

Implementation of Oral Anticancer Medication Early Monitoring Using Electronic Questionnaires

VANDERBILT  UNIVERSITY

MEDICAL CENTER

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Disclosure Statement

- We have no conflicts of interest to disclose
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Background

Adverse effects may occur early in oral anticancer, limiting a patient's ability to stay on the therapy ¹⁻⁴

The Hematology/Oncology Pharmacist Association Best Practices for management of Oral Anticancer Therapy recommends initial monitoring of symptoms and adherence between 7 and 14 days of the start of anticancer medication ⁵

Electronic health record (EHR) patient portals are an easy way to communicate to patients and can be utilized as a tool for reporting adverse effects ⁶⁻⁸

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 2. Bindler RJ. *Hosp Pharm.* 2015; 50(2): 91-2.
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Background: Vanderbilt Ingram Cancer Center

- Academic Medical Center
- 4 embedded clinic specialty pharmacists
- ~ 70 new oral anticancer medication starts each month
- Early monitoring can be challenging for busy clinics
- ~ 85% of patients have **active** EHR patient portal accounts

Purpose



Patients with an **active electronic health patient portal account** who are prescribed a **new oral anticancer medication**, will it be possible to send an automated **patient assessment questionnaire** shortly after patients initiate oral therapy?

Objective

Aim 1

To evaluate differences in timing and frequency of side effect identification resulting in a pharmacist intervention during the first 45 days of treatment between intervention and usual care.

Aim 2

To evaluate the **implementation, feasibility and uptake** of a patient assessment questionnaire deployed and managed by the pharmacist via the EHR patient portal for early anticancer medication monitoring 7 – 14 days after therapy start.

Aim 3

To evaluate the difference in dose interruptions, dose changes, hospitalizations/ED visits, and medication discontinuations at 90 days after initial medication dispense between intervention and usual care.

Methods

Single center, IRB approved, randomized, pragmatic, cohort study conducted at Vanderbilt Ingram Cancer Center Oncology Clinic

Adult patients filling a new oral anticancer medication at Vanderbilt Specialty Pharmacy at least once between August 15, 2023 to February 29, 2024

Patients with an active EHR patient portal

Implementation and feasibility assessed using the RE-AIM framework commonly used in implementation science⁹

