

# Connected Care: Pharmacist Utilization of Remote Monitoring to Support Clinical Services

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## Disclosure Statement

Jen Sabatino has no relevant financial relationship(s) with ineligible companies to disclose.

*and*

None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.



# Learning Objectives

At the completion of this activity, the participant will be able to:

- identify the differences between remote physiologic monitoring and remote therapeutic monitoring services; and
- discuss the principles of billing for remote physiologic monitoring services.





# Digital Health Transformation





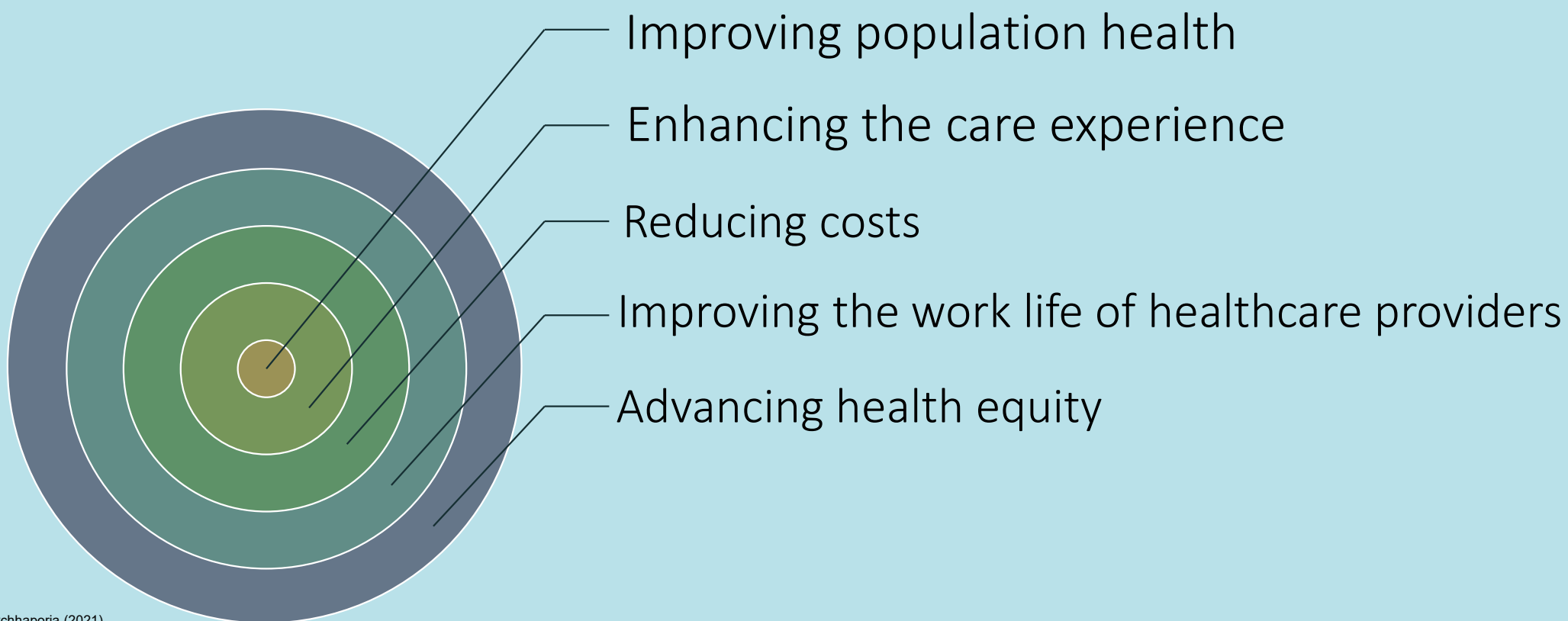
COVID-19



Tech Advancement



# Quintuple Aim Alignment



# Audience Poll

How would you rate your current level of knowledge about Remote Patient Monitoring?

