

Impact of COVID Pandemic on FIT Use, Colonoscopy, and Neoplasia Detection: *Lessons from Kaiser Permanente, Northern California*

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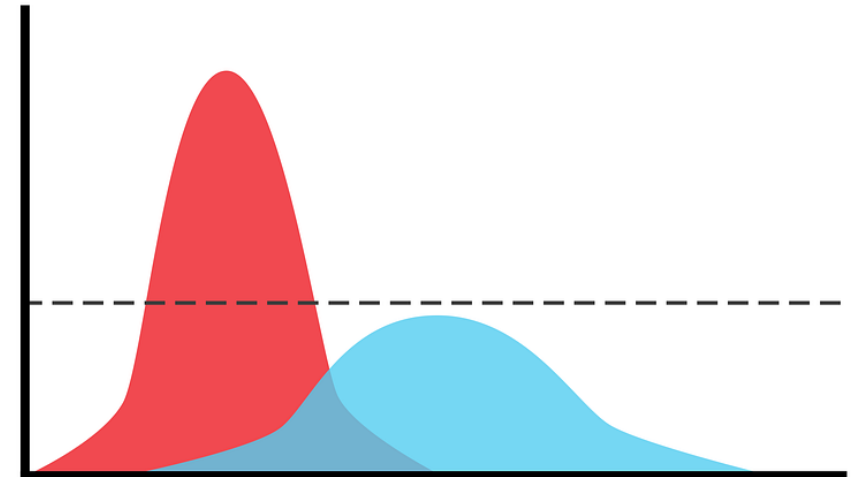
Kaiser Permanente Division of Research

Clinical Lead for Colorectal Cancer Screening, The Permanente Medical Group, Inc

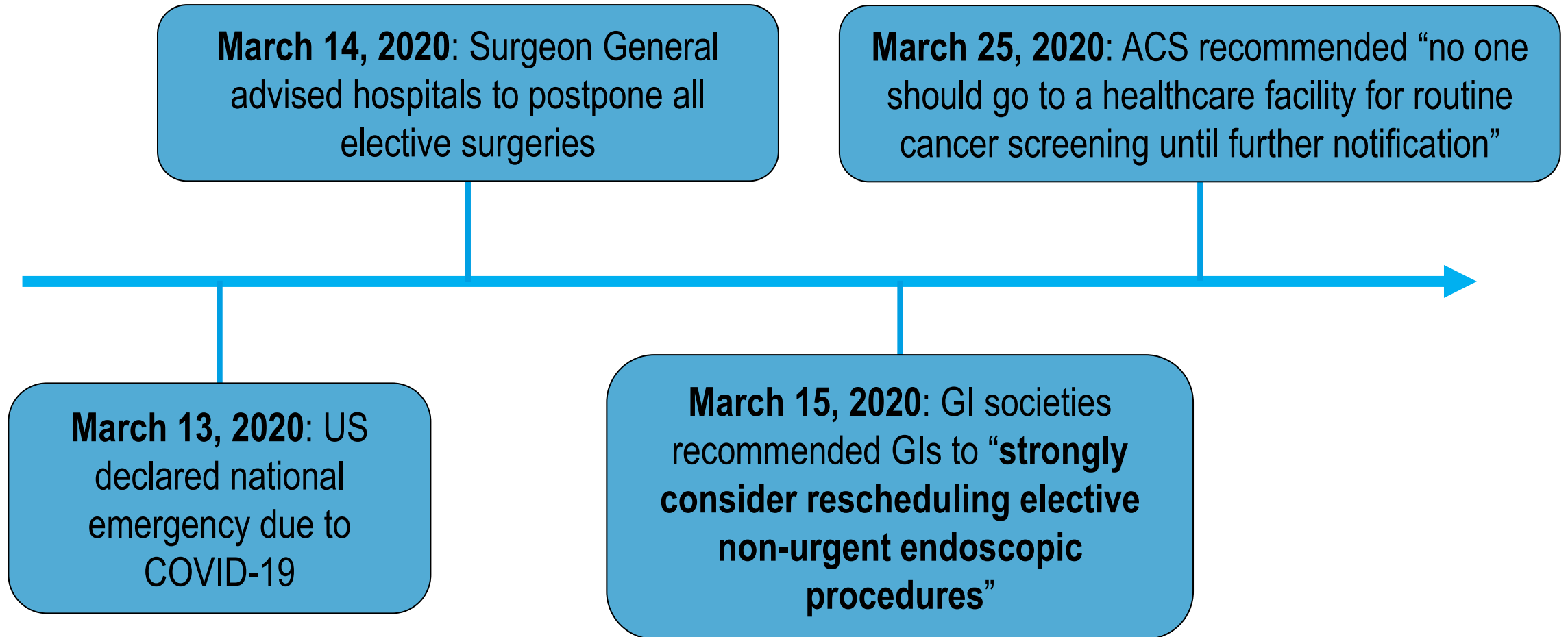
Funding

- Garfield Foundation
- National Cancer Institute (PROSPR II)

