



PRIMARY CARE INNOVATION LAB: CREATING A MODEL FOR TESTING INNOVATIVE QUALITY IMPROVEMENT PROJECTS



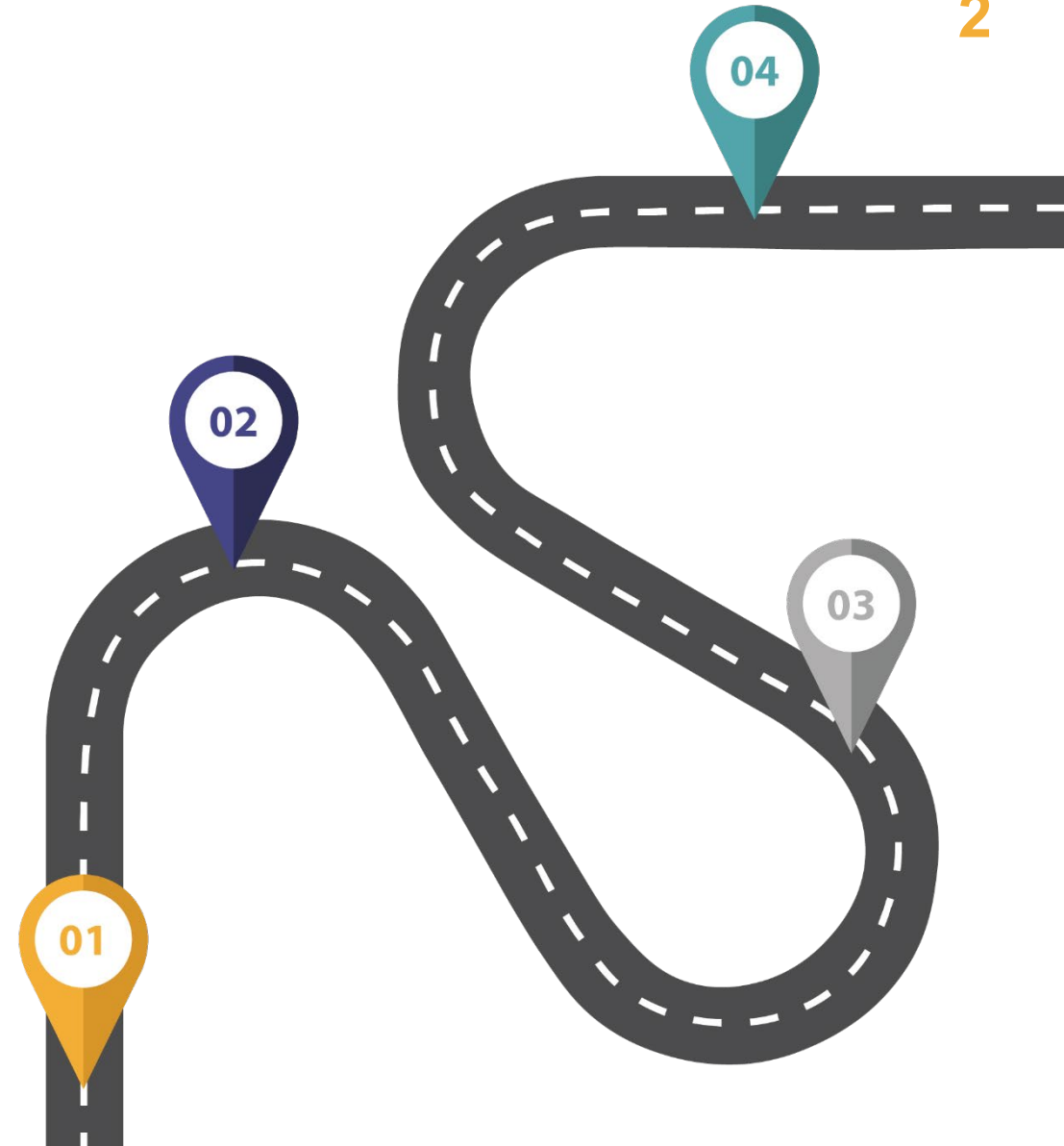
Stefanie Deeds, MD

Assistant Professor, Medicine, University of Washington
Director, Primary Care Innovation Lab, VA Puget Sound

Leadership Support: Ashok Reddy, MD & Kari Nelson, MD, MSHS

LEARNING OBJECTIVES

- 01** Define the learning health system
- 02** Building the Primary Care Innovation Lab
- 03** Overview of key randomized QI projects
- 04** Lessons Learned



POLL QUESTION #1

What is your Primary Role in VA?

- Student, trainee, or fellow
- Clinician
- Researcher
- Administrator, manager or policy-maker
- Other

POLL QUESTION #2

What challenges have you faced in collaborating with clinical and/or operational partners?

- Lack of network with clinical teams/operational leaders
- Different goals and priorities
- Different timelines for research and operations
- Failed implementation in real world setting
- Other –put your comment in Q&A box

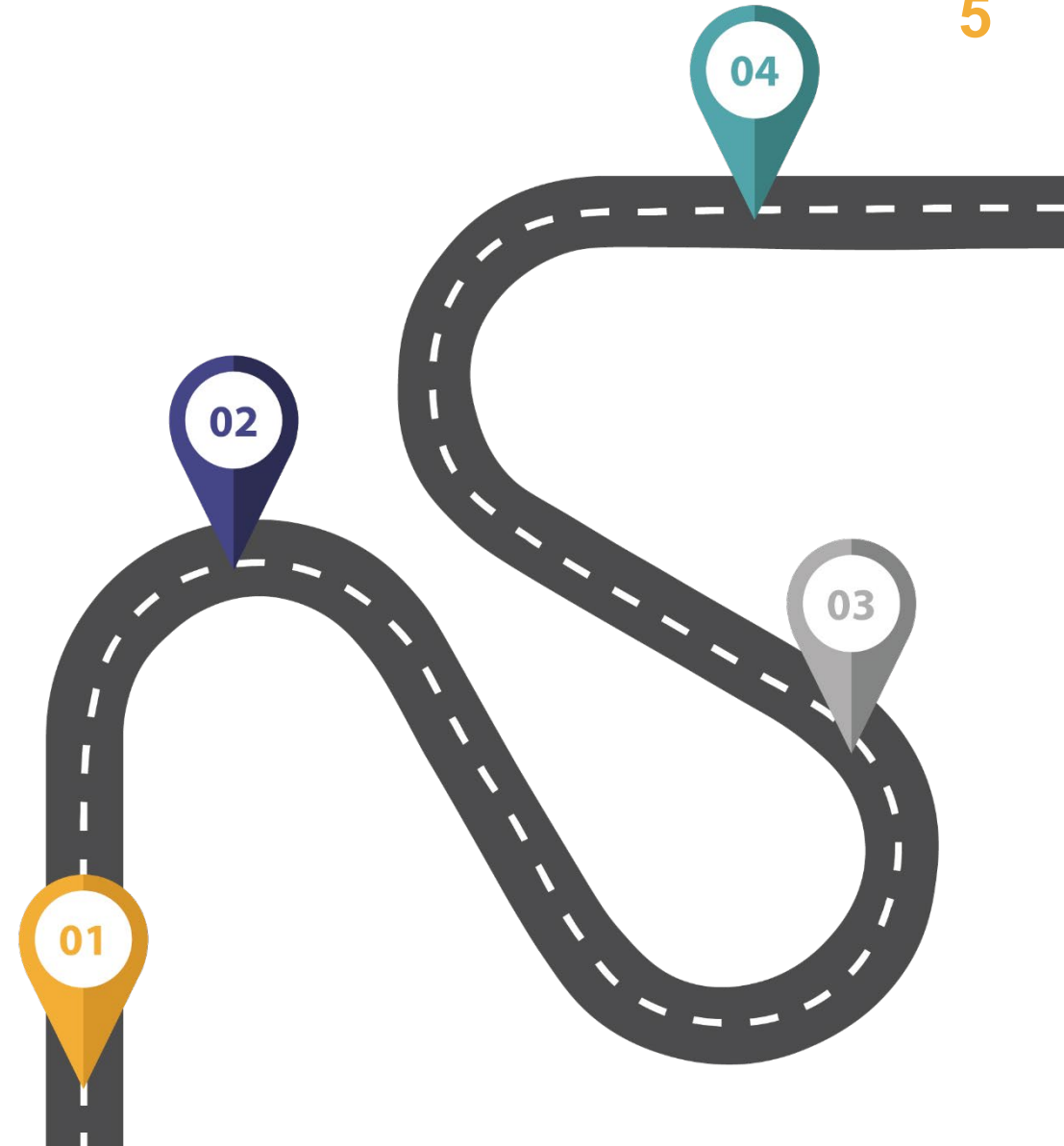
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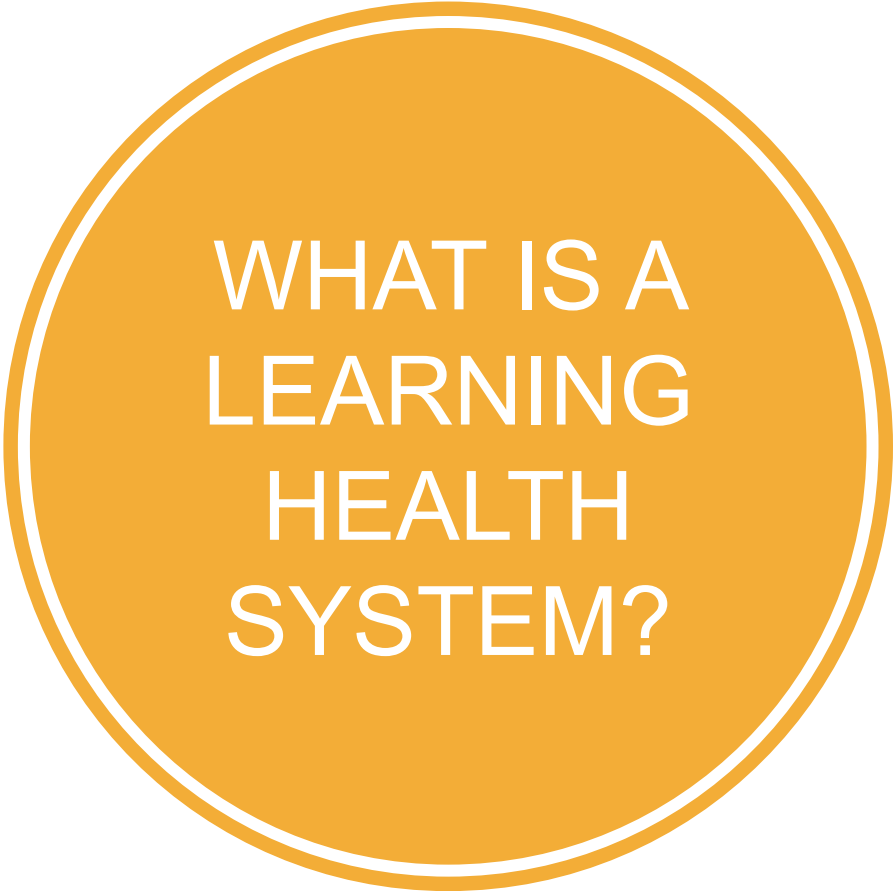
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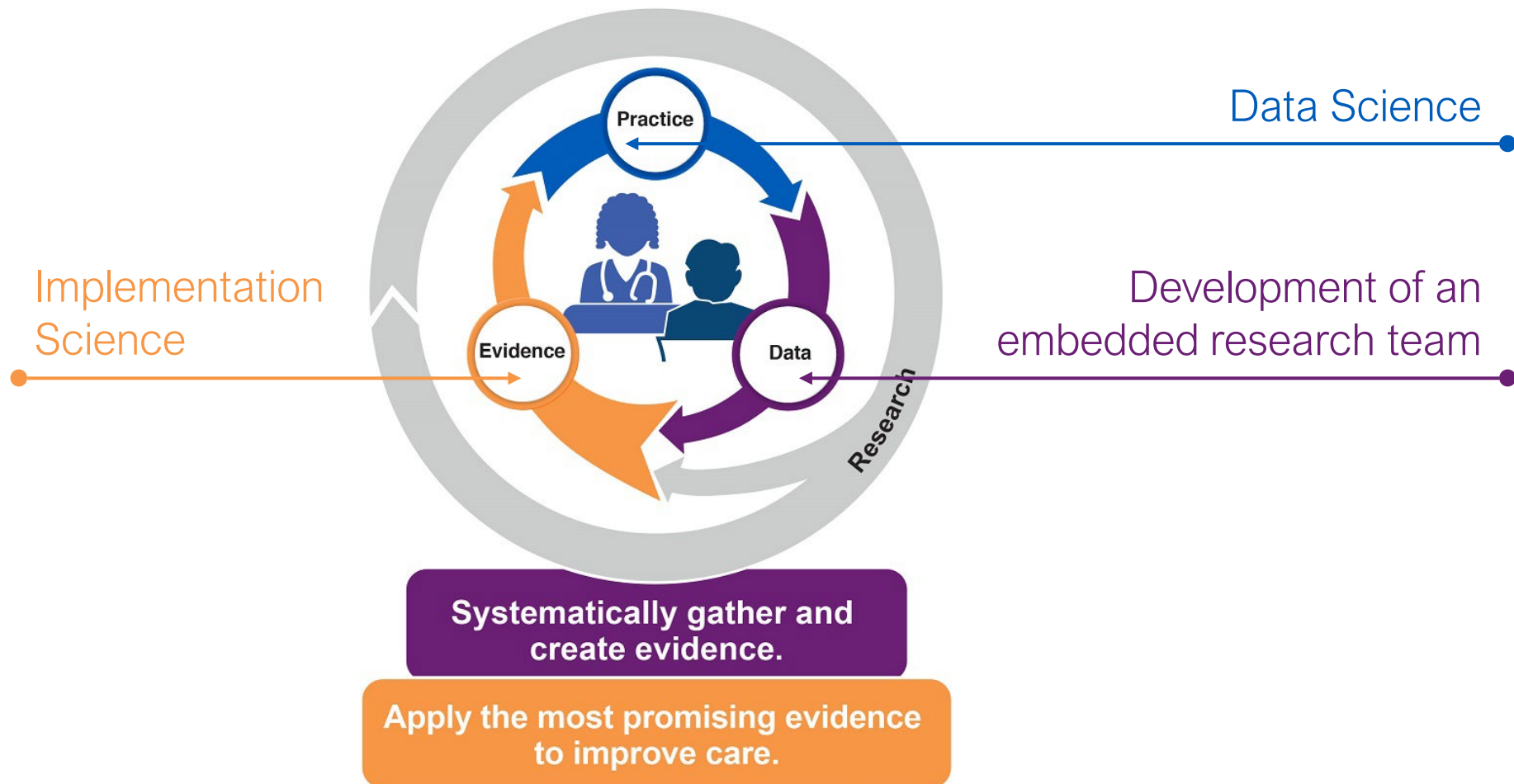