Reach: number of individuals to participate in an intervention/initiative

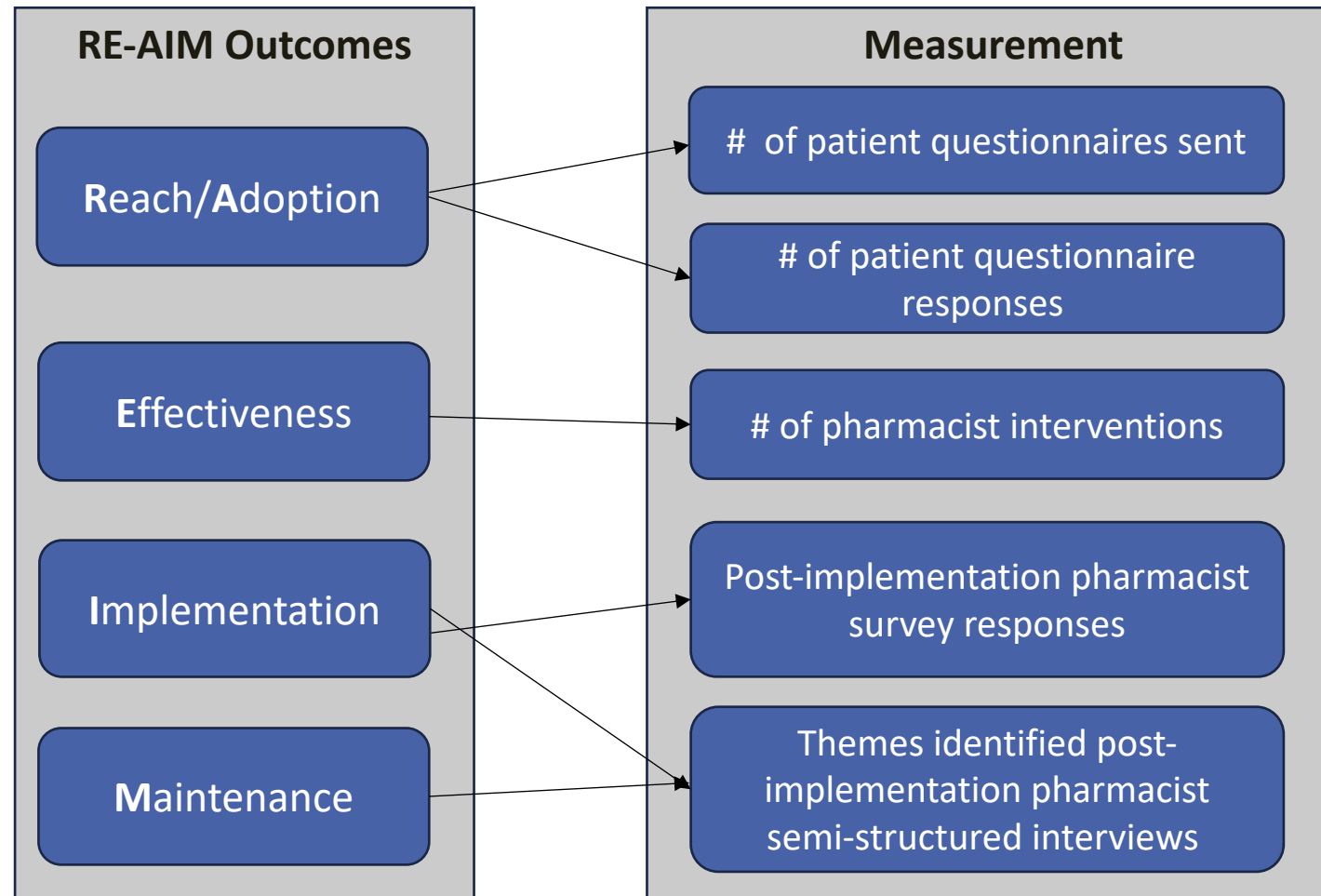
Effectiveness: impact of intervention

Adoption: number of individuals who are willing to initiate an intervention

Implementation: feasibility of the intervention

Maintenance: ability to become part of routine or organizational practice

Methods: RE-AIM Framework



Methods: Exclusion Criteria

Hematology clinic patients

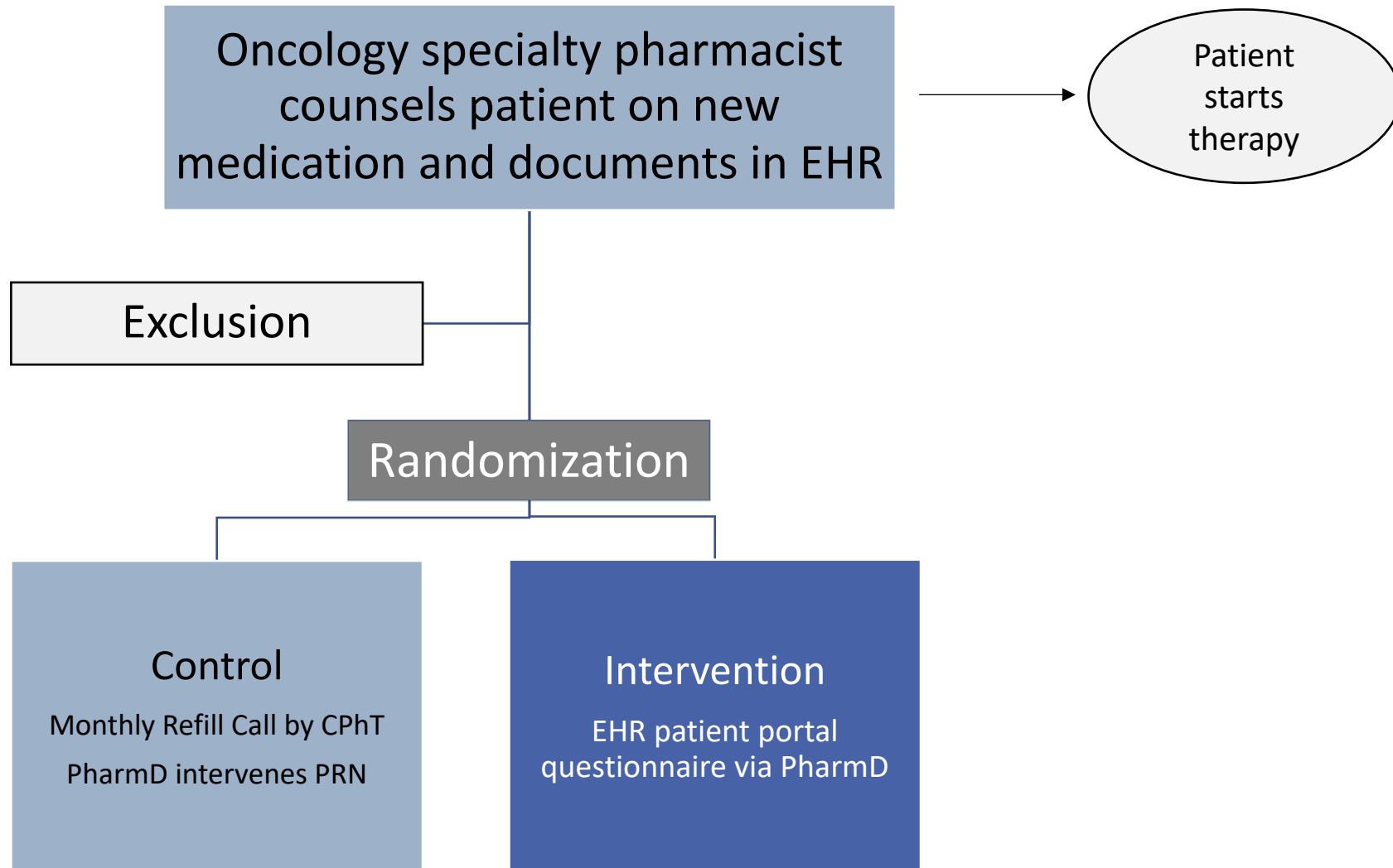
Patients who never started the oral anticancer medication