COVID-19 Shutdown – March 2020

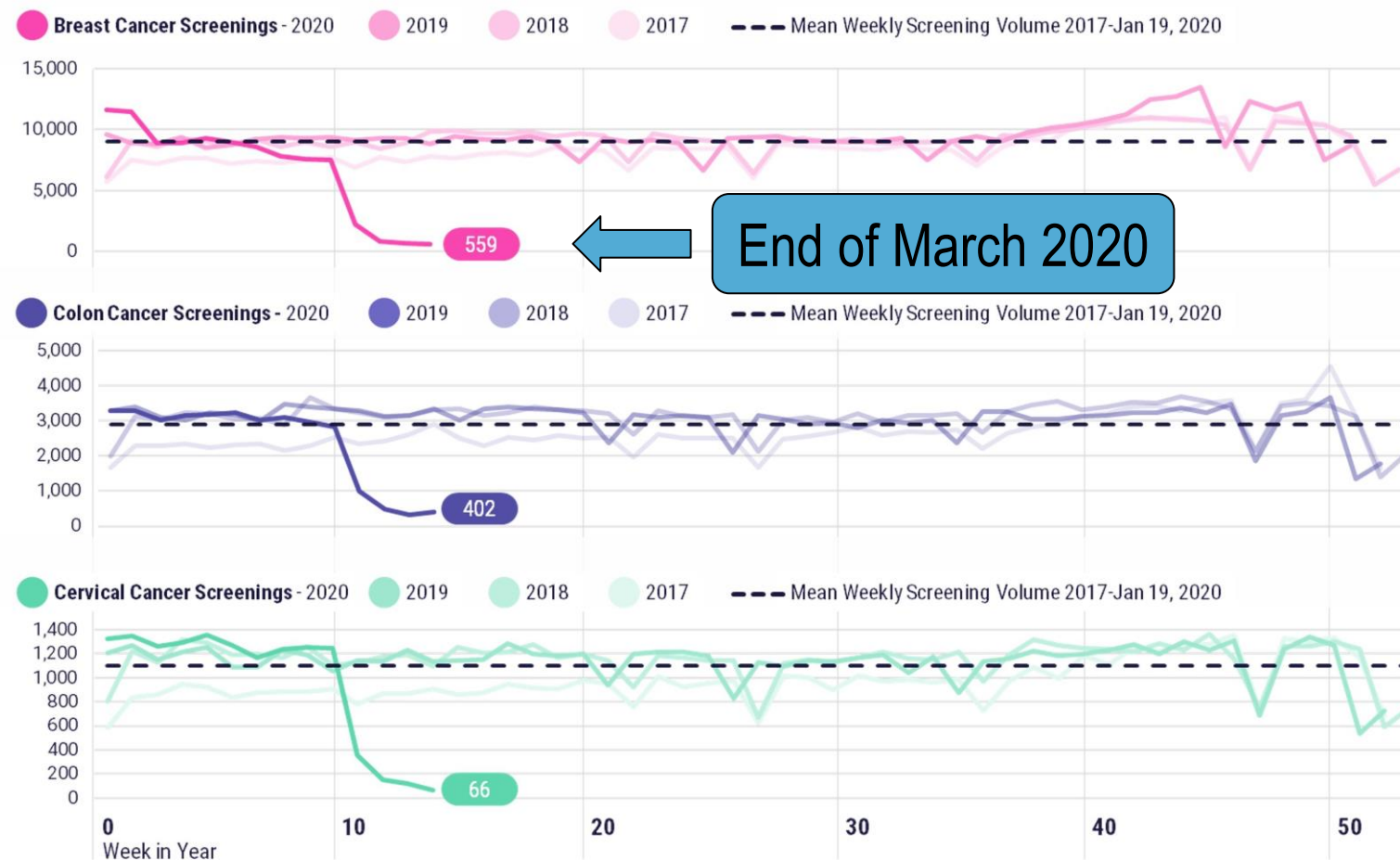


CRC Screening Recommendations: March 2020

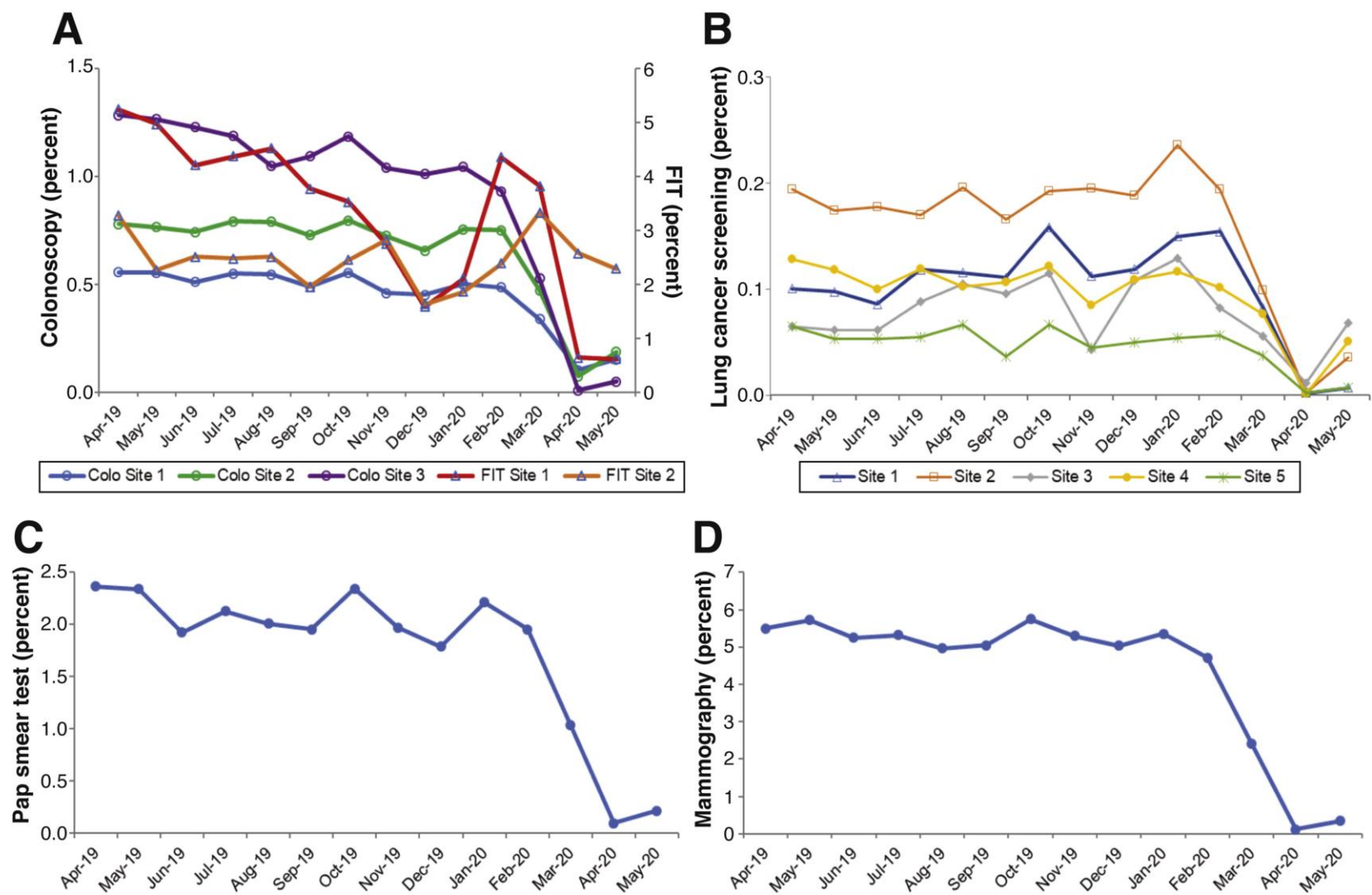


Cancer Screening in the US: Epic Healthcare Records

Cancer Screenings in the U.S.