- A. Expert- I regularly use in my practice
- B. Intermediate- I have some experience in my practice
- C. Beginner- I know the basics but have not implemented
- D. Unfamiliar- I have little to no knowledge of this topic

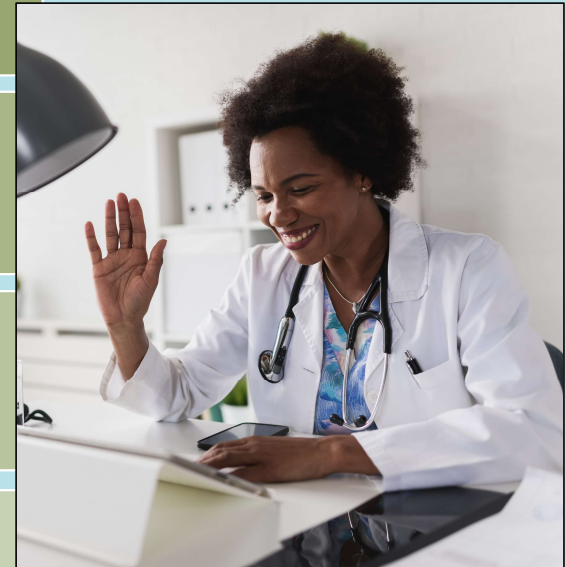
# Digital Health Trends

Increased adoption of virtual care/telehealth

New billing codes for virtual care

Healthcare applications for AI

Remote patient monitoring advancements





# Driving Digital Health Growth

Increasing older adult population

Rise in chronic condition prevalence

