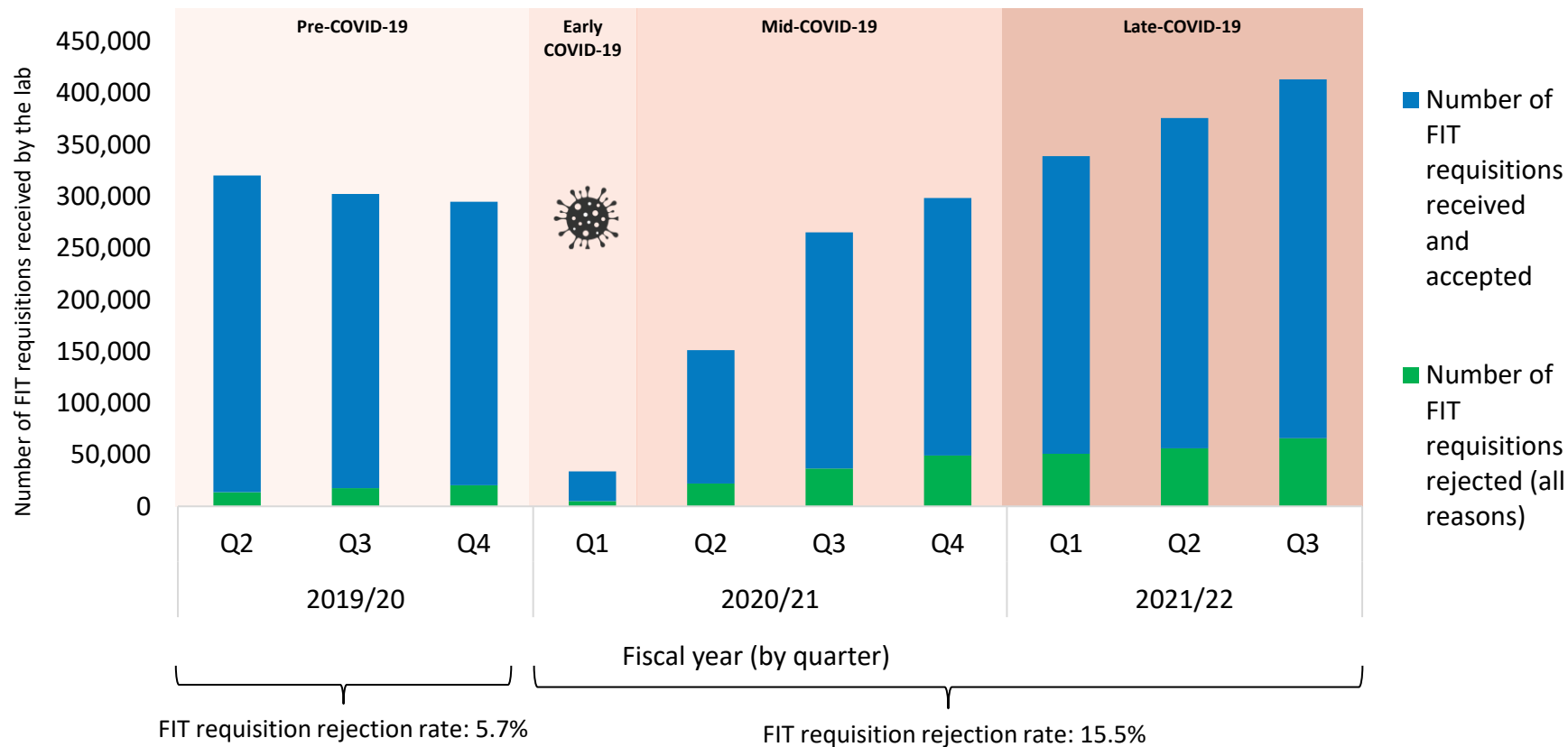


\*the "backlog" of gFOBT+/FIT+ colonoscopies in observed months is calculated as the number of individuals who had an abnormal fecal test result and did not have a follow-up colonoscopy, excluding individuals who may never complete a follow-up colonoscopy (10% of all individuals with an abnormal result).