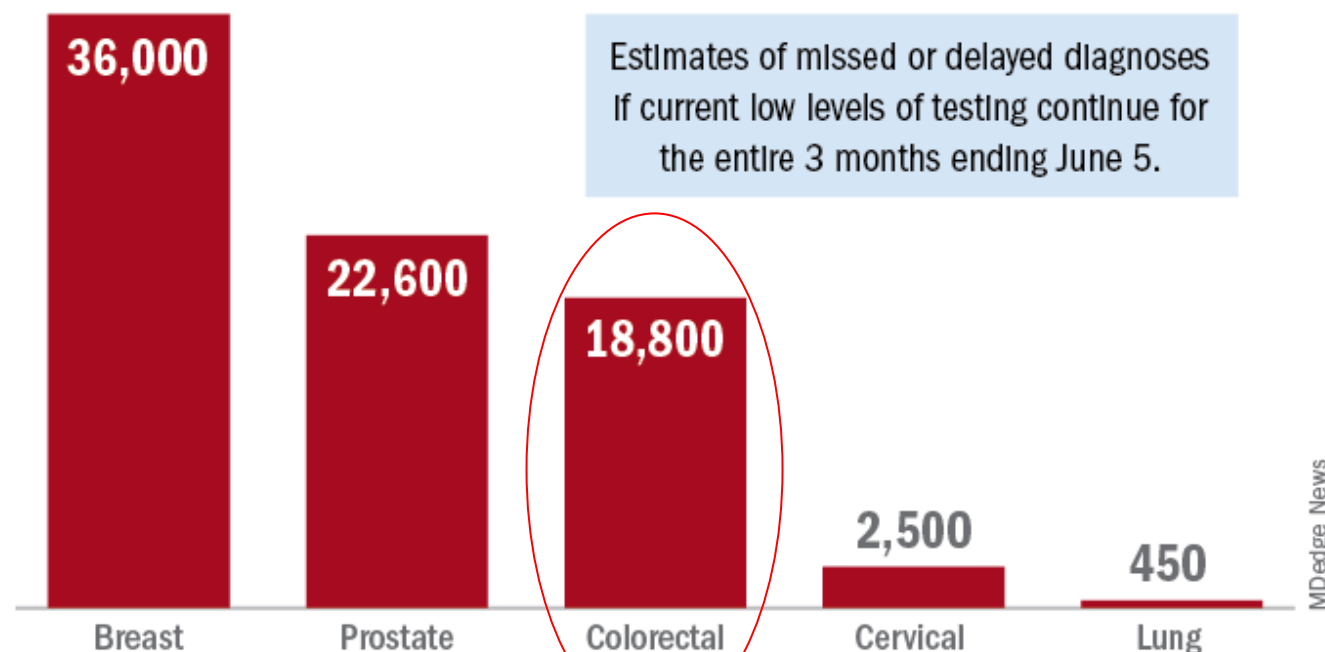


Cancer Screening in the US: PROSPR Sites



COVID-19 Consequence: Delays in Cancer Diagnosis

Pandemic effect: Missed cancer diagnoses



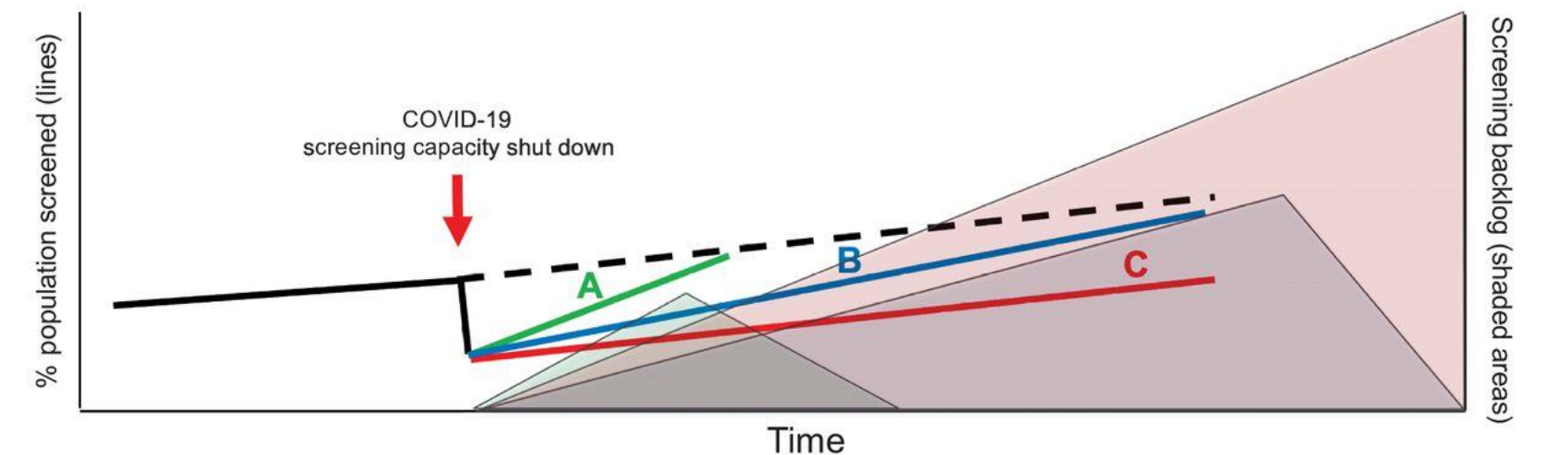
Note: Estimates of diagnostics modeled from relevant tumor epidemiology sources. Three-month period ending June 5 compared with baseline month of February 2020.

Source: IQVIA Institute for Human Data Science

CISNET model: approximately 10,000 excess deaths in the US alone from breast cancer and CRC

Sharpless NE. *Science* 2020;368:1290

Pace of return to ‘normal’ will determine magnitude of impact



	Scenario	Factors affecting scenario	Relative # cancer deaths from baseline trajectory
A	Rapid return to screening trajectory within 6–12 months	<ul style="list-style-type: none"> • No further COVID-19 shutdowns of clinical capacity • Unrestricted screening capacity 	~1,000 annually
B	Delayed return to trajectory over 1–3 years	<ul style="list-style-type: none"> • Restricted/delayed screening capacity due to COVID-19 testing (preventing some screening services) and social distancing 	1,000–5,000 annually
C	Prolonged return to trajectory over several years	<ul style="list-style-type: none"> • Prolonged screening capacity restraints due to large backlogs of delayed screening • Potential public and individual awareness for screening wanes • Exacerbation of fears for clinic settings due to ongoing pandemic 	≥5,000–10,000 annually

Carethers. Cancer Prev Res. 2020;13(11):893-896. doi:10.1158/1940-6207

KPNC Mitigation Efforts for Resuming Elective Procedures



Telehealth



Pre-procedural Testing



PPE

COVID-19's Effect on Colorectal Cancer Care: 2020 vs 2019

Country	FIT Screening	Colonoscopy	Advanced Adenoma	Colorectal Cancer
United Kingdom		↓		↓
Netherlands		↓		↓
France		↓		
Taiwan	↓	↓		
Hong Kong		↓		↓
Los Angeles	↓	↓		

Aim

- Evaluate the impact of COVID-19 pandemic on FIT screening, colonoscopy services, and colorectal neoplasia detection in a large, community-based health care setting in the United States

Methods: Study Setting

- Kaiser Permanente Northern California
- Integrated health care delivery system
- 26 Medical Centers
- >4.5 million members
- Commercial Insurance, Medicare, Medicaid