WHAT IS A
LEARNING
HEALTH
SYSTEM?

Health system which **systematically integrates internal data and clinical experience with external evidence** and puts the resulting knowledge into practice

Agency for Healthcare Research and Quality, 2019

Learning Health Systems



MODELS FOR LHS WORK

There are known **gaps in US healthcare systems** ability to consistently deliver the most **effective and efficient care**.

A proposed solution is to improve care delivery through a more **systematic approach to continuous learning and improvement**.

Example: NYU deployment of a learning health system model "RCT Lab."

NYU Rapid Randomized Controlled Trial Lab

- Best practice EHR alerts prompt evidence-based care or avoid adverse events
- Telephone calls to patients after hospital discharge
- Reminder letters about overdue preventive care
- Community health workers for the ER



Led by [Leora Horwitz, MD, MHS](#)

NUDGE UNITS AND RANDOMIZED QI WORK

Some healthcare systems have established “nudge units.” These teams focus on nudging teams in making medical decisions. (ex. Penn Medicine)

Examples of other work in randomized QI:

- Health department mailing letter +/- FIT cards to Medicare beneficiaries
- Using reports and tools to target adherence to cardiovascular best practices
- Using QI training programs to improve diabetes care and increase preventative services

OUTCOMES

Some interventions work, some do not. This provides helpful information on how health care organizations should use limited time and resources.

Penn Medicine

The **Nudge** Unit

About Our Team **Our Work** Videos Publications News

Our Work

Learn more about our diverse portfolio of projects below. Our key project domains include the following:

Nudges to clinicians: The design of any practice environment heavily influences medical decision-making within it. We aim to design and implement nudges that improve workflow and steer decision-making toward evidence-based care.

Nudges to patients: Daily health behaviors significantly impact long-term patient outcomes. We design and implement interventions that lead to significant and sustained changes in patient engagement and daily behaviors.

All Projects
Active Choice: Prompting a decision now rather than delaying it to the future
Defaults: The path of least resistance or the action that occurs if no changes are made
Financial Incentives: Monetary rewards designed to leverage predictability irrational behaviors
Gamification: Using game design elements such as points and levels to engage behavior
Information Framing: Displaying information to increase transparency or reveal peer comparisons
Prediction: Using our behaviors to predict health outcomes
Social Incentives: Influences that motivate individuals to adjust their behavior based on social ties or connections
Other

Projects completed 2016-2021

Prescription Defaults Using default options to increase generic medication prescribing rates	Covid SAFE Evaluating the implementation of a saliva-based screening program for detection of COVID-19	Opioid Prescription Defaults Using default options to decrease opioid prescribing durations
Active Choice for Cancer Screening Using active choice to increase cancer screening	Predicting Influenza Vaccinations Predicting influenza vaccinations	Image-Guided Radiation Therapy Using default options to decrease unnecessary imaging for palliative cancer patients receiving radiation therapy

WHY VA?

- Veteran Affairs (VA) Puget Sound Health Care System has a consortium of primary care clinical leaders, University of Washington faculty, and HSRD researchers, and is the site for the **Primary Care Analytics Team (PCAT)** for the Office of Primary Care.
- This makes VA Puget Sound uniquely positioned to be a leader in evaluating operations and quality improvement interventions in primary care.
- As VA strives to become a learning health system through efforts to **continually improve and we can integrate new knowledge into the delivery of primary care services.**
- The **Primary Care Innovation Lab (PCIL)** has created a model for VA for evaluating primary care operations and quality improvement interventions.