Patients who discontinued treatment within 14 days of initiation

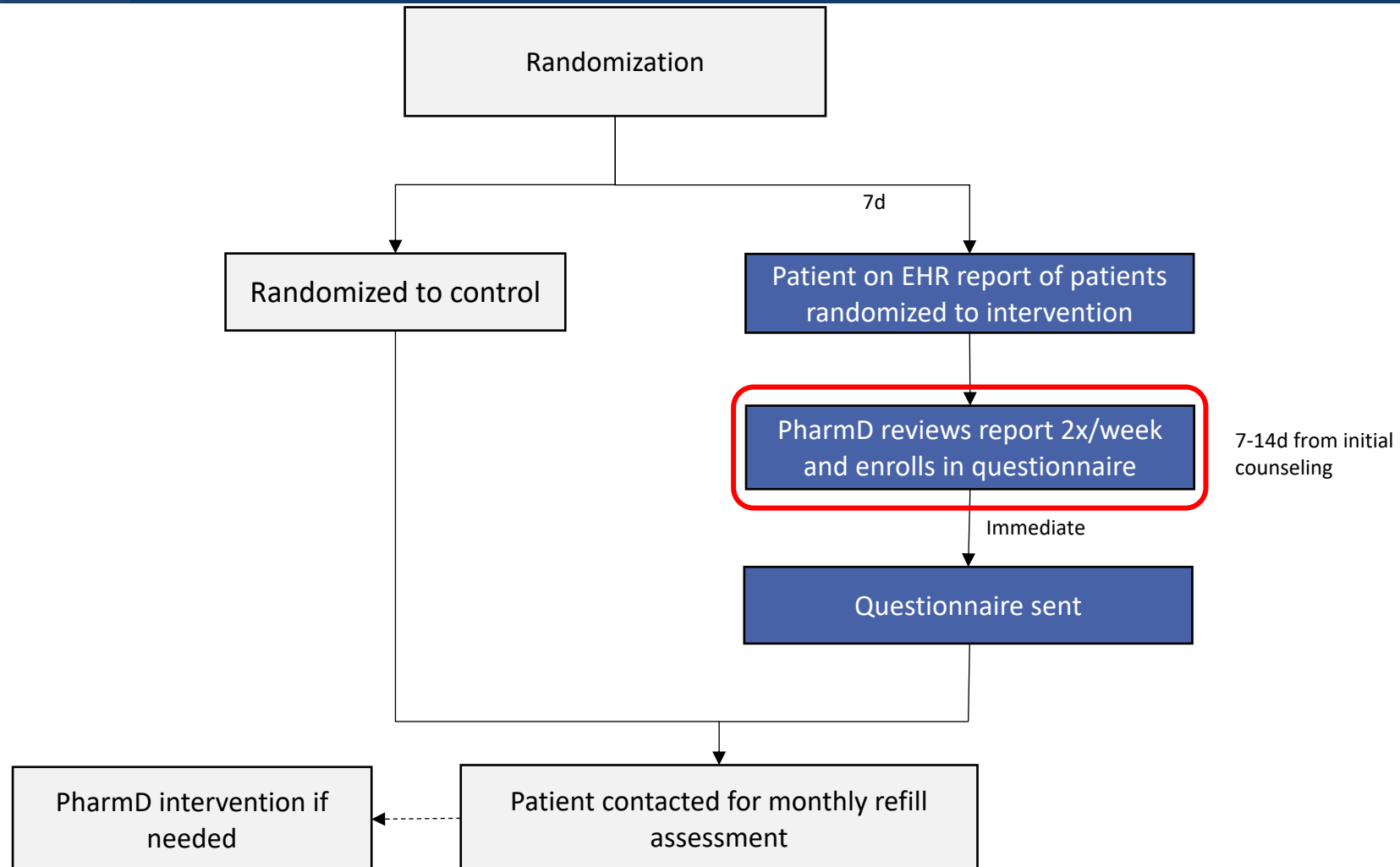
Patients prescribed an oral anticancer medication that already had a specific monitoring protocol that differs from the general monitoring protocol