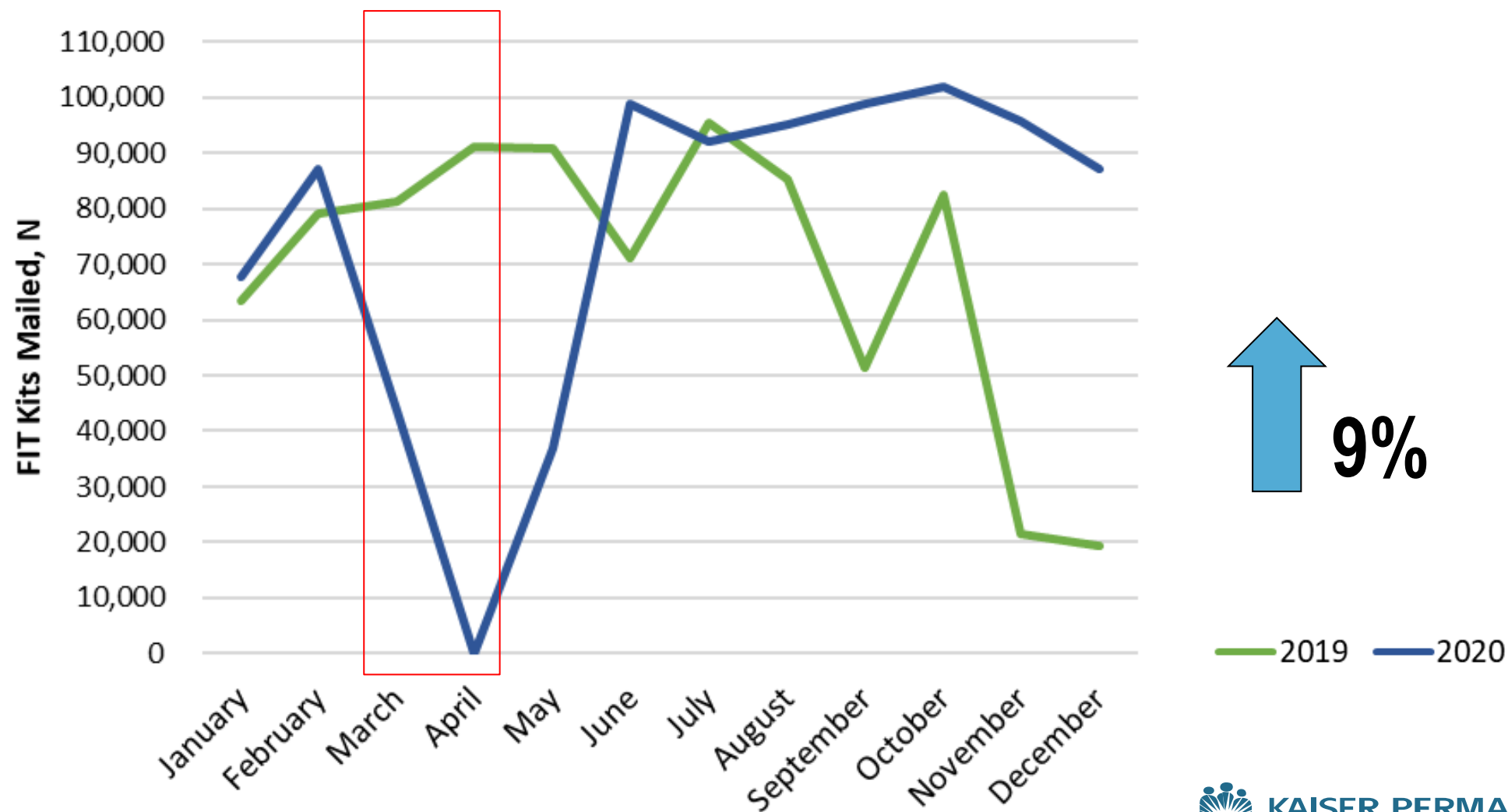
Methods: Eligibility Criteria and Outcomes

- KPNC members 18-89 years during 2019 and 2020
 - 2019: 3,366,771
 - 2020: 3,464,128
- Outcomes of Interest
 - FIT mailings, FITs completed, FIT positives
 - Colonoscopies performed in total and by indication (i.e., screening, surveillance, diagnostic)
 - Adenomas, Advanced adenomas, and CRCs detected by colonoscopy