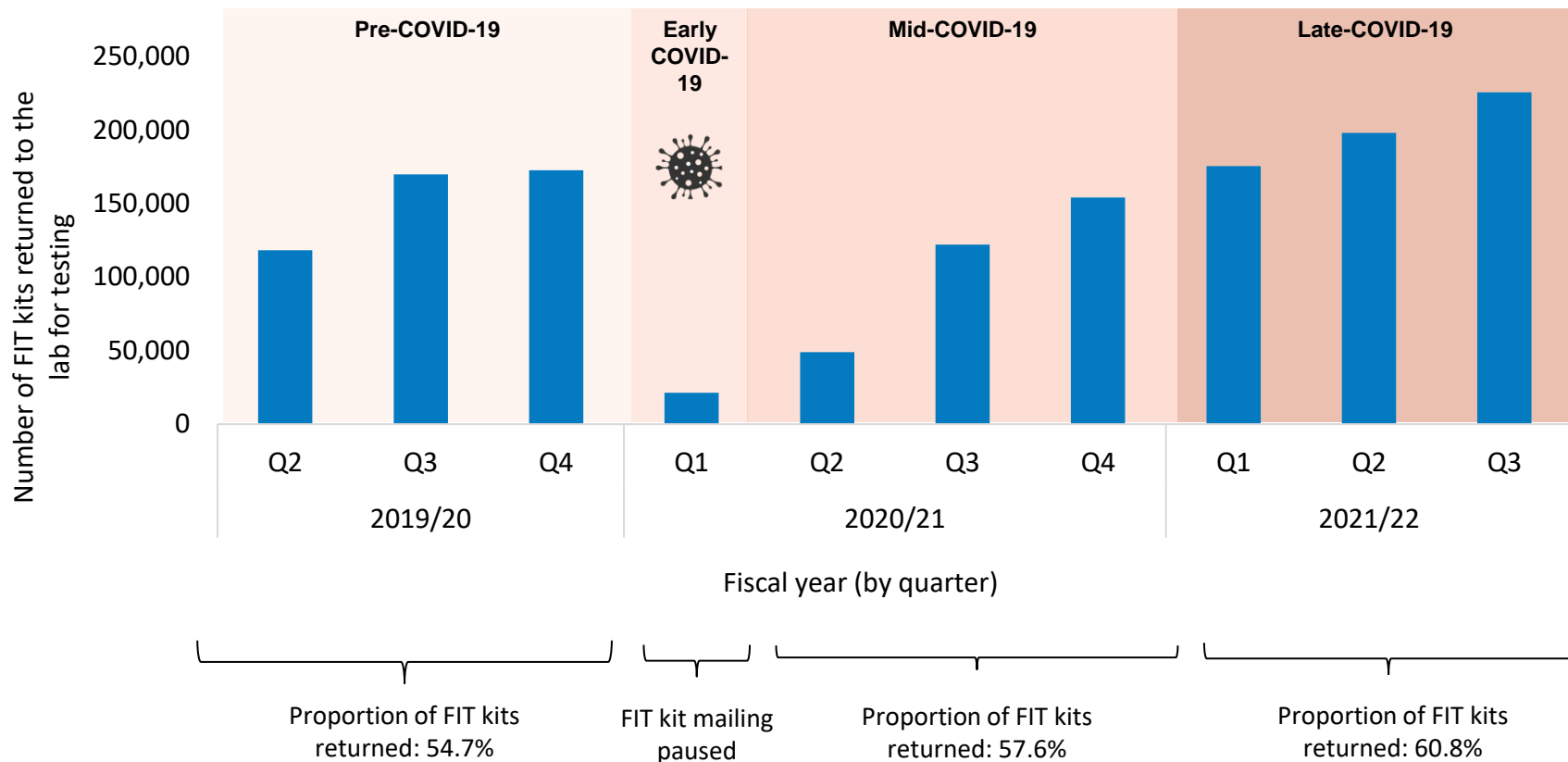


# FIT data across four time periods

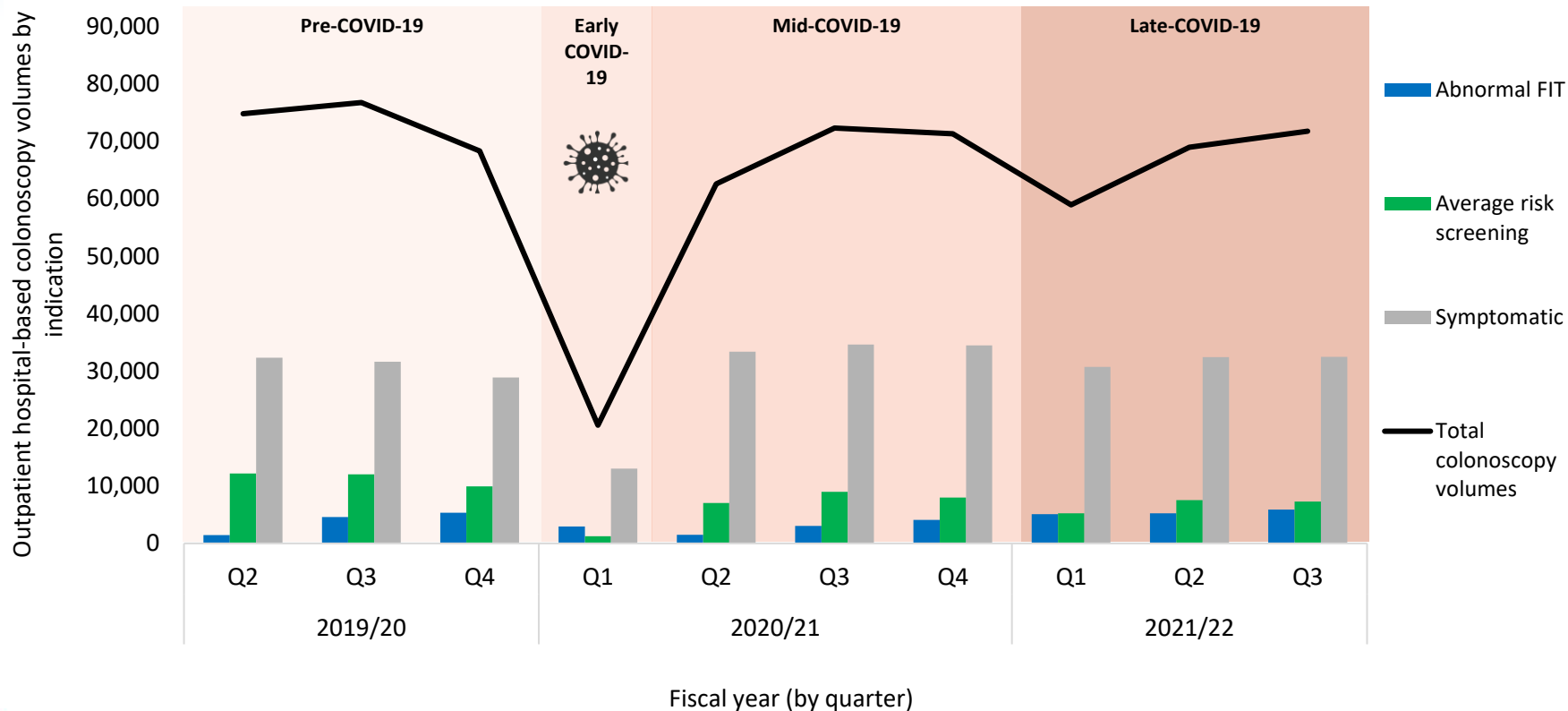