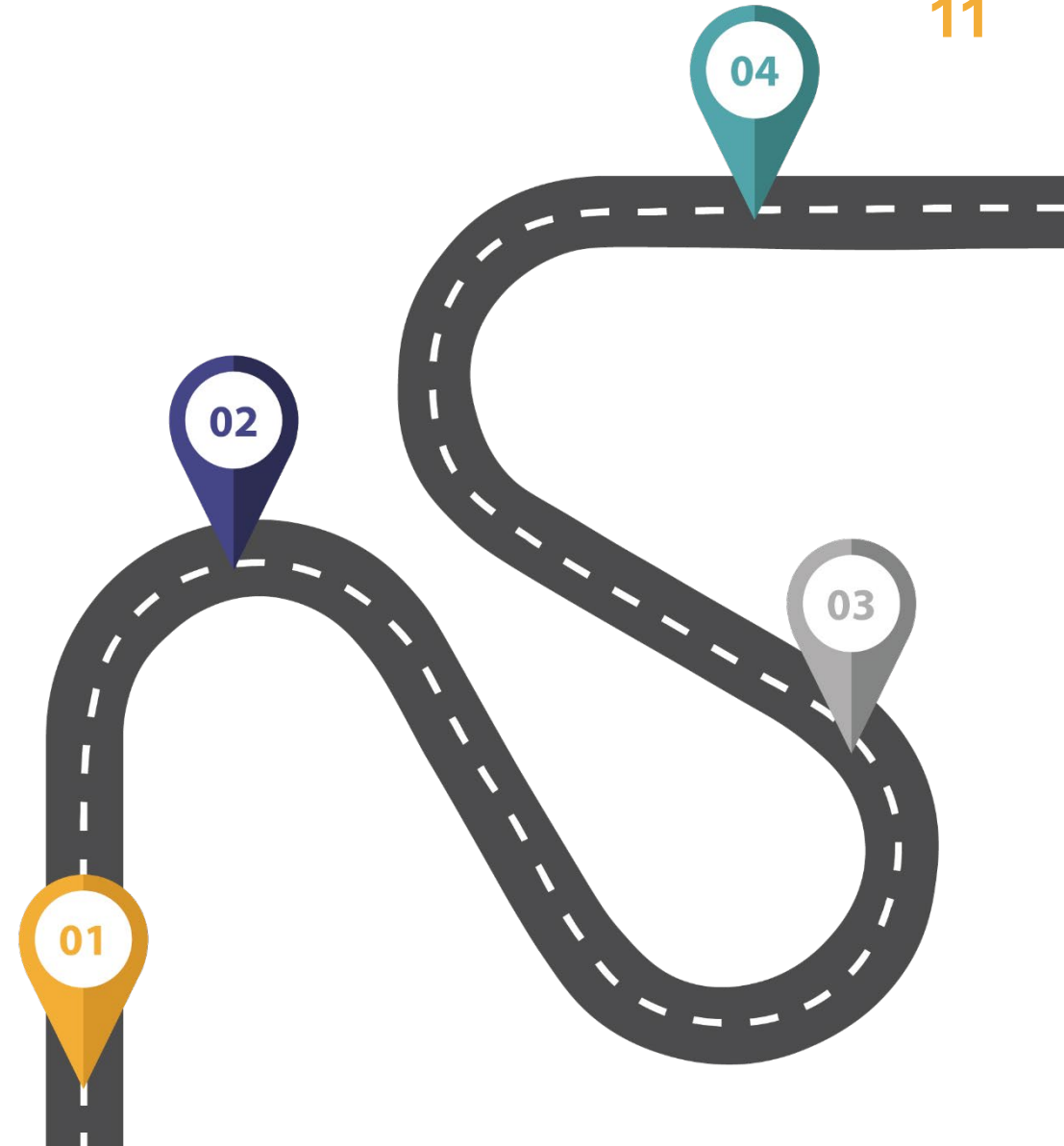
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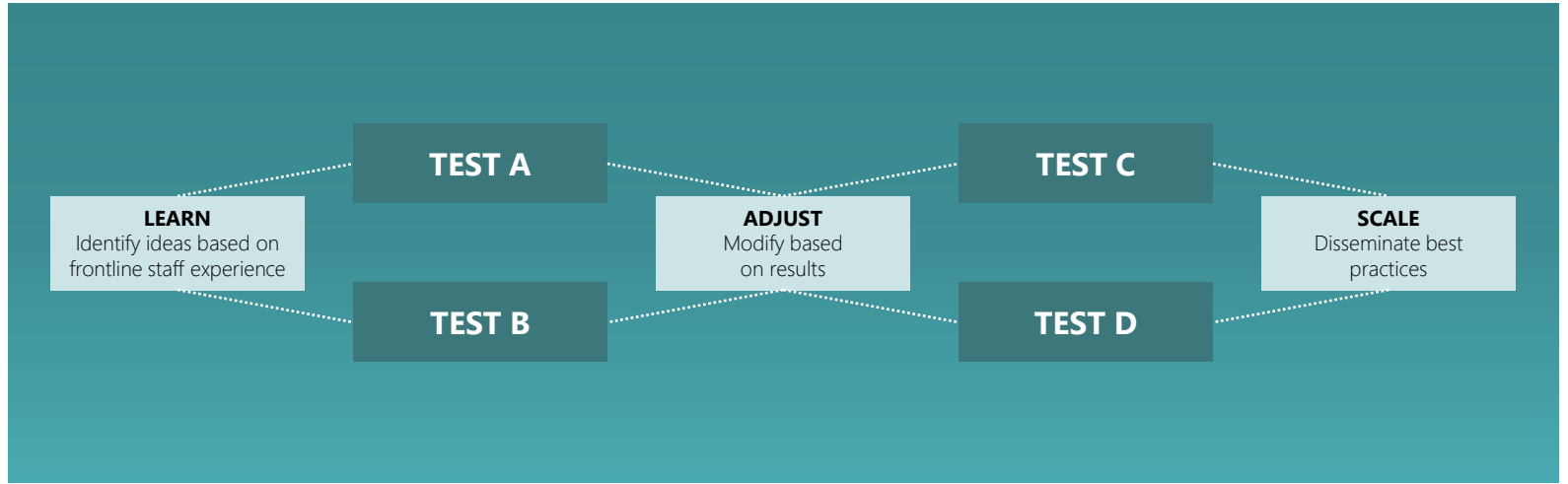
04 Lessons Learned



PCIL IS SUPPORTING VHA'S MISSION TO BE A LEARNING HEALTH SYSTEM



Every year numerous local operational quality improvement efforts take place within VA's Primary Care clinics, with no clear understanding of whether or not such interventions work



The Primary Care Analytics team (PCAT) created the PCIL at VA Puget Sound to partner with local operational teams to support pragmatic randomized QI projects, through design and evaluation, to improve primary care delivery for Veterans

MISSION

Provide evidence and insights that help primary care leaders and staff **deliver equitable and high-quality primary care** for Veterans

VISION

To rapidly and rigorously **design, test, and evaluate** QI interventions to **improve primary care delivery**

WHO WE ARE

Core Team Members (PCAT)

Director

Chief Data Scientist

Researchers & Clinicians

Analysts

Statistician

Program Managers

Operations Committee (VA Puget Sound)

Primary Care Chief & Deputy

Population Health Director

Primary Care Nurse Management

Primary Care Administrative Managers

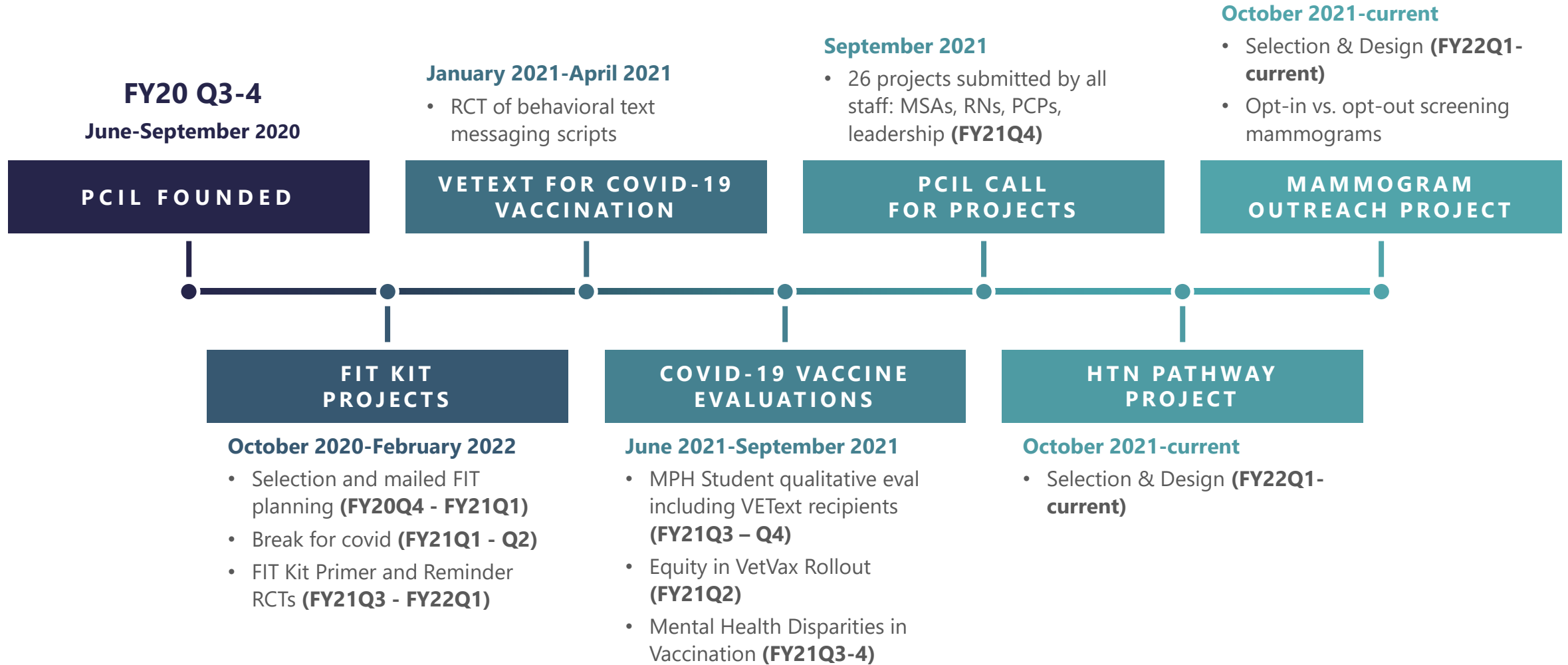
Director of Data & Analytics

Chief of Informatics

HOW WE WORK: PROJECT LIFECYCLE KEY STEPS

- 1 Identify Opportunities:** Open project call to staff and leadership, vet projects and review performance and prior field work
- 2 Plan:** Operational committee review, selection, define intervention, work with stakeholders
- 3 Design:** Further refine intervention design, rigorous evaluation planning
- 4 Test & Iterate:** Prepare and launch intervention, monitor, and analyze results
- 5 Disseminate:** Share results, lessons learned, and best practices