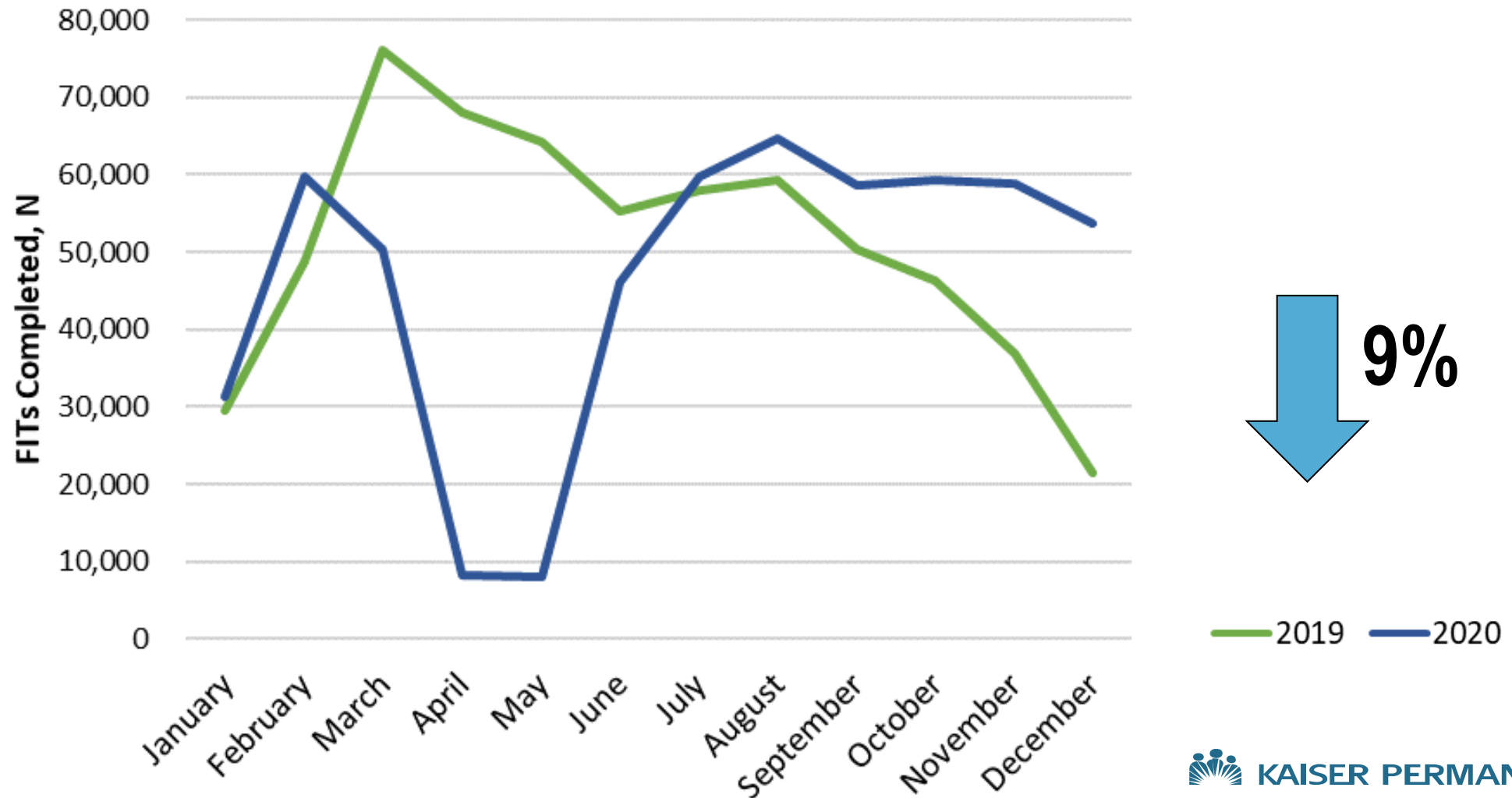
Demographic Characteristics

	FITs Completed 2019	FITs Completed 2020	Colonoscopies Performed 2019	Colonoscopies Performed 2020
Total persons, n	614,051	558,810	110,594	80,863
Age (years)				
Mean, SD	61 (7)	61 (7)	60 (12)	60 (13)
Median, IQR	60 (55-66)	60 (55-67)	61(53-69)	61 (52-69)
Female , %	328,801 (53.5)	296,682 (53.1)	56,645 (51.2)	41,285 (51.1)
Race and Ethnicity, %				
Asian or Pacific Islander	129,809 (21.1)	120,712 (21.6)	19,922 (18.0)	14,043 (17.4)
NH Black	44,576 (7.3)	42,301 (7.6)	8,202 (7.4)	6,561 (8.1)
Hispanic	94,988 (15.5)	86,083 (15.4)	16,630 (15.0)	12,886 (15.9)
NH White	319,662 (52.1)	283,461 (50.7)	63,034 (57.0)	44,937 (55.6)
Other	25,016 (4.1)	26,253 (4.7)	2,806 (2.5)	2,436 (3.0)

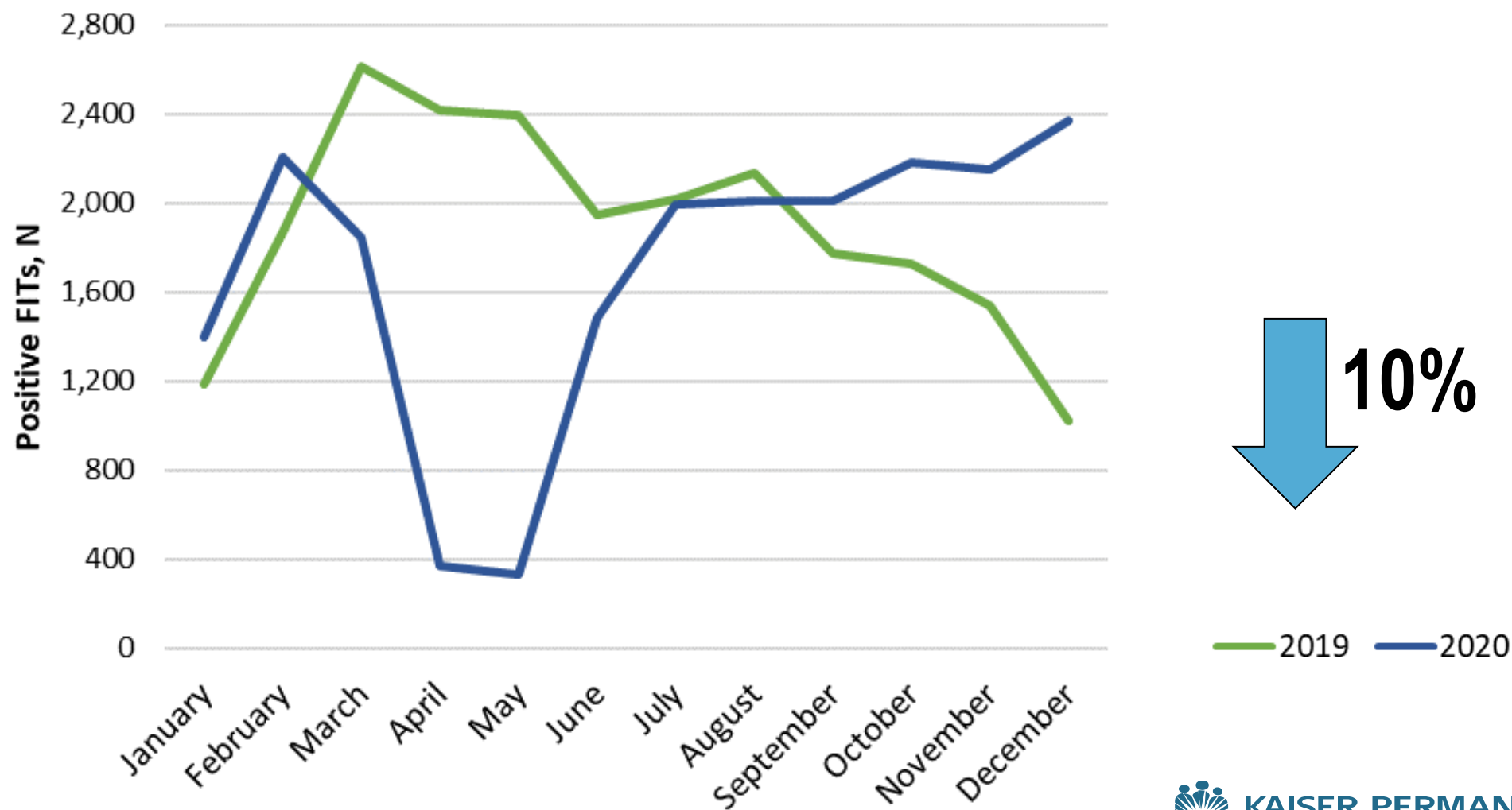
Number of FITs Mailed in 2020 Compared to 2019