# FIT ordering



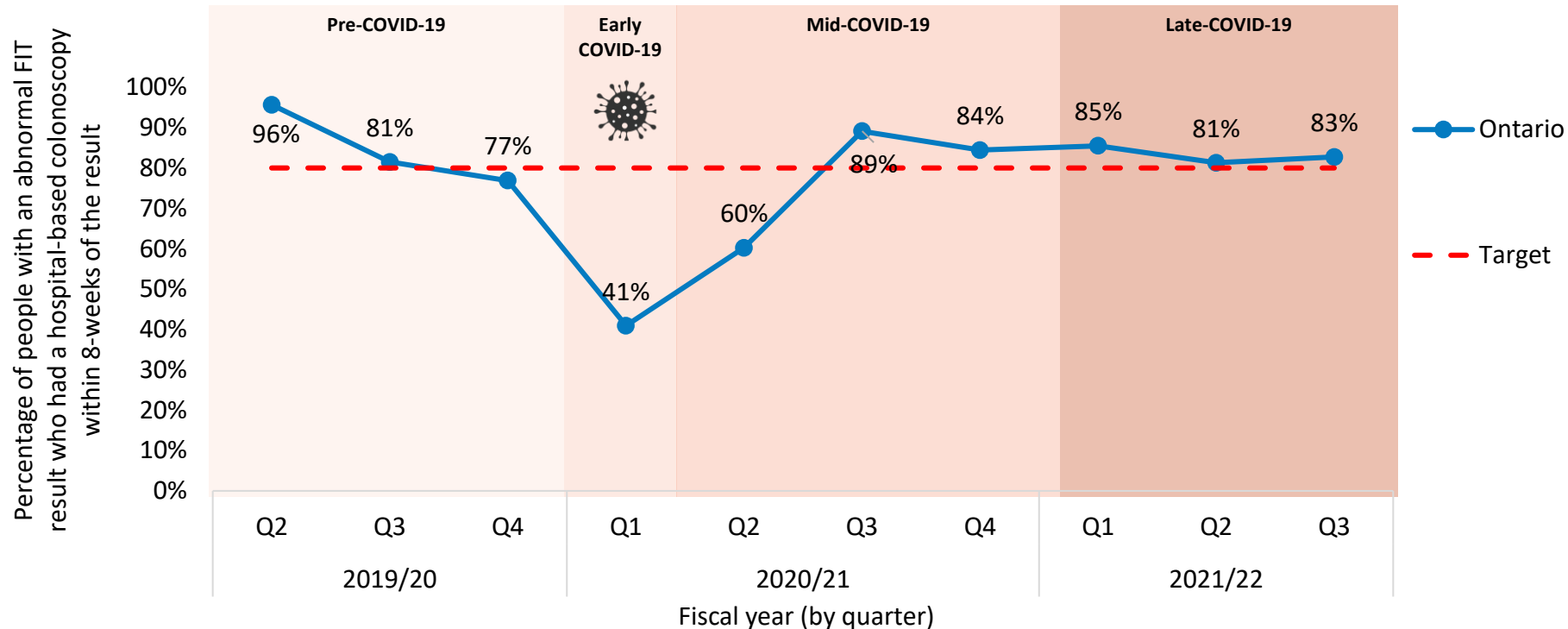
# Number of FIT kits returned to the lab