Patient desire for increased care access

Need for cost-effective care alternatives



**ACCESSIBLE**



**COST  
EFFECTIVE**


# Our Own Population



**9th least  
healthy  
state**

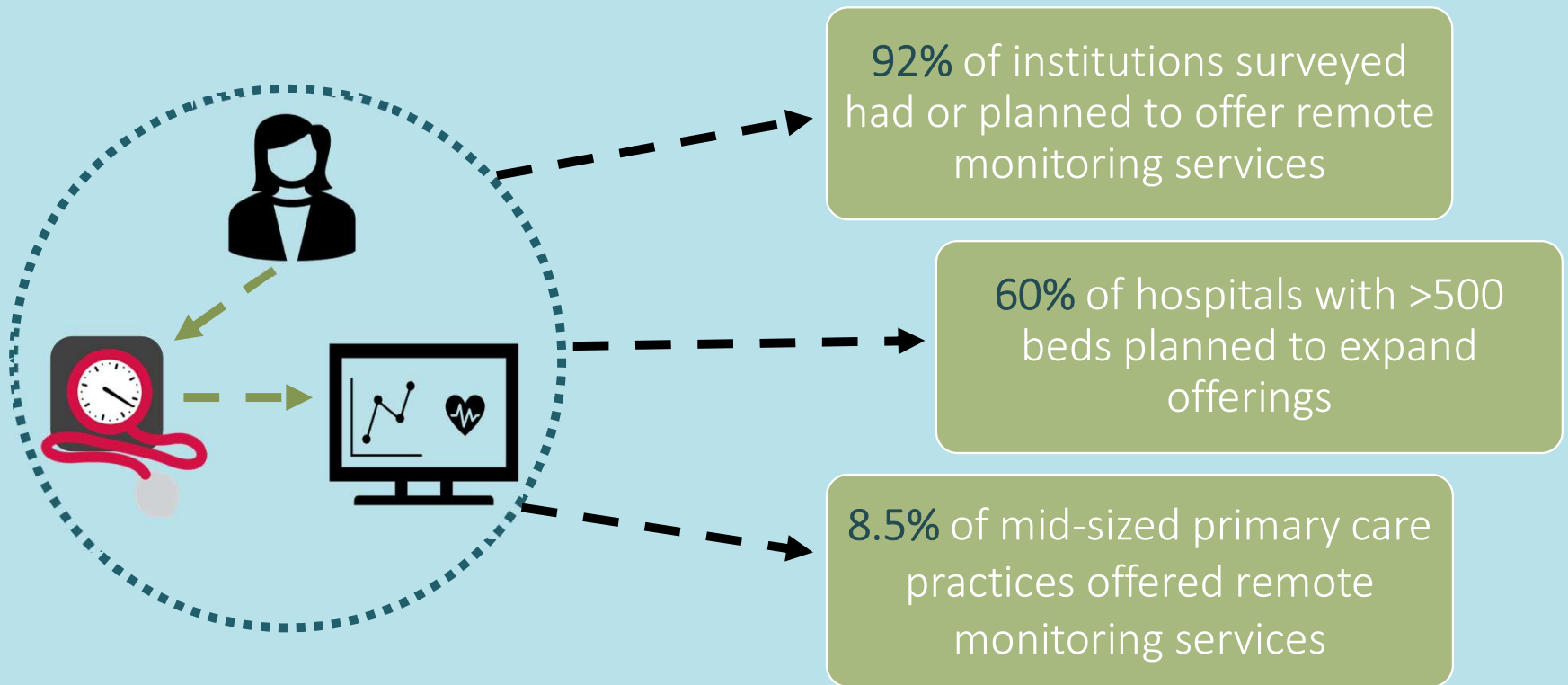


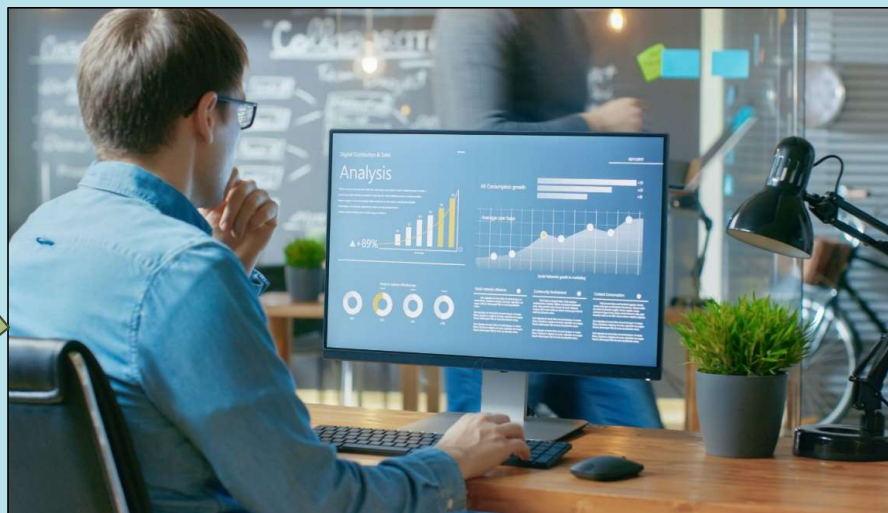
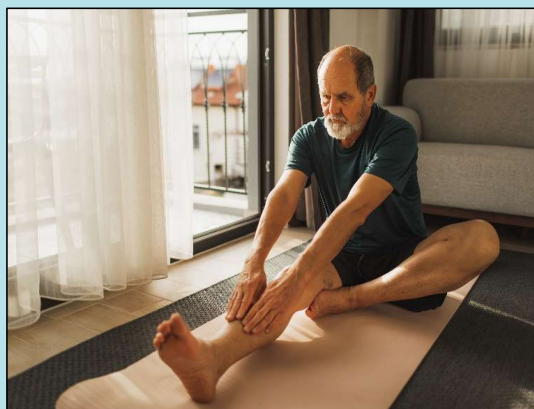
**> 20  
counties  
without a  
hospital**



**3 million  
Columbus  
residents  
by 2050**

# Remote Monitoring Trends





# Remote Patient Monitoring



# Remote Physiologic Monitoring (RPM)

Captures and records patient physiologic data outside of typical face-to-face visit