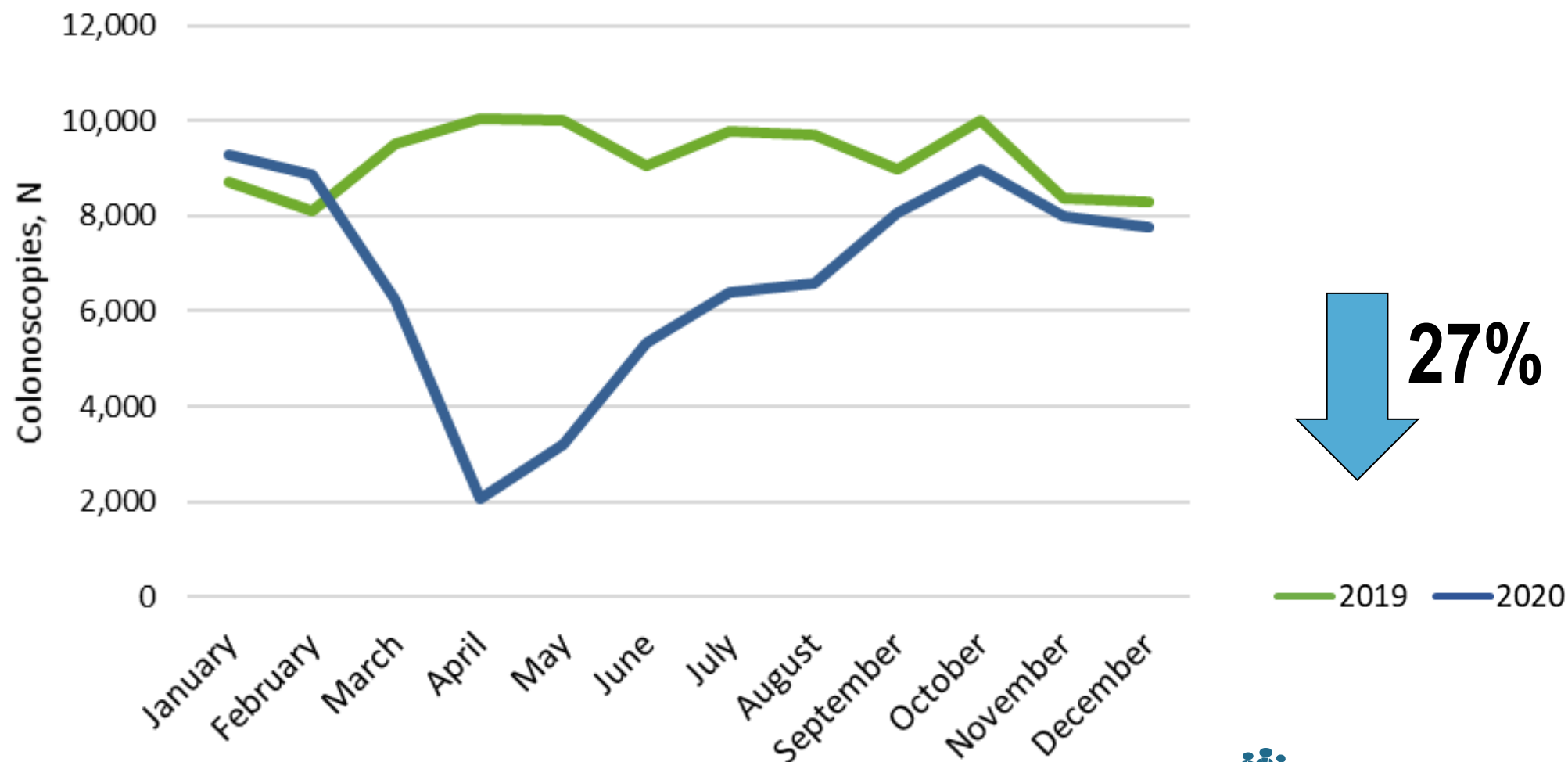
Number of FITs Completed in 2020 Compared to 2019



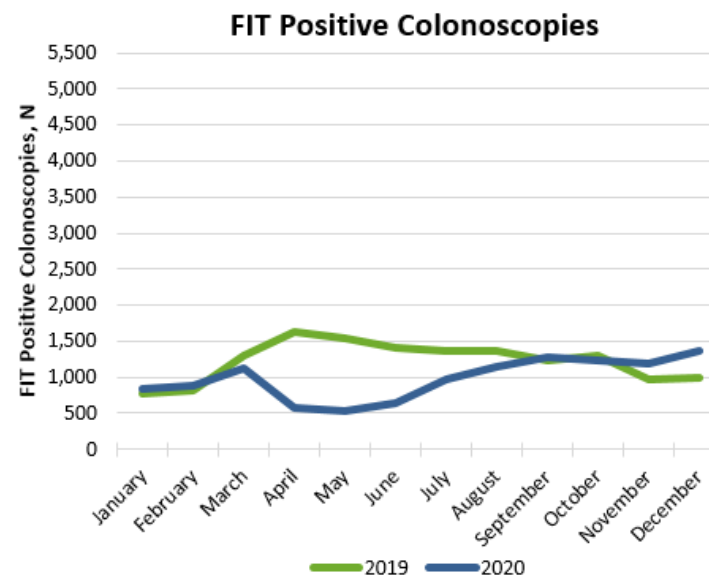
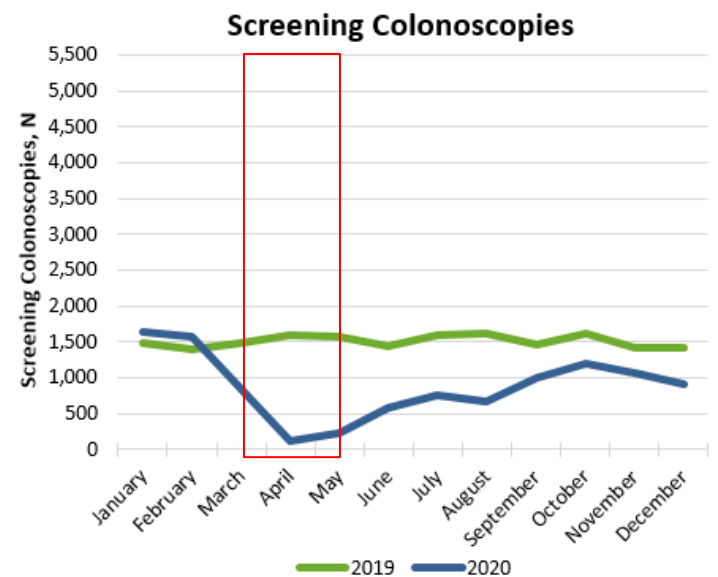
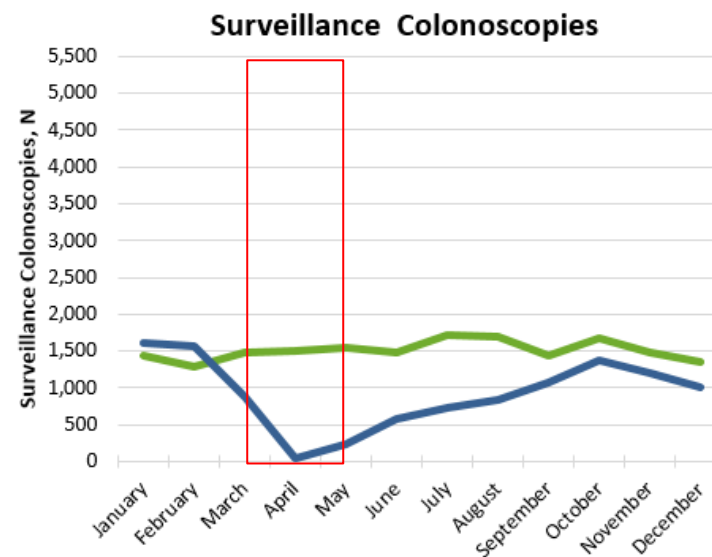
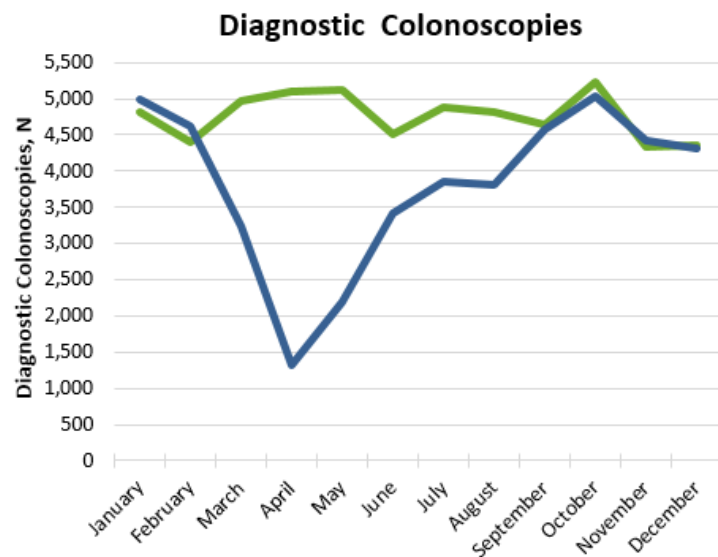
Number of Positive FITs in 2020 Compared to 2019