WE FOCUS ON HIGH PRIORITY LOCAL OPERATIONAL & QI WORK



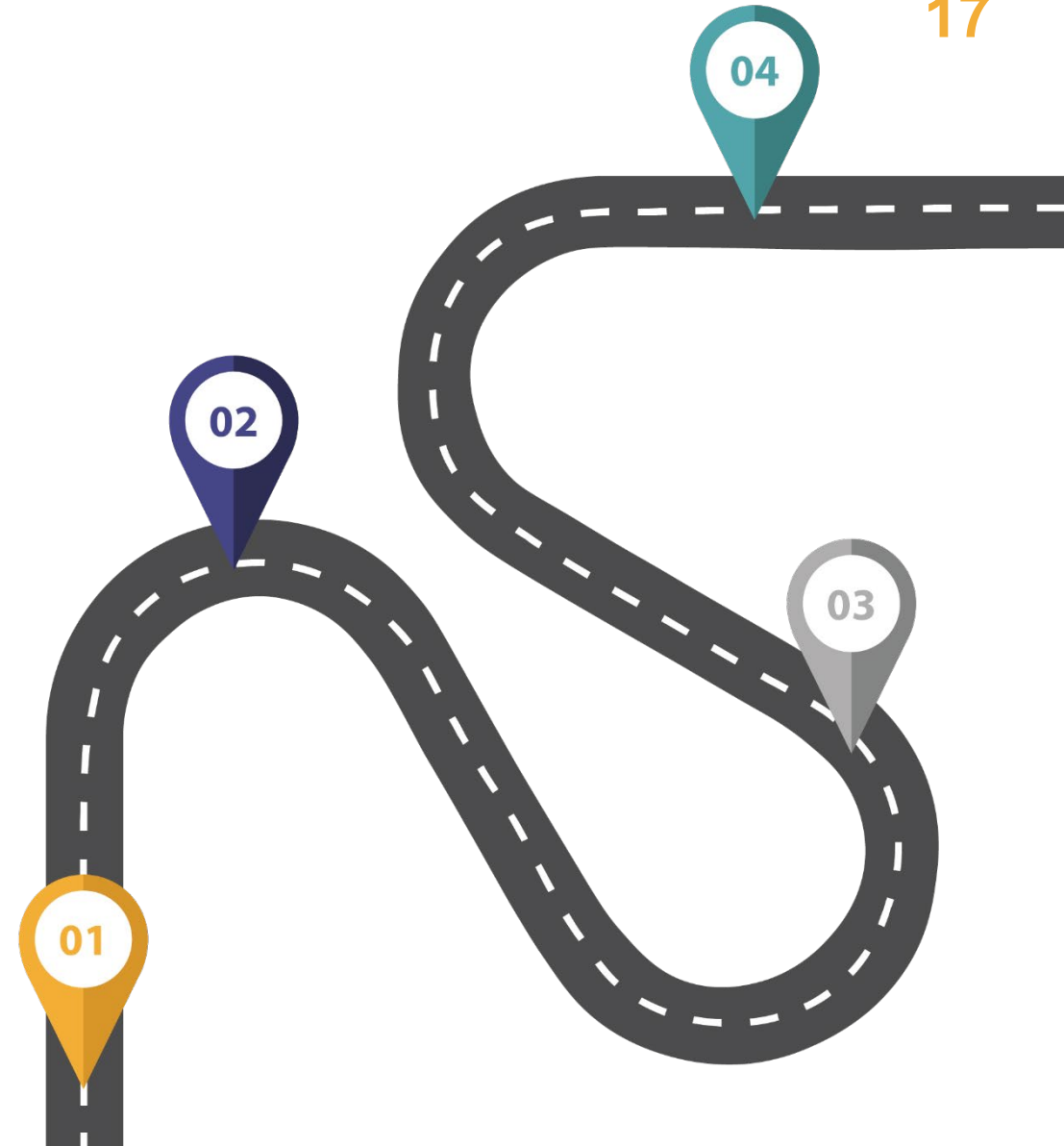
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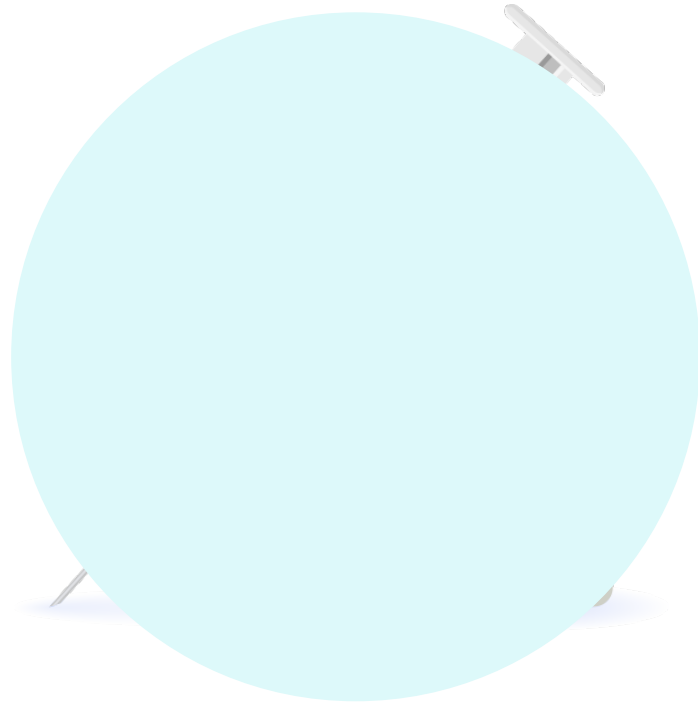
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WE FOCUS ON HIGH PRIORITY LOCAL OPERATIONAL & QI WORK



**COVID-19 Vaccine
Appointment Scheduling**



Mailed FIT Program
& Reminders

VETEXT FOR COVID-19 VACCINES

- **Nudges** are a change in the way choices are presented or information is framed that alters people's behavior
- VA Puget Sound had a large VETVax campaign planned, **1,000s of Covid-19 Vax Scheduling texts**
- Leveraged PCIL to ask: Do behaviorally framed "nudge" messages enhance uptake of Covid-19 vaccination among Veterans?

Designed 2 scripts in partnership with experts at University of Washington, approved by national VEText partners for use



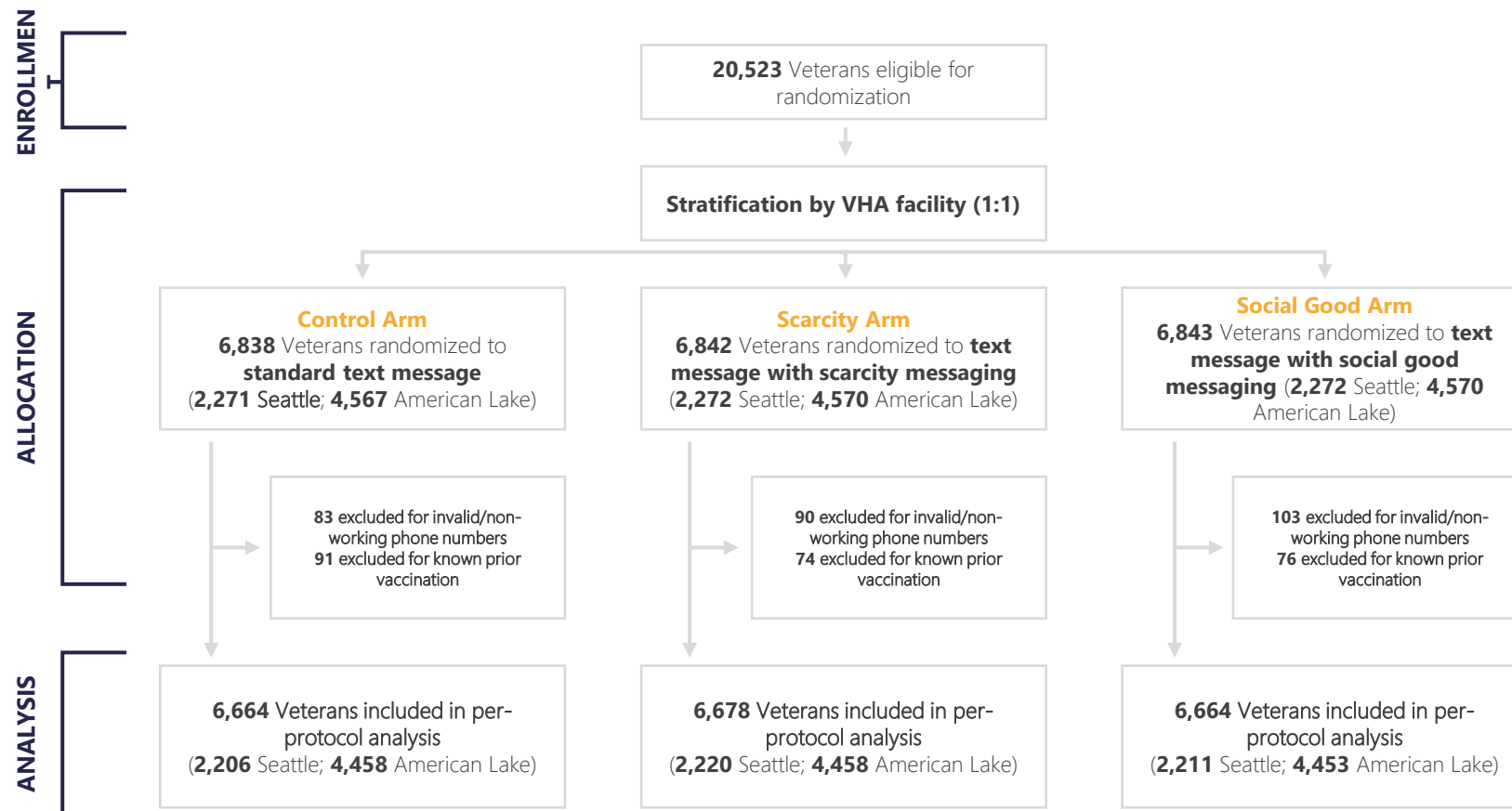
NEARLY 20,000 VETERANS RANDOMIZED TO VETEXT MESSAGE FOR COVID-19 VACCINATION

Included: All unvaccinated Veterans age >18

Excluded: non-working number, prior Covid-19 vaccination

Roughly 6,800 Veterans in control, scarcity, and social good groups

There was no significant difference in demographic characteristics between intervention and control groups (i.e., age, sex, race, rurality, SES level, drive distance to VA, and prior CRC screening)