Patients prescribed an oral anticancer medication that is not new for them

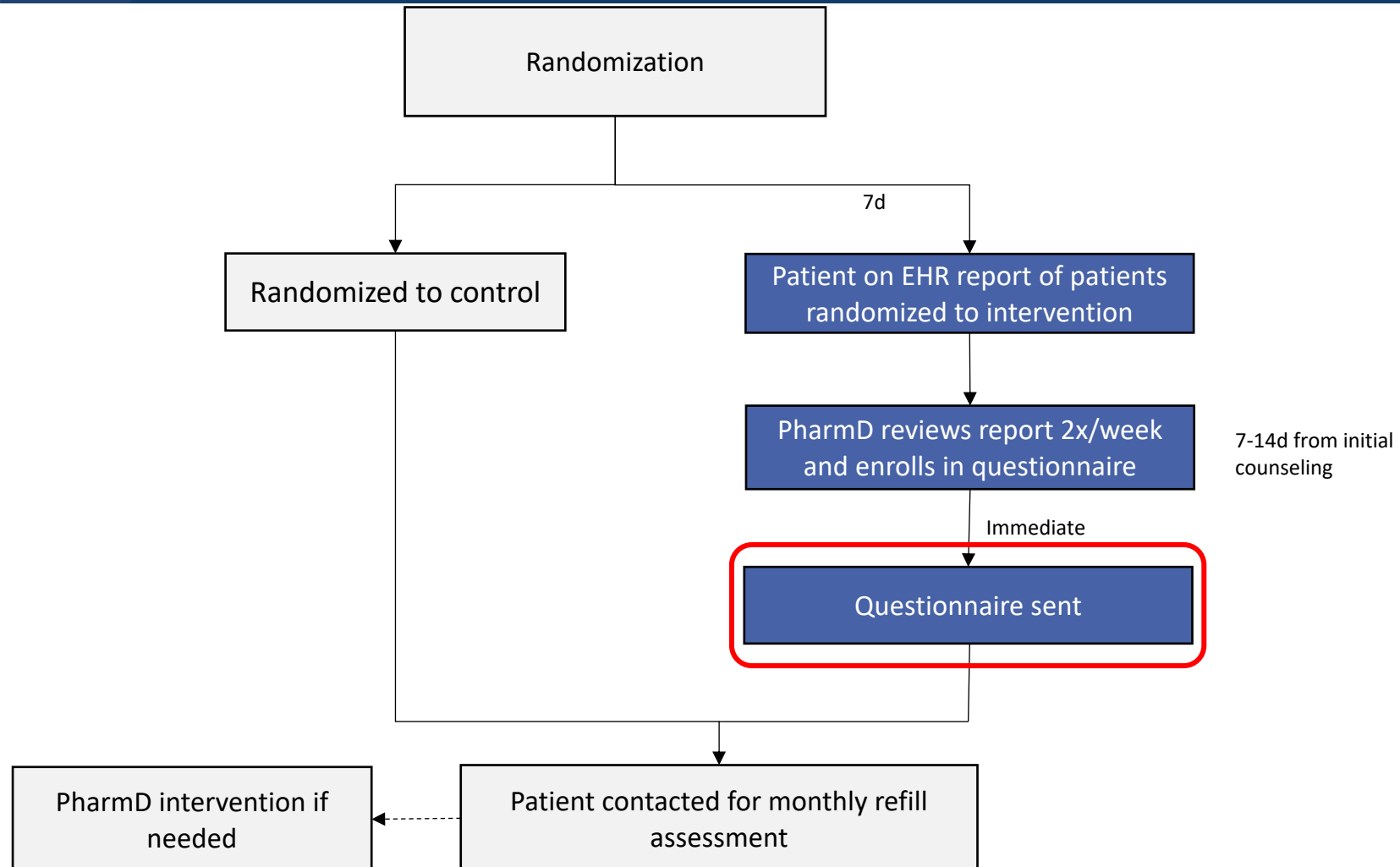
Methods



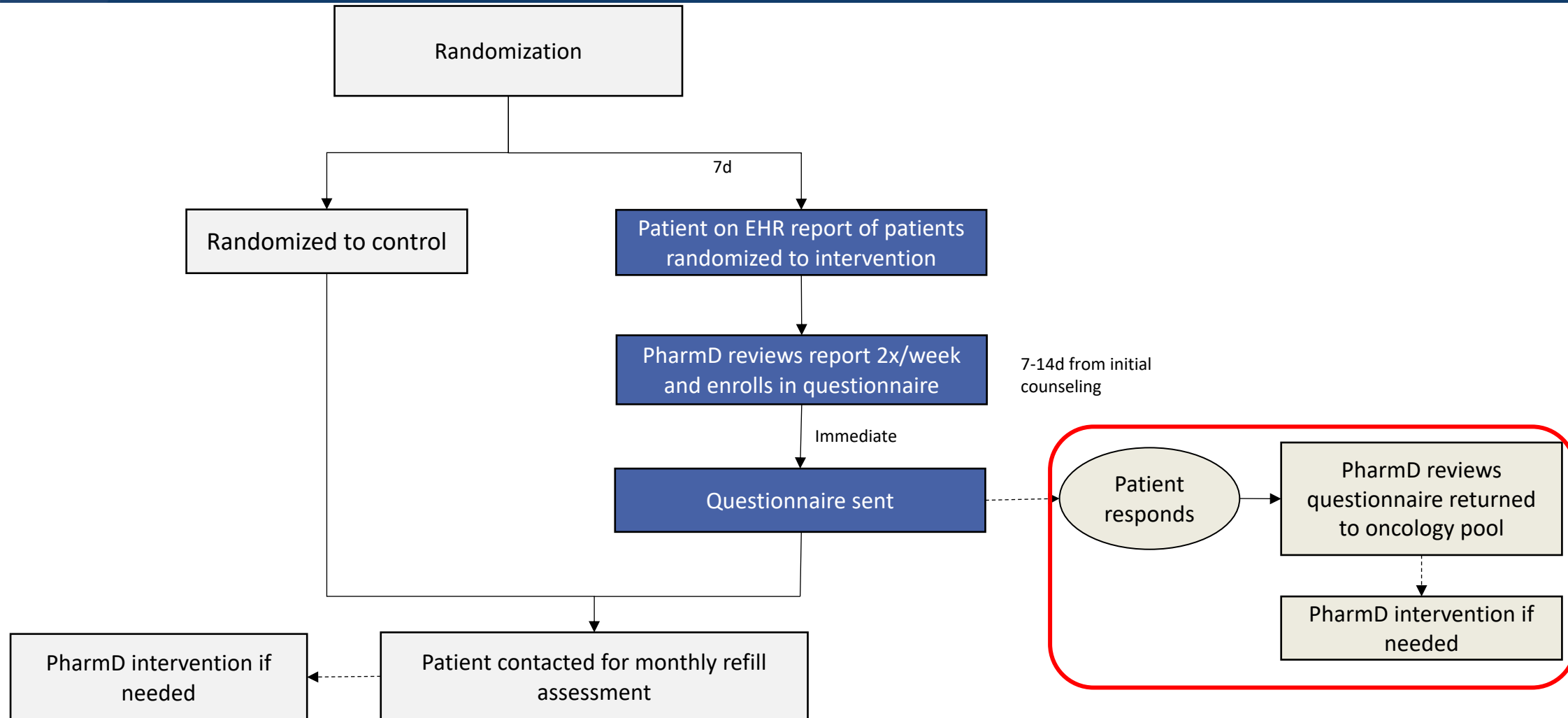
Methods






Methods



Methods



Methods: Implementation Science

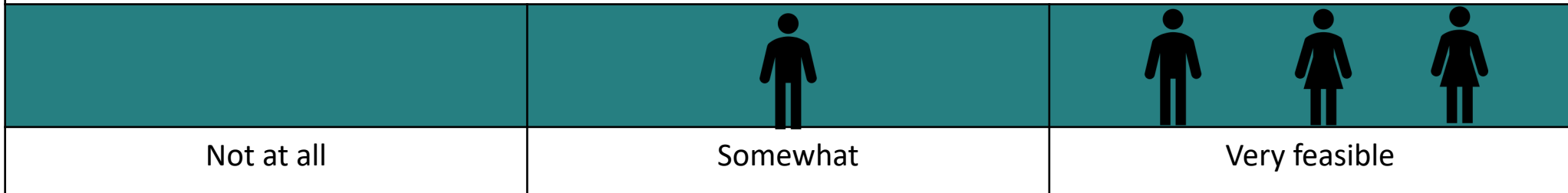
	Title	Focus of survey/interview
	Pharmacist pre implementation survey	Current practice, anticipated questionnaire feasibility, patient perception, and concerns
	Pharmacists post implementation survey	Survey appeal, impact on patient care, ongoing need for use, feasibility, and improvements on the questionnaire
	Pharmacists post implementation semi-structured interview	Questionnaire implementation and impact