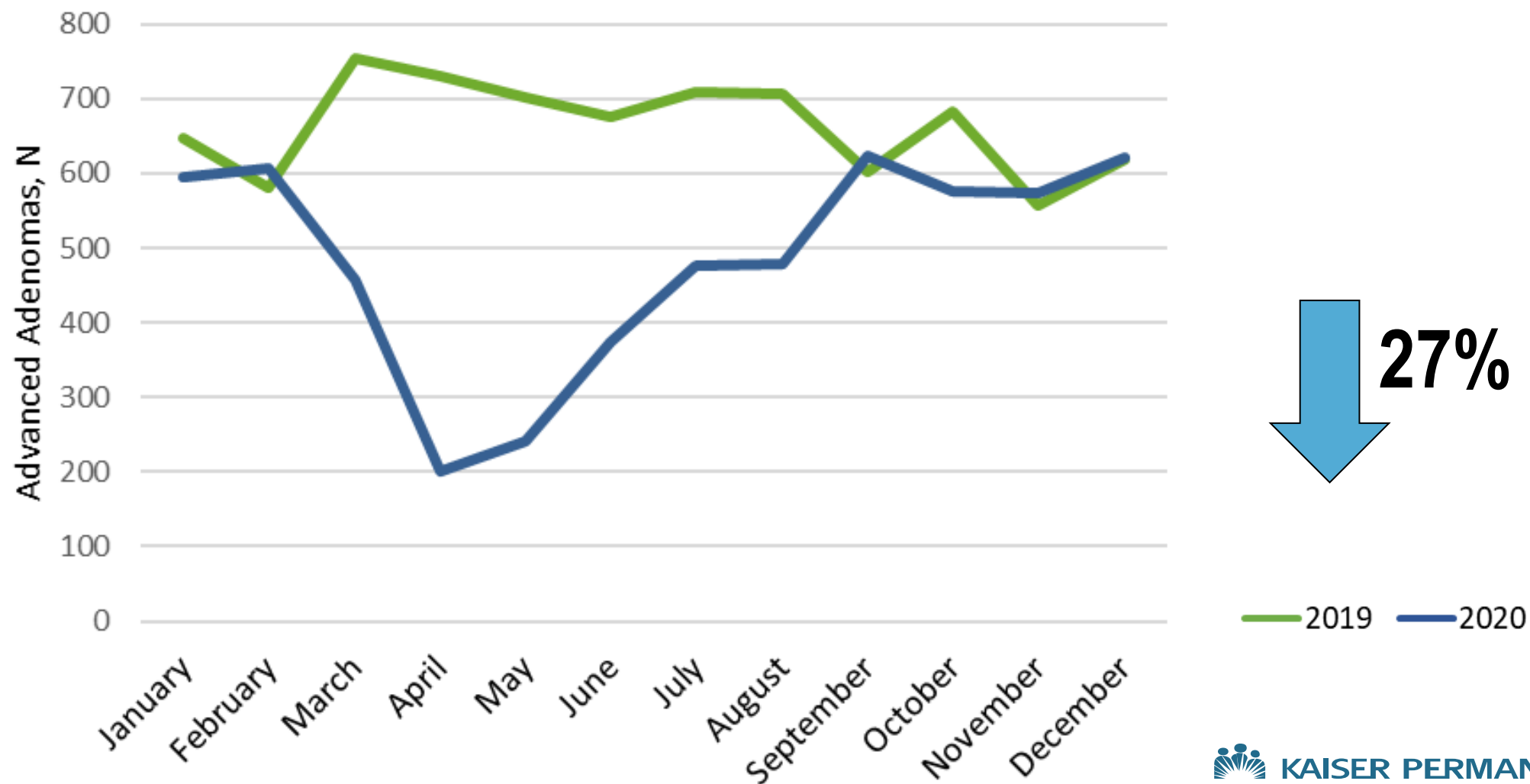
Number of Colonoscopies Performed in 2020 Compared to 2019