COVID-19 VACCINATION COMPLETED OR SCHEDULED AT 7 DAYS

Behavioral messages above and beyond standard scheduling texts DID NOT increase

COVID-19 vaccination rates among Veterans

Vaccine Scheduled/Completed

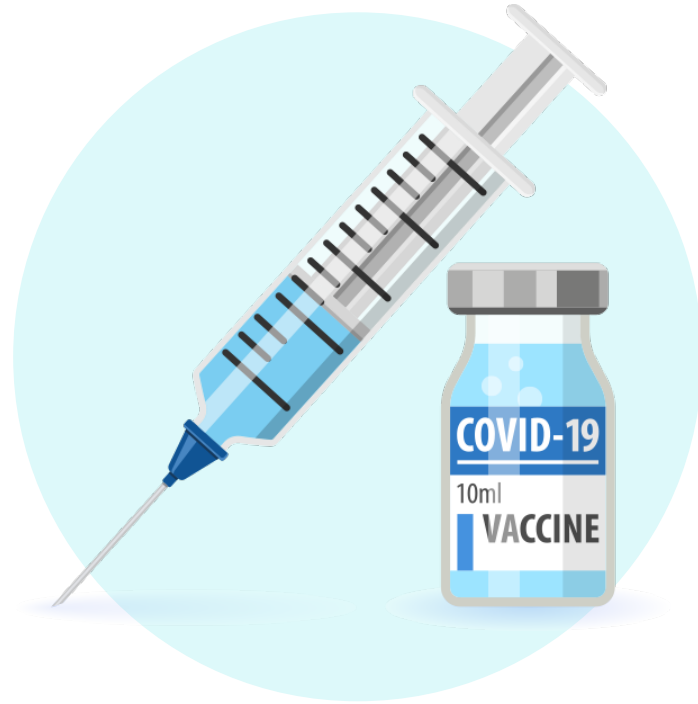
Group	7 Days	14 Days	31 Days
Control	19%	22%	29%
Scarcity	19%	22%	29%
Social Good	19%	23%	29%

Intent to treat

	OR ¹	95% CI ¹	P-value
Randomized Group			>0.9
Control	-	-	
Scarcity	1.01	0.92, 1.10	
Social Good	0.99	0.91, 1.08	

OR¹ = Odds Ratio, CI = Confidence Interval

WE FOCUS ON HIGH PRIORITY LOCAL OPERATIONAL & QI WORK



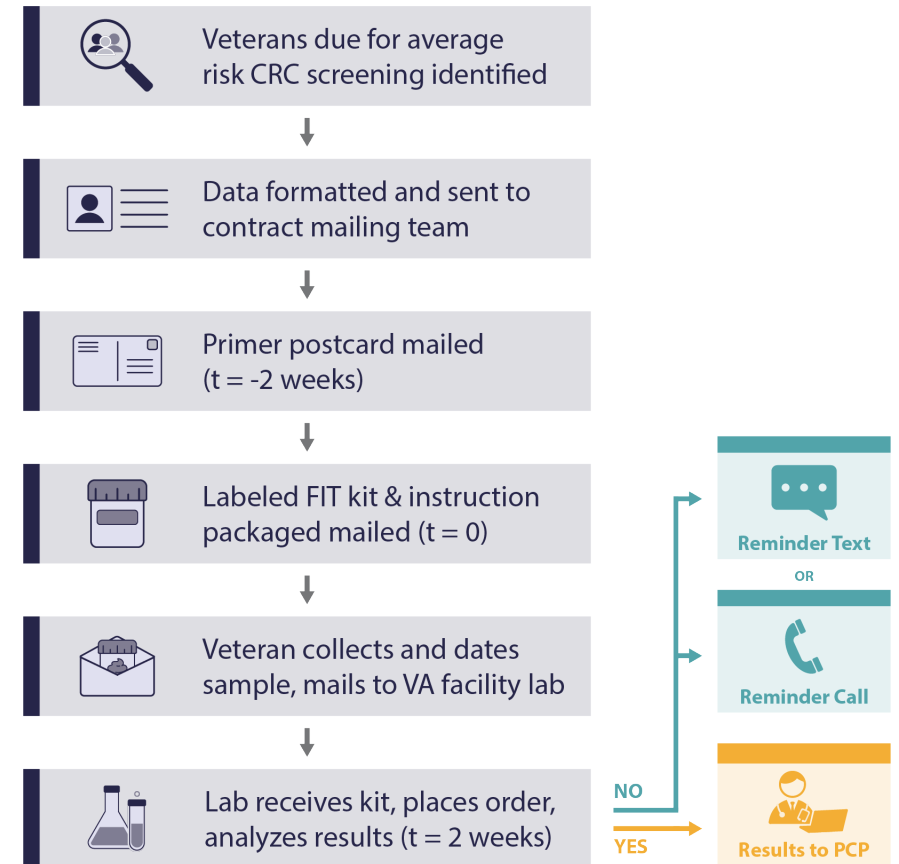
COVID-19 Vaccine
Appointment Scheduling



**Mailed FIT Program
& Reminders**

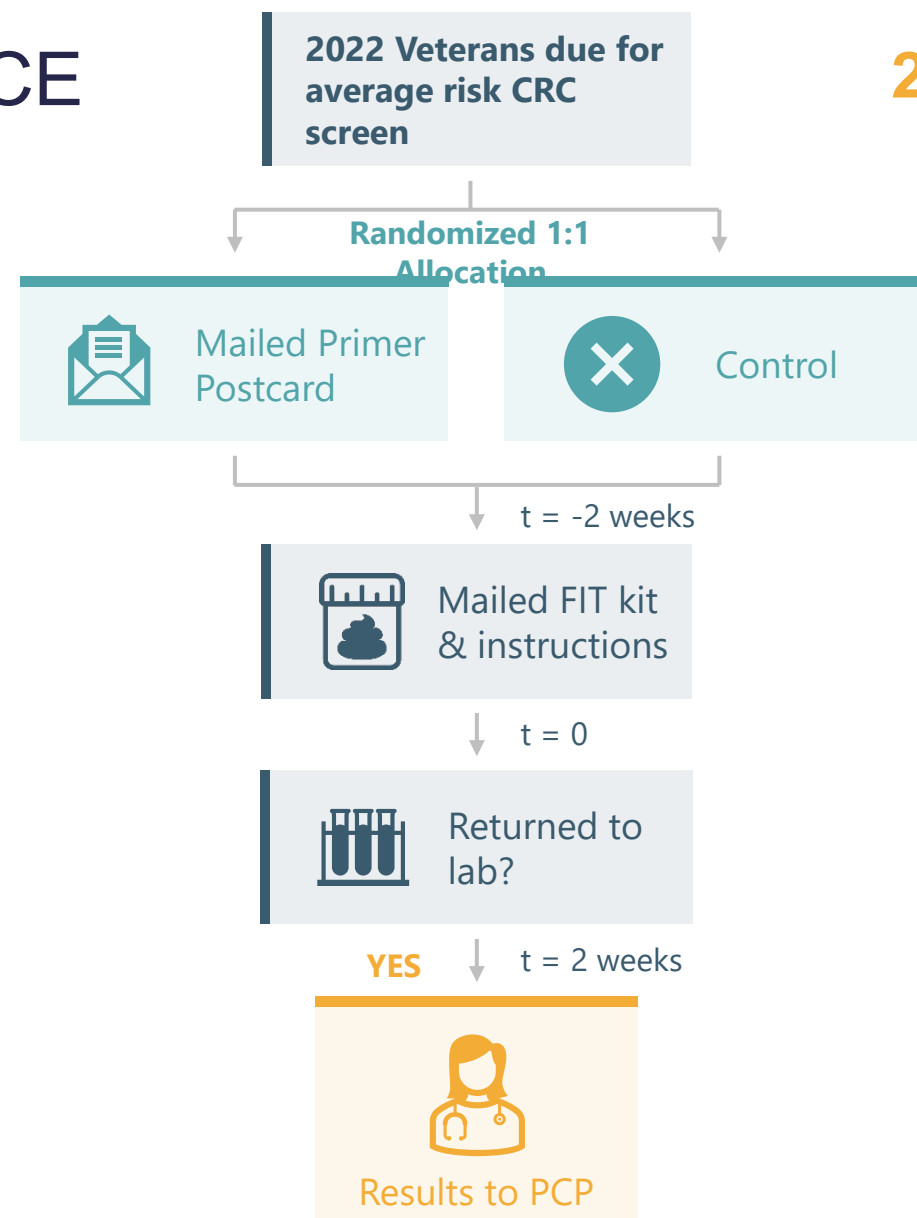
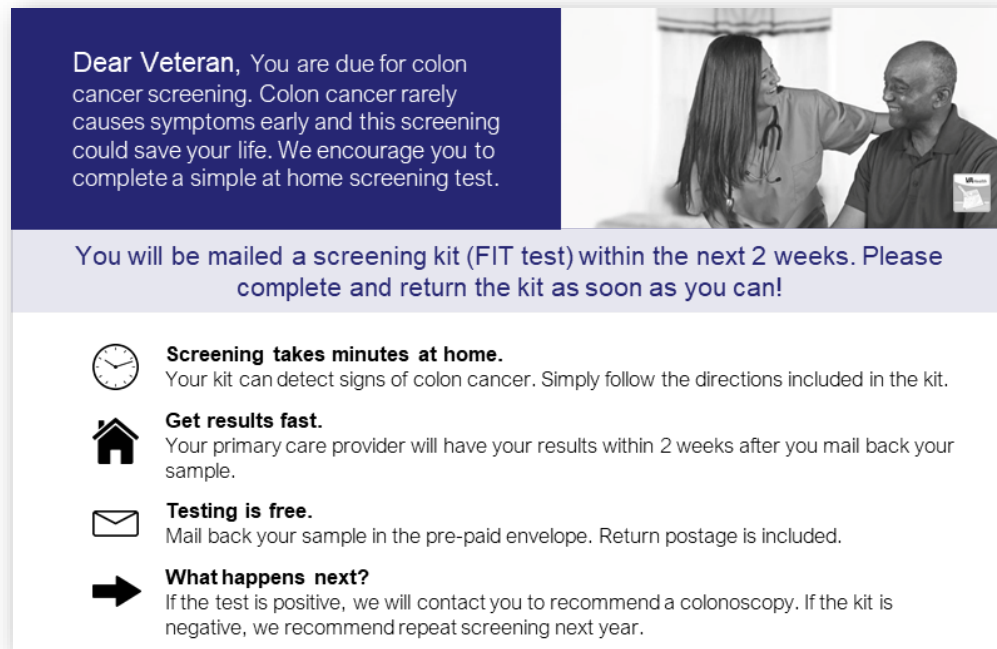
FIT PROJECTS SERIES: IMPLEMENTING A MAILED FIT PROGRAM (MFP) FOR COLORECTAL CANCER SCREENING