Results: Implementation

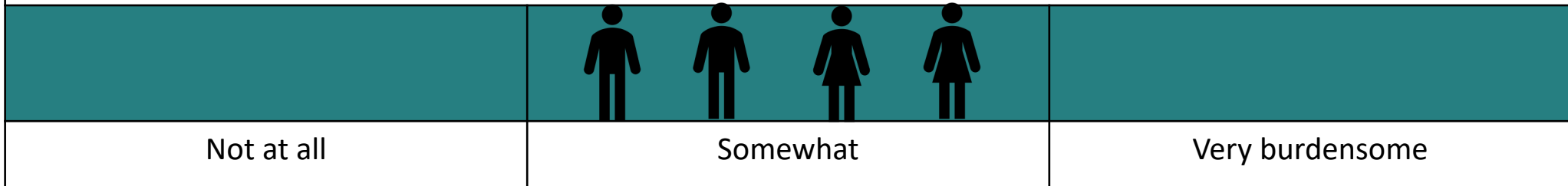


Pharmacist Pre-Implementation Survey: Feasibility

How feasible do you think sending a questionnaire assessing adherence and adverse effects to oral anticancer medications within 14 days of treatment initiation through the patient portal will be?



How burdensome do you perceive this new early monitoring will be for the clinic?



Results: Implementation



Pharmacist Pre-Implementation Survey: Workflow Concerns

- Pharmacists **occasionally (n=2) to once (n=2)** followed up with patients who were initiated on new oral anticancer medications **within the first 45 days**
- All pharmacists perceived early treatment monitoring would be **very beneficial to implement** (n=4)
- Pharmacists' workflow concerns
 - Training on an additional feature within the EHR
 - **Time** dedicated to manage report
 - Timeliness of **responding** to completed patient questionnaires