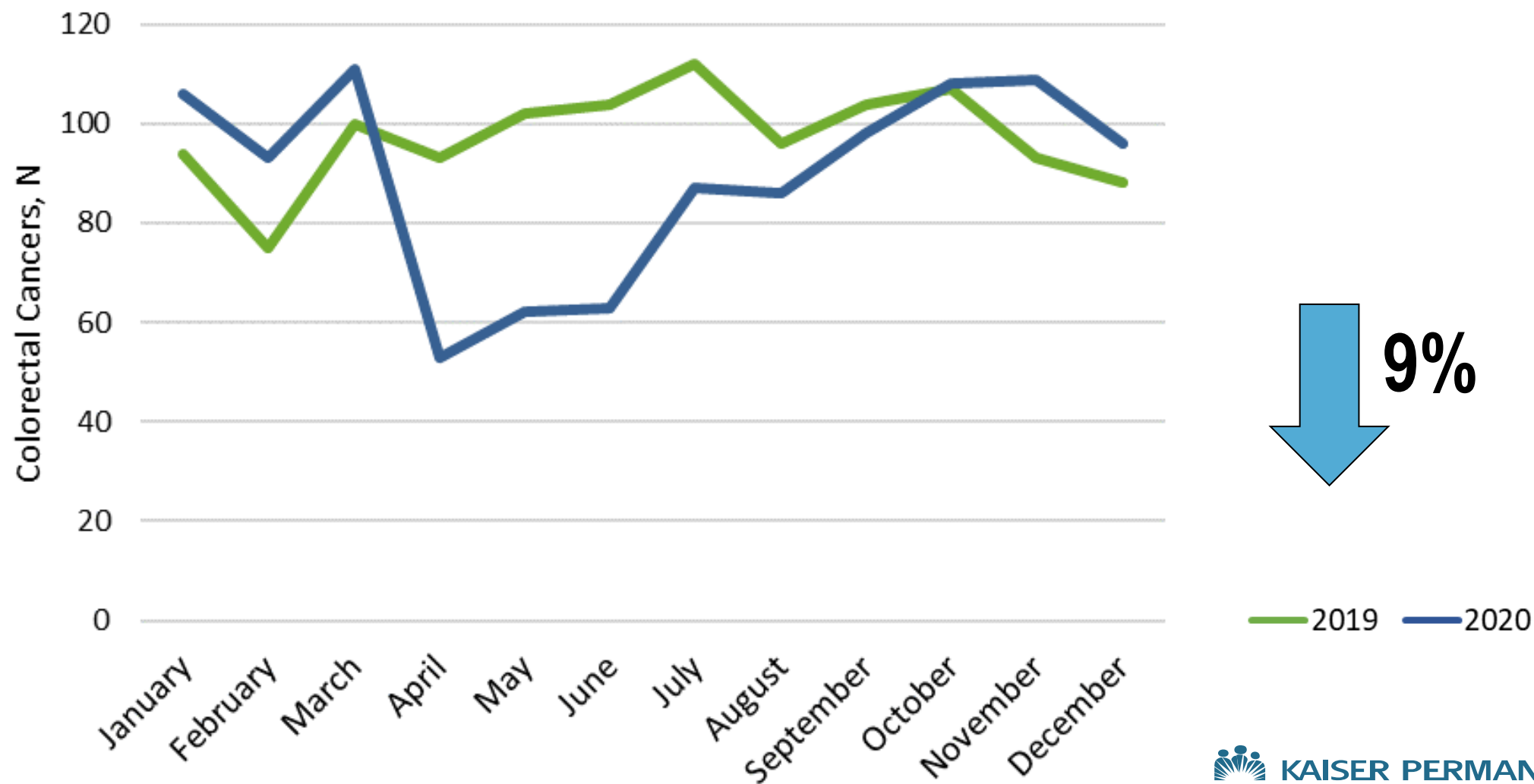
Number of Colonoscopies by Indication 2020 vs 2019



Number of Advanced Adenomas in 2020 Compared to 2019



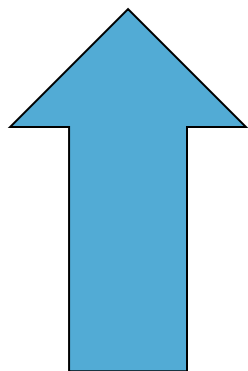
Number of Colorectal Cancers in 2020 Compared to 2019



Summary

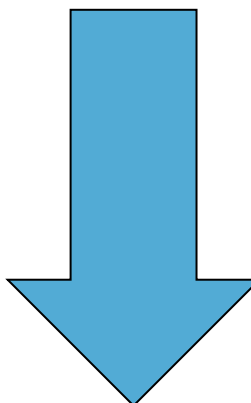
- Dramatic decline in FIT mailings and colonoscopy services in March / April 2020
- Gradual recovery FIT mailings and colonoscopy services in the latter half of 2020

FITs mailed



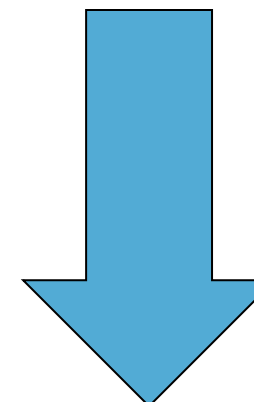
9%

FITs completed



9%

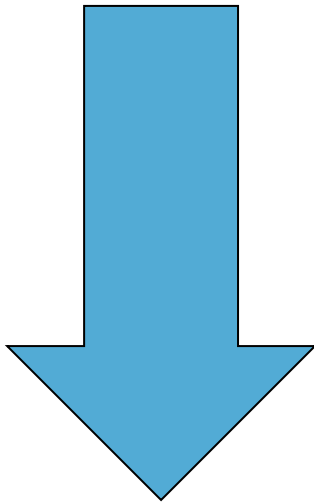
Positive FITs



10%

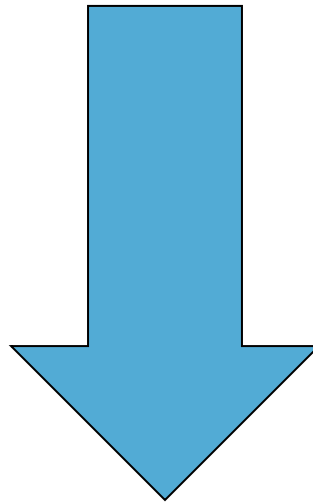
Summary

Colonoscopies



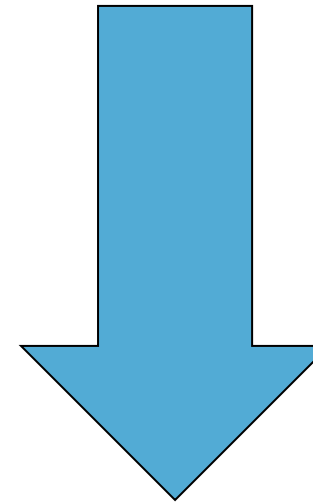
27%

Advanced Adenomas



27%

Colorectal Cancer



9%

Conclusion

- In 2020 we saw an initial sharp reduction in FIT screenings, colonoscopy services, and the detection of CRC and advanced adenomas during April and May
- FIT and colonoscopy volumes began to reach pre-pandemic levels by September 2020, but backlogs persisted. Some patients still were either unwilling or unable to complete FIT or colonoscopy in 2020 due to the complexity of scheduling or concerns about infection.
- The observed decline in CRCs and advanced adenomas validates concerns about the potential for delayed CRC diagnosis and shift to more advanced stage
- The use of FIT may have mitigated some of the decline in cancer diagnosis seen in settings that rely more heavily on colonoscopy for CRC screening

Thank you

- Jeff Lee MD
- Douglas Corley MD, PhD
- Angela Lam MD
- Chris Jensen PhD, MPH
- Amy Marks MPH
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- Kevin Kao MD
- Joanne Schottinger MD
- Nirupa Ghai PhD
- Cheryl Carlson MPH
- Ngoc Lam, MPH



Thank you!