- FIT is a validated, in-home method for CRC screening
- High priority catch-up due to Covid-19 related screening disruptions
- A multidisciplinary implementation team collaborated with regional mailing and logistic entities to mail FIT kits with instructions
- **To evaluate key components of the MFP, we conducted two RCTs**



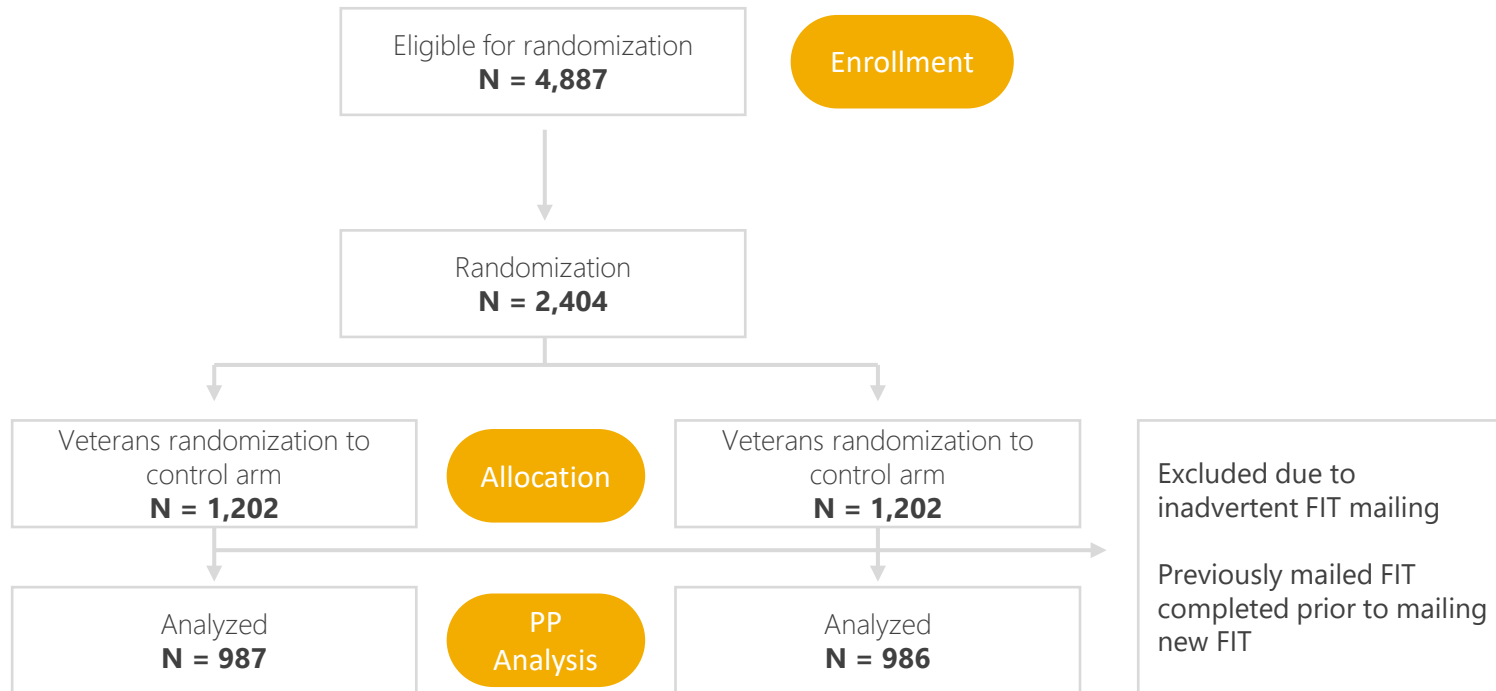
RCT 1: DO PRIMER POSTCARD ENHANCE COMPLETION OF MAILED FITS?

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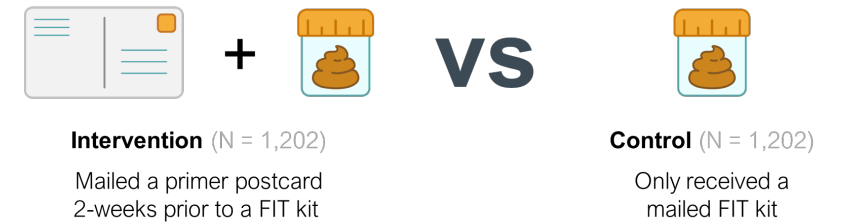
- Work from others in nonveteran populations has shown advanced notification, or primer, may increase FIT return
- Impact may be up to 4% increase in FIT completion

RCT 1: RANDOMIZED TO PRIMER POSTCARD 2 WEEKS BEFORE FIT



Included: Average risk Veterans 45-75y due for CRC screening

Excluded: Prior history of CRC or colectomy, on clopidogrel, or hospice care , no visit within 2 years



There was **no significant difference** in demographic characteristics between intervention and control groups (i.e., age, sex, race, rurality, SES level, and prior CRC screening)

RCT 1: FIT RETURN AT 90 & 180 DAYS

Postcard primers 2 weeks before mailed FIT DID NOT increase colon cancer screening among average risk Veterans

Group	FIT Return Rate 90 Days	FIT Return Rate 180 Days
Control (N=1,202 ¹)	319 (27%)	349 (29%)
Primer (N=1,202 ¹)	352 (29%)	385 (32%)

¹ n/N (%) ² Pearson's Chi-squared test

**p =
0.13²**

**p =
0.11²**

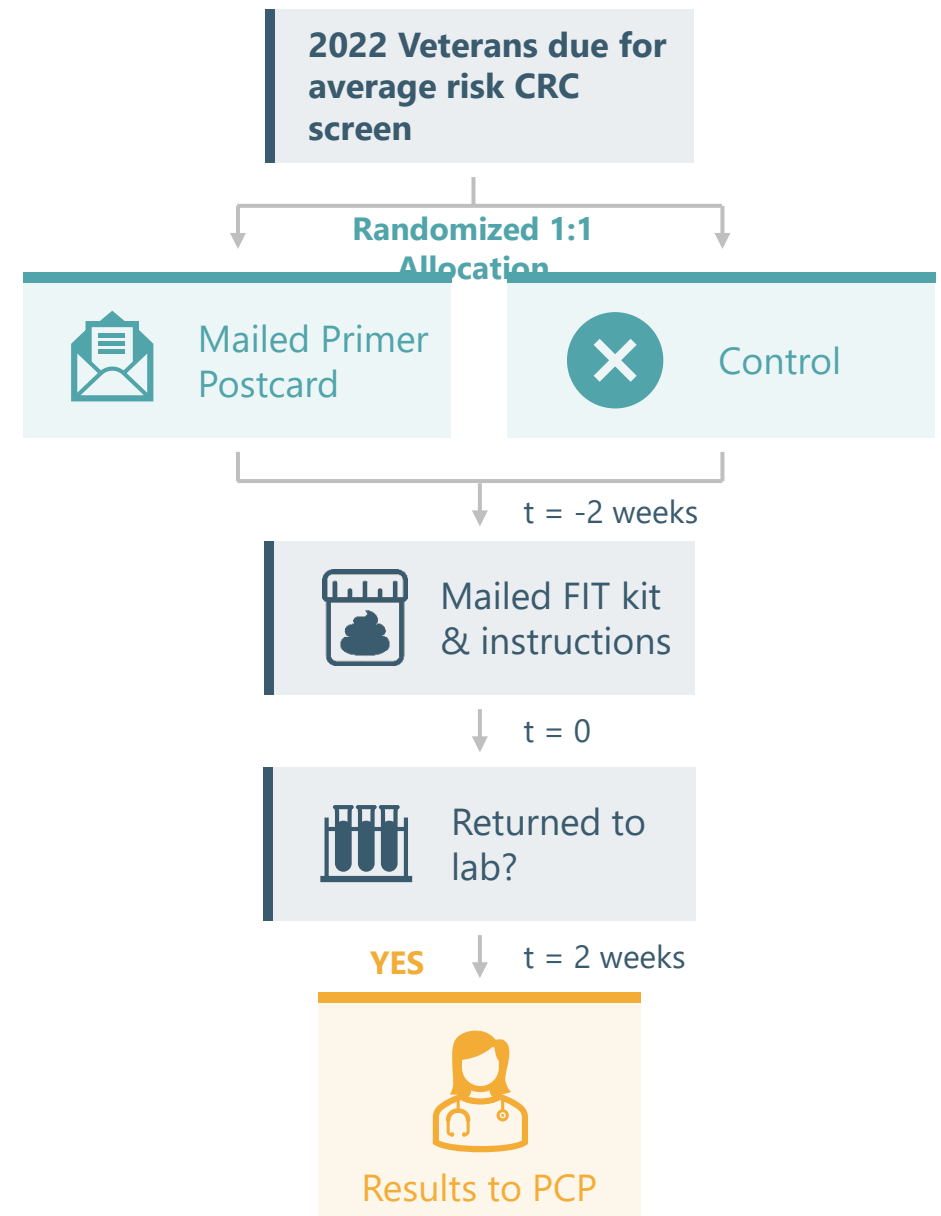
Odds of FIT kit return			
	OR ¹	95% CI ¹	P-value
90 days	1.14	(0.94, 1.38)	0.2
180 days	1.14	(0.95, 1.37)	0.2