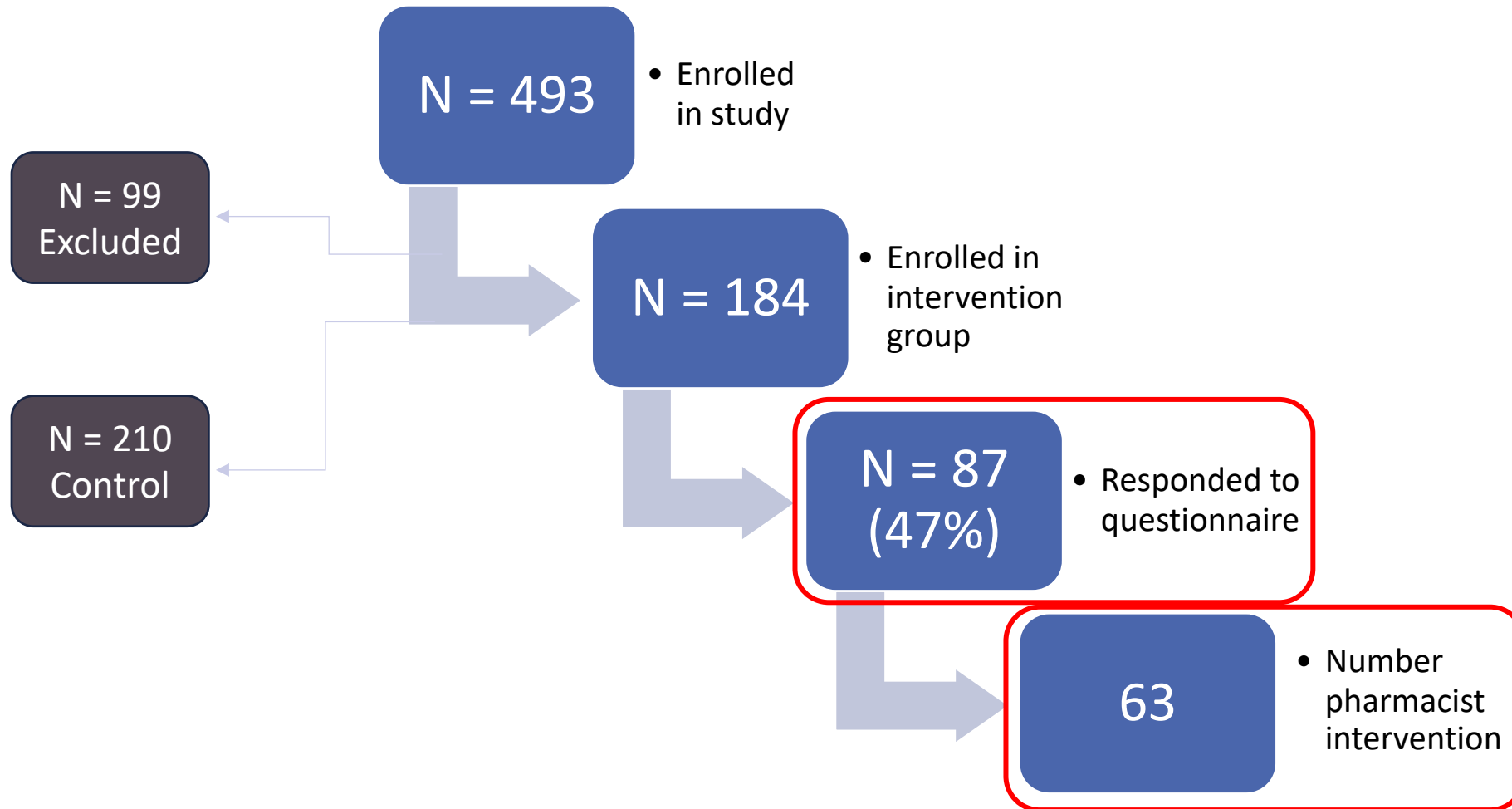
Results: Implementation



Pharmacist Pre-Implementation Survey: Patient Questionnaire Concerns

- Technology issues
- Limited computer literacy users
- Patients infrequently checking messages on patient portal
- Patients' response rate to questionnaire



Results: Reach, Adoption, and Effectiveness







Results: Post-Implementation



Pharmacists' Perception of electronic questionnaire: Feasibility

The early monitoring questionnaire is appealing to me			
			
Strongly disagree	Disagree	Agree	Strongly agree

The early monitoring questionnaire is easy to use			
			
Strongly disagree	Disagree	Agree	Strongly agree

How burdensome was the questionnaire implementation?		
		
Not at all	Somewhat	Very burdensome

Results: Implementation



Place in patient care

The electronic questionnaire is an appropriate way to monitor patients early in therapy

Strongly disagree	Disagree	Agree	Strongly agree

The electronic questionnaire helped identify patients who required intervention earlier than one month refill call

Strongly disagree	Disagree	Agree	Strongly agree

Patient care is improved by using the early monitoring questionnaire

Strongly agree	Disagree	Agree	Strongly agree

Do you think there is an ongoing need for early monitoring using the EHR assessment?

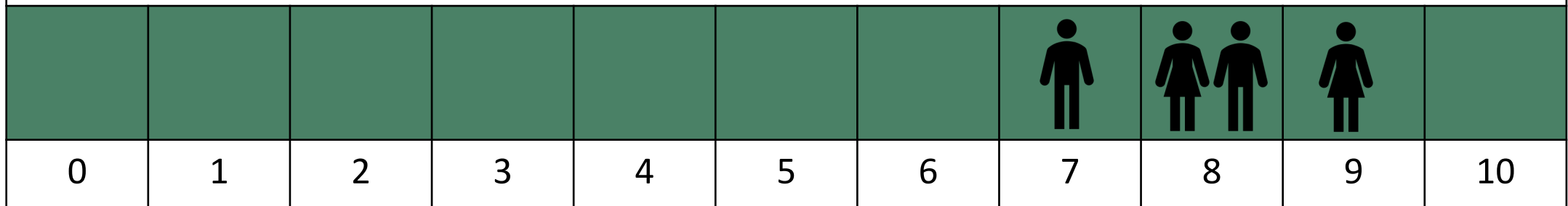
Not at all	Somewhat	Very much

Results: Implementation



Satisfaction

Satisfaction of the early treatment monitoring electronic questionnaire assessment on a scale of 0-10 (0 = strongly dissatisfied and 10 = strongly satisfied)