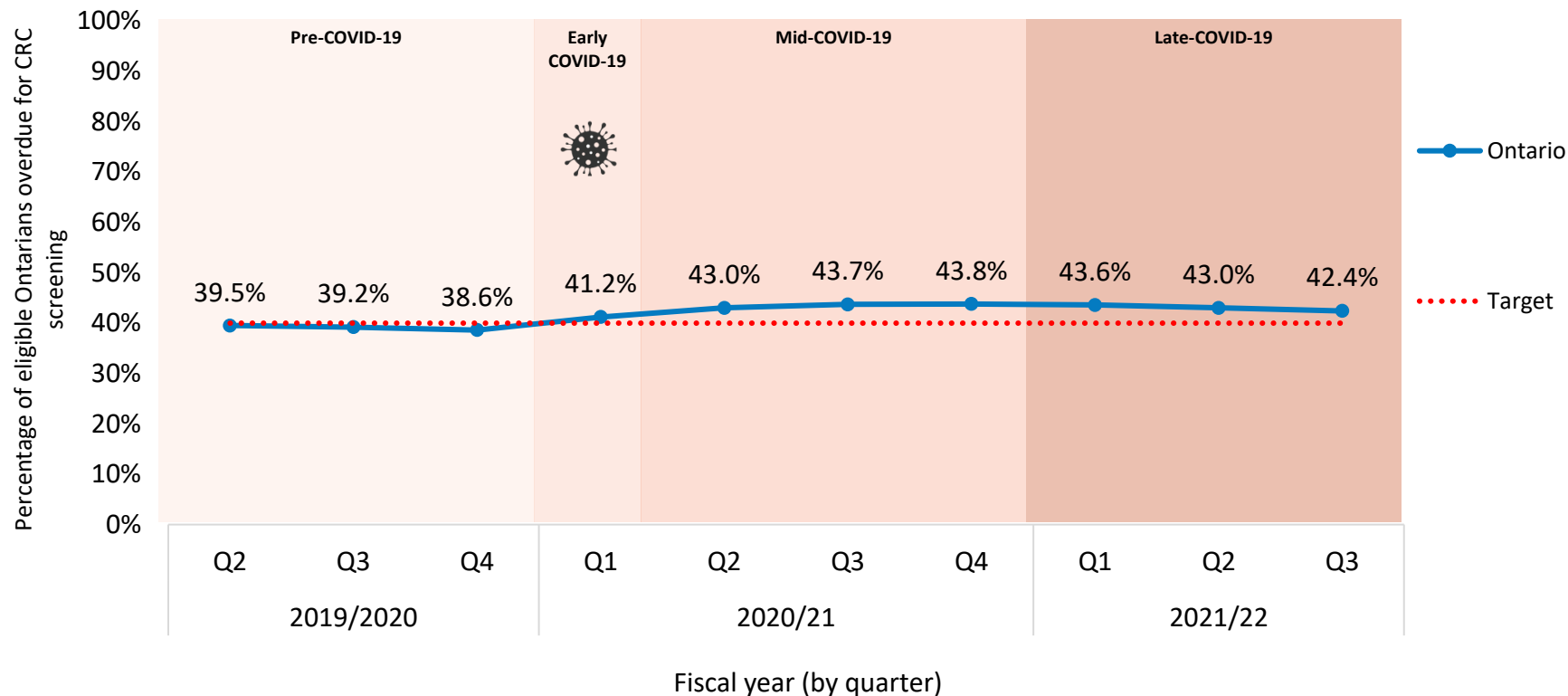
# Hospital-based colonoscopy volumes by indication




# Follow-up within 8 weeks of an abnormal result



# Overdue for CRC screening





# Key program successes and learnings



# Key program successes and areas for improvement

Program successes	Areas of improvement
<ul style="list-style-type: none"><li>• Greater FIT participation</li><li>• A reduction in average risk screening colonoscopies</li><li>• A greater proportion of people with an abnormal FIT result who had a hospital-based colonoscopy within 8-weeks of their result</li></ul>	<ul style="list-style-type: none"><li>• Reduce requisition rejections</li><li>• Reduce the percentage of Ontarians overdue for CRC screening caused by COVID-19</li></ul>



# Questions?