OR¹ = Odds Ratio, CI = Confidence Interval

RCT: PRIMER POSTCARD FOR MAILED FITS

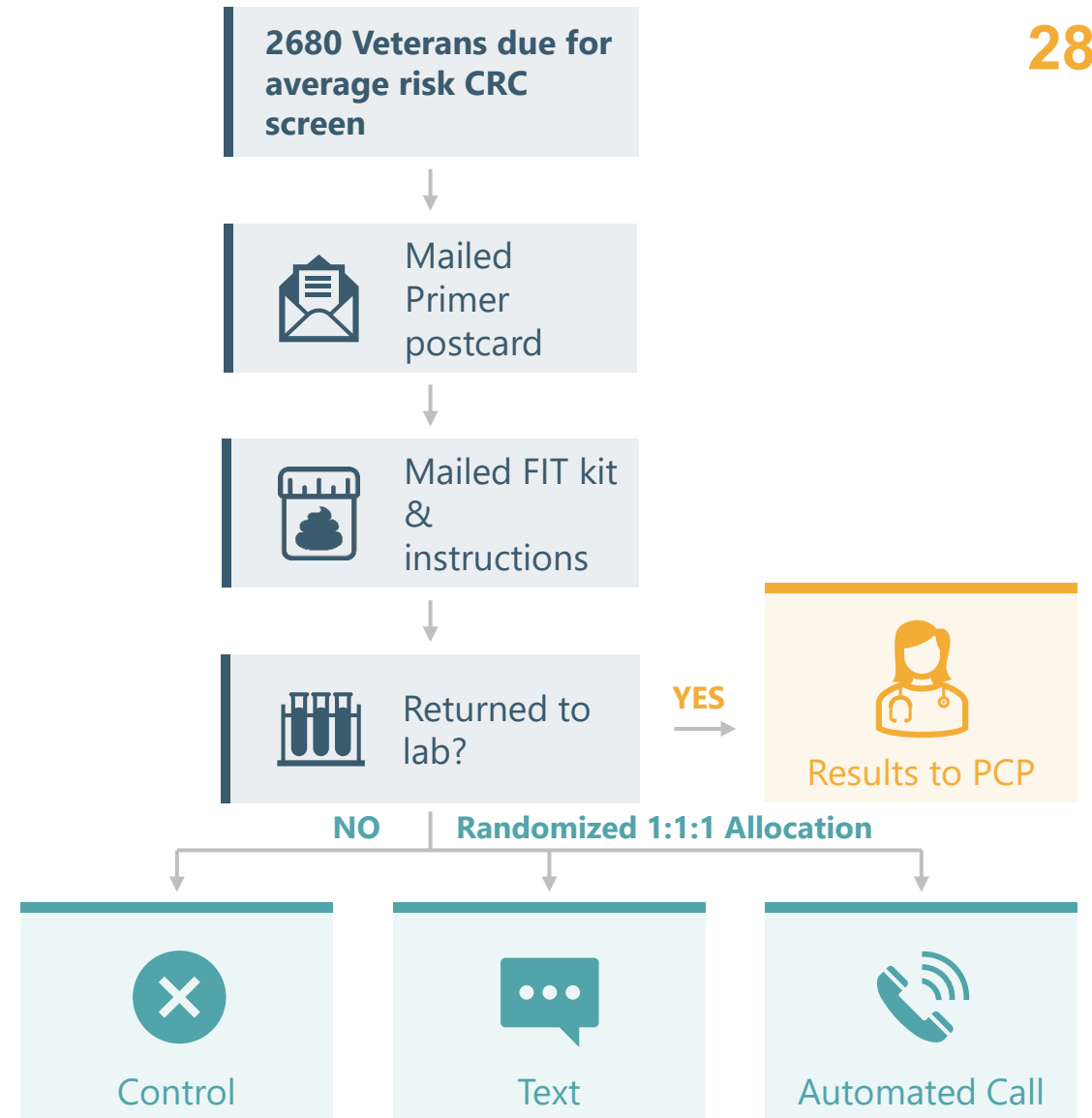
BOTTOM LINE

Postcard primers **may not be worth the effort**, to streamline the MFP would consider removing this step



RCT 2: DO PHONE AND/OR TEXT REMINDERS ENHANCE RETURN OF MAILED FITS?

Work from others in non-Veteran populations has shown **post-mailed FIT reminders increase FIT return**



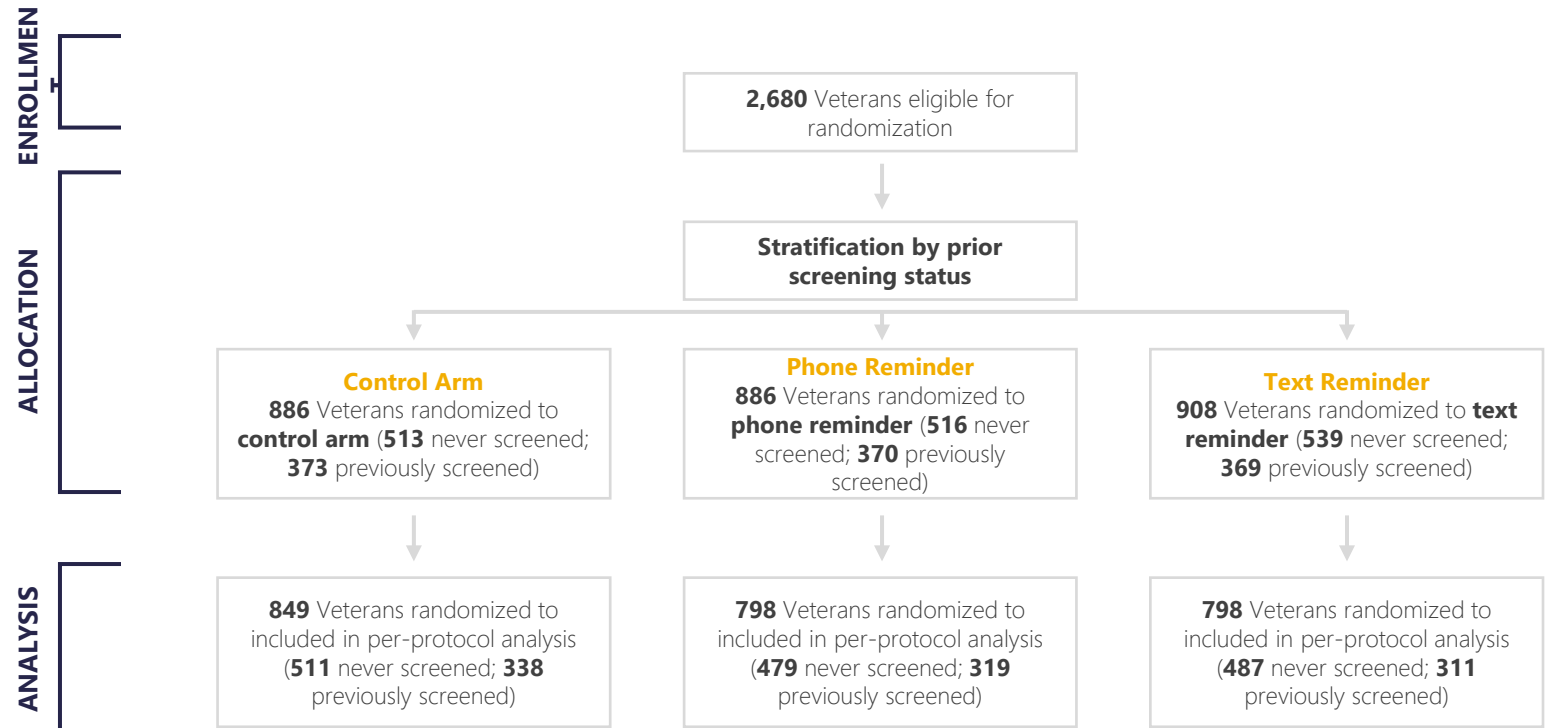
RCT 2: RANDOMIZED TO PHONE & TEXT REMINDERS 2 WEEKS AFTER MAILED FITS

Included: Average risk Veterans 45-75y due for CRC screening

Excluded: Prior history of CRC or colectomy, on clopidogrel, or hospice care, no visit within 2 years



There was **no significant difference** in demographic characteristics between intervention and control groups (i.e., age, sex, race, rurality, SES level, drive distance to VA, and prior CRC screening)



RCT 2: PHONE & TEXT REMINDERS FOR MAILED FITS

VEText and automated telephone reminders resulted in a **10% increase** in colon cancer screening among average risk Veterans

Randomized Group	FIT Return Rate 90 Days	FIT Return Rate 180 Days
Control (N=886 ¹)	250 (28%)	283 (32%)
Automated Call (N=886 ¹)	345 (39%)	371 (42%)
VEText (N=908 ¹)	344 (38%)	363 (40%)
	¹ n/N (%) ² Pearson's Chi-squared test p <0.001²	p <0.001²