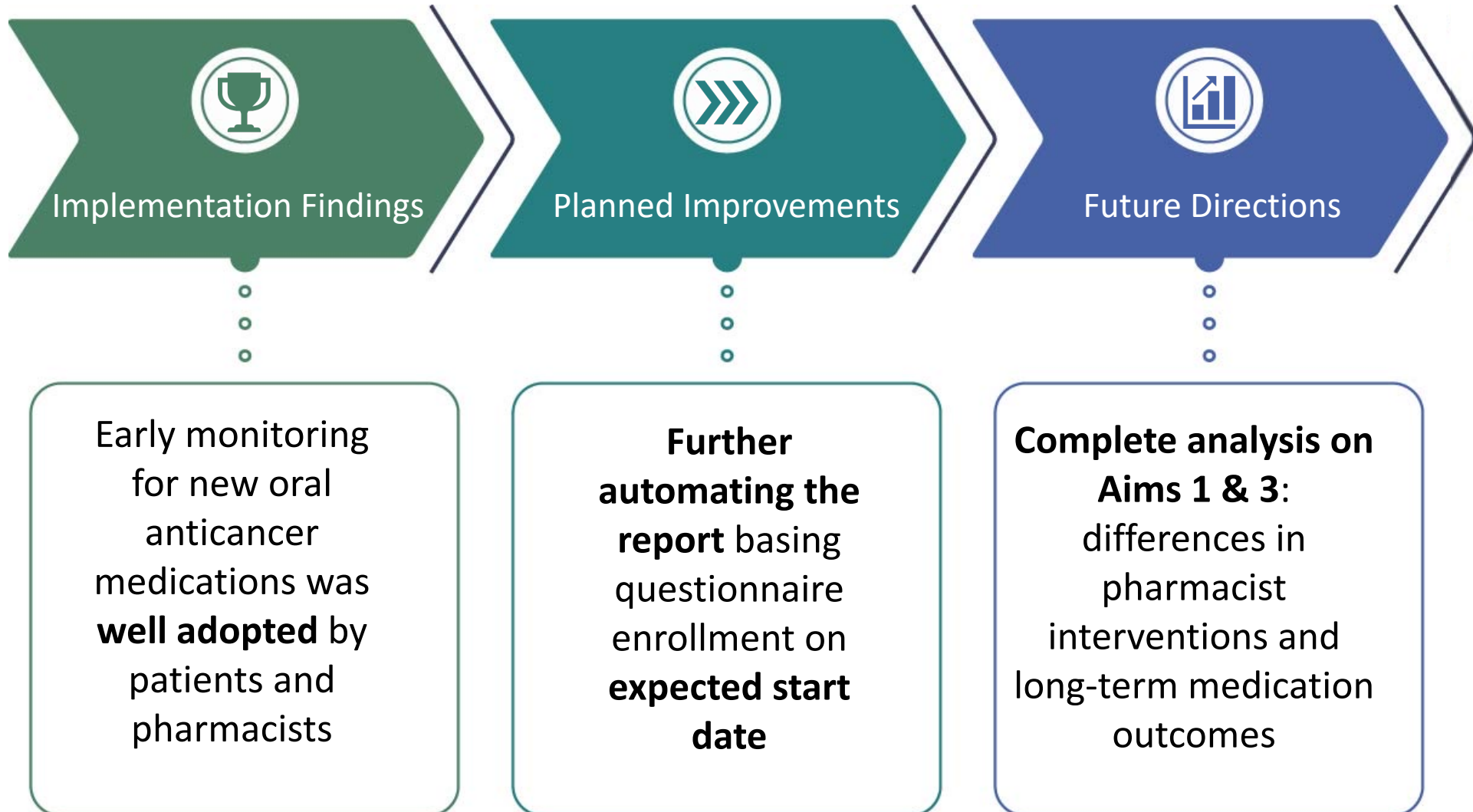


Results: Implementation and Maintenance



Topic domains	Response themes
Anything that made process easier	<ul style="list-style-type: none">• Patients' knowledge of patient portal and how to use it• Fast responses• MHAV easier to use than phone calls
Biggest challenges with implementation	<ul style="list-style-type: none">• Report was not as automatic as team would've liked
Changes to the process	<ul style="list-style-type: none">• Pinpoint exact start date• Make process more automated
Change in oncology practice	<ul style="list-style-type: none">• Can send this to all patients moving forward• Increase patient satisfaction

Conclusions and Future Directions



Acknowledgement

- Thank you ASHP's Optimizing Technology Solutions Innovation Grant for funding this outcomes project

Presentation Objective and Self Assessment Question

Which of the following is NOT an element of the RE-AIM framework?

- a) Reach
- b) Application
- c) Adoption
- d) Implementation
- e) Maintenance

Questions?

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