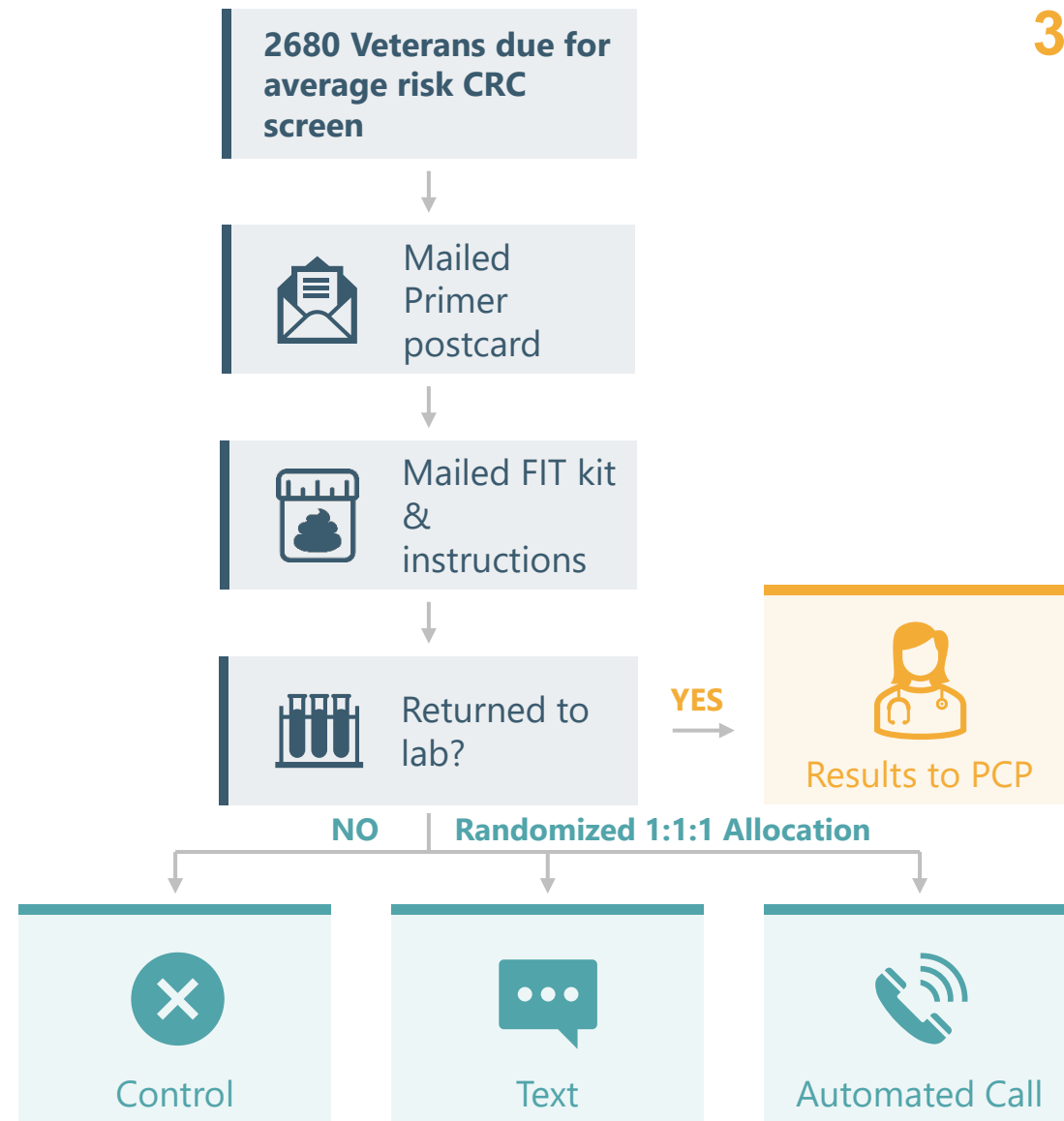
Odds of Return at 90 Days			
Group	OR ¹	95% CI ¹	P-value
Control	-	-	<0.001
Arm 2 - Audiocare	1.68	1.37, 2.08	
Arm 3 - VEText	1.61	1.30, 1.98	

OR¹ = Odds Ratio, CI = Confidence Interval

RCT 2: PHONE & TEXT REMINDERS FOR MAILED FITS

Bottom Line

Both text and automated phone call strategies are **effective**, so use whichever is available and/or cost effective



SHARING OUTCOMES & COMMUNICATING WITH PARTNERS

- Biannual Newsletter to Primary Care and Relevant Stakeholders
- Presentations at Primary Care Leadership Meetings and Staff Meetings
- Project in Brief 1-Page Summaries and SharePoint
- Presentations at VA Regional and National Meetings
- Formal Manuscripts

IMPLEMENTING A MAIL FECAL IMMUNOHISTOCHEMICAL (FIT) PROGRAM FOR COLORECTAL CANCER (CRC) SCREENING AT VA PUGET SOUND

Primary Care Innovations Lab | February 2022

KEY OUTCOME

We successfully implemented a Mailed FIT Program for population-based CRC screening, mailing over 4,000 FIT kits in 3 months. We found a 34% FIT return rate among participating Veterans.

METHOD

Participants

- Average Risk Veterans age 45-75 overdue or due within 90 days for CRC screening (with no previous history of CRC, no advanced illness or hospice, and enrolled with PCP).
- 2022 patients were included in the MFP in the first 3 weeks.
- The mean age was 66 and the majority were male (90%) and white (73%).
- Approximately 1/3 of patients had previously completed FIT screening.

Method

- Patients were identified through a national database for inclusion in the MFP intervention.
- The MFP intervention steps are shown in Figure 1. A multidisciplinary implementation team collaborated with regional mailing and logistic entities to mail FIT kits with instructions.
- To evaluate key components of the MFP, we conducted two RCTs. In the first RCT, patients were randomized to receive a primer postcard before the kit, and in the second RCT, patients were randomized to receive an automated call or text reminder after the FIT kit. Outcomes will be reported separately.
- We implemented the MFP and analyzed the return and positivity rates 90 days after mailing the kits.

OUTCOMES

See Figures 2 & 3.

LESSONS LEARNED

- 1 A Mailed FIT Program (MFP) provides needed healthcare screening, especially during a time of reduced in-person care.
- 2 A successful MFP requires actionable data, a dedicated team, and partnerships with logistics and external mailing contractors.
- 3 The MFP team must partner with frontline staff, monitor the process, and ensure appropriate results follow-up.
- 4 Return rates were lower for the MFP than prior routine care, but the MFP efficiently reaches more patients and those who may not come in for care.

Figure 1. Process Map of Mailed FIT Program

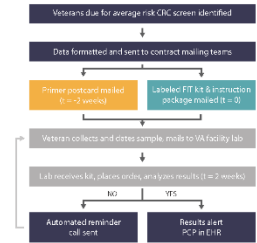
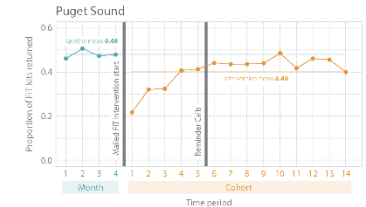


Figure 2. FIT Kit Return and Positivity Rate at 90 days

	Total Sent	Total Returned N (%)
Primer Evaluation (RCT #1)	2,022	572 (33%)
Reminder Evaluation (RCT #2)	2,650	919 (35%)
Combined	4,672	1,491 (34%)

100% reported results to the clinician and/or primary care provider.

Figure 3. 90 Day FIT Kit Return Rate at Baseline and After Implementation of Mailed FIT



To capture routine care, we identified a pre-implementation baseline of ordered and returned FIT kits from 3-6 months before the implementation of the MFP. We also capture rates for cohort for the baseline with care and care after implementation of the MFP.

RECOMMENDATIONS

- MFPs can be used by VA to increase CRC screening outreach, and conserve clinic and procedural resources.
- We recommend that this best practice be spread to other VA sites.
- We recommend VA utilize dedicated screening teams who have expertise in the data, logistics, and clinical aspects of a MFP, and who can partner with local site champions.

<https://dvagov.sharepoint.com/sites/PCInnovationLab>

PCIL VA
Contact: PCIL@va.gov

VA U.S. Department of Veterans Affairs

SUCCESSSES

- Conducted multiple high priority projects
- Developed sustainable model for partnership between research and operations on a local level
- Built sustainable relationships and visibility with primary care managers and frontline staff
- Figured out how to work with national systems, i.e. AudioCare and VEText
- Created a 'project pipeline'
- Dissemination via meetings, presentations, newsletter, project in brief summaries, formal manuscripts
- Support for junior faculty and empowering staff

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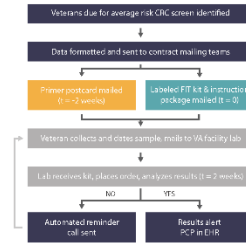
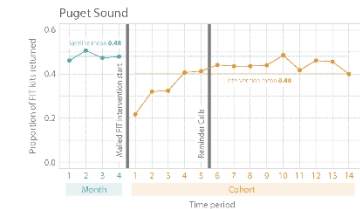


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N=500 reported for the combined control and intervention sites.

Figure 3. 90 Day FIT Kit Return Rate at Baseline and After Implementation of Mailed FIT



To capture routine care, we identified an implementation baseline of ordered and returned FIT kits from 3-6 months before the implementation of the MFP. All data values noted are shown for the baseline and are not adjusted for return rates at baseline.

RECOMMENDATIONS

- MFPs can be used by VA to increase CRC screening outreach, and conserve clinic and procedural resources.
- We recommend that this best practice be spread to other VA sites.
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PCIL VA
Contact: PCIL@va.gov

VA U.S. Department of Veterans Affairs

CHALLENGES IN WORKING WITH CLINICAL OPERATIONS PARTNERS



Timelines for operation and research differ



Operational priorities change frequently



Communication, communication, communication



COVID-19, and now, Cerner, has redeployed key operational staff



Framing the problem into a question



A limited number of projects can be supported by PCIL at a time/per year



Developing trusting relationships and visibility takes time

STRATEGIES FOR WORKING WITH ORGANIZATIONAL LEADERS

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Ongoing, frequent bi-directional contact between our team and operational leaders

- Integration of our team into facility primary care leadership and operational meetings
- Being aware of primary care and facility priorities and initiatives, integration of work



Shared governance PCIL/analytics team and primary care clinical leaders

- Operations Committee; oversees project selection and design, and ensures alignment to operational priorities, meets bimonthly to review projects

CONCLUSIONS

- A Learning Healthcare System is promising model, with several challenges in the actual implementation
- PCIL has proven to be a successful model for embedding research teams into local clinical operations at VA
- Keys to Success in a Learning Health System - **Improve Chances That Research Will Be Relevant and Actionable**
 - Integrate clinical leaders into health care delivery research
 - Development of trust between research and care delivery leaders
 - Leadership and staff engagement
 - Use of methods that are both rigorous and rapid
 - Provide meaningful support for clinical work



Thank you,
**Office of
Primary Care!**

Primary Care Analytics Team (PCAT)

Kari Nelson

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Brinn Jones

Chelle Wheat

Emily Ashmore

Questions/
Feedback

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FOR MORE INFORMATION VISIT [SHAREPOINT](#)