Electronically transmits data to healthcare provider

Provides more in-depth insight into daily data from patients

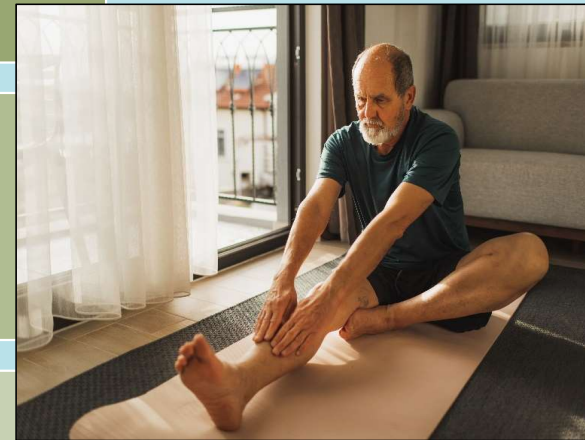


# Remote Therapeutic Monitoring (RTM)

Focus on patient's movement and muscle use

Data captured outside of normal face-to-face environment

May allow for monitoring of patient response to therapy



## RPM

Physiologic data

Transmits automatically

Expansive options for device integration

## RTM

Therapeutic data

Availability for patient to self-report

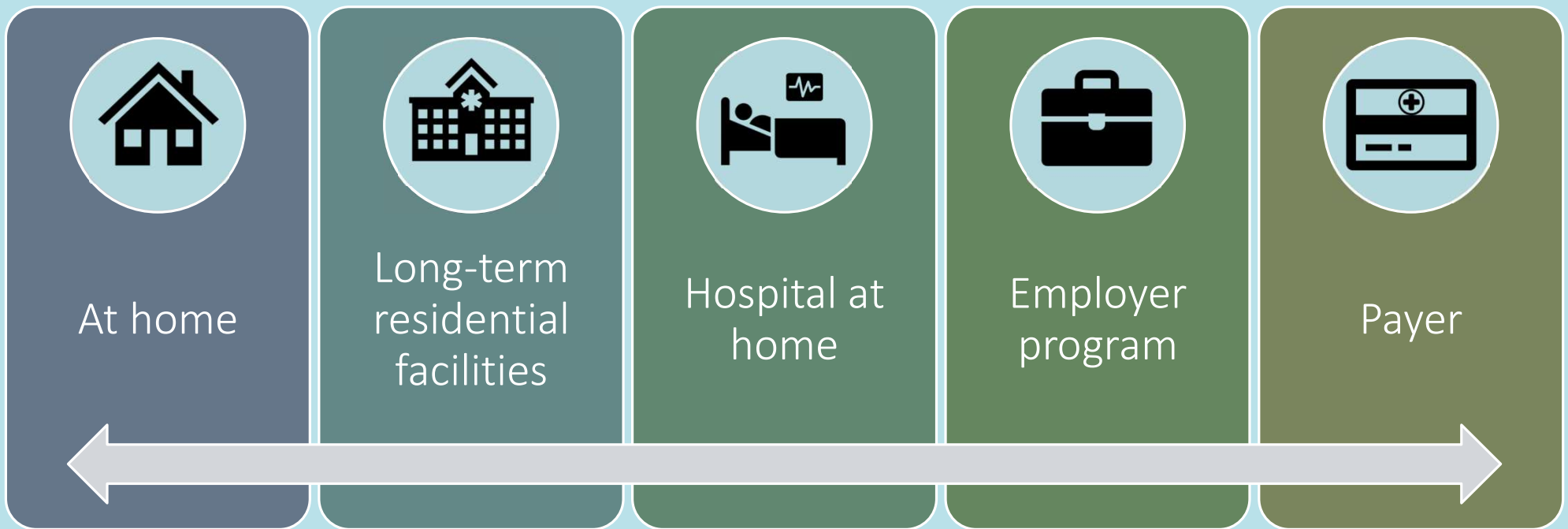
Broader healthcare provider applicability

FDA medical device required

Billing requires 16 days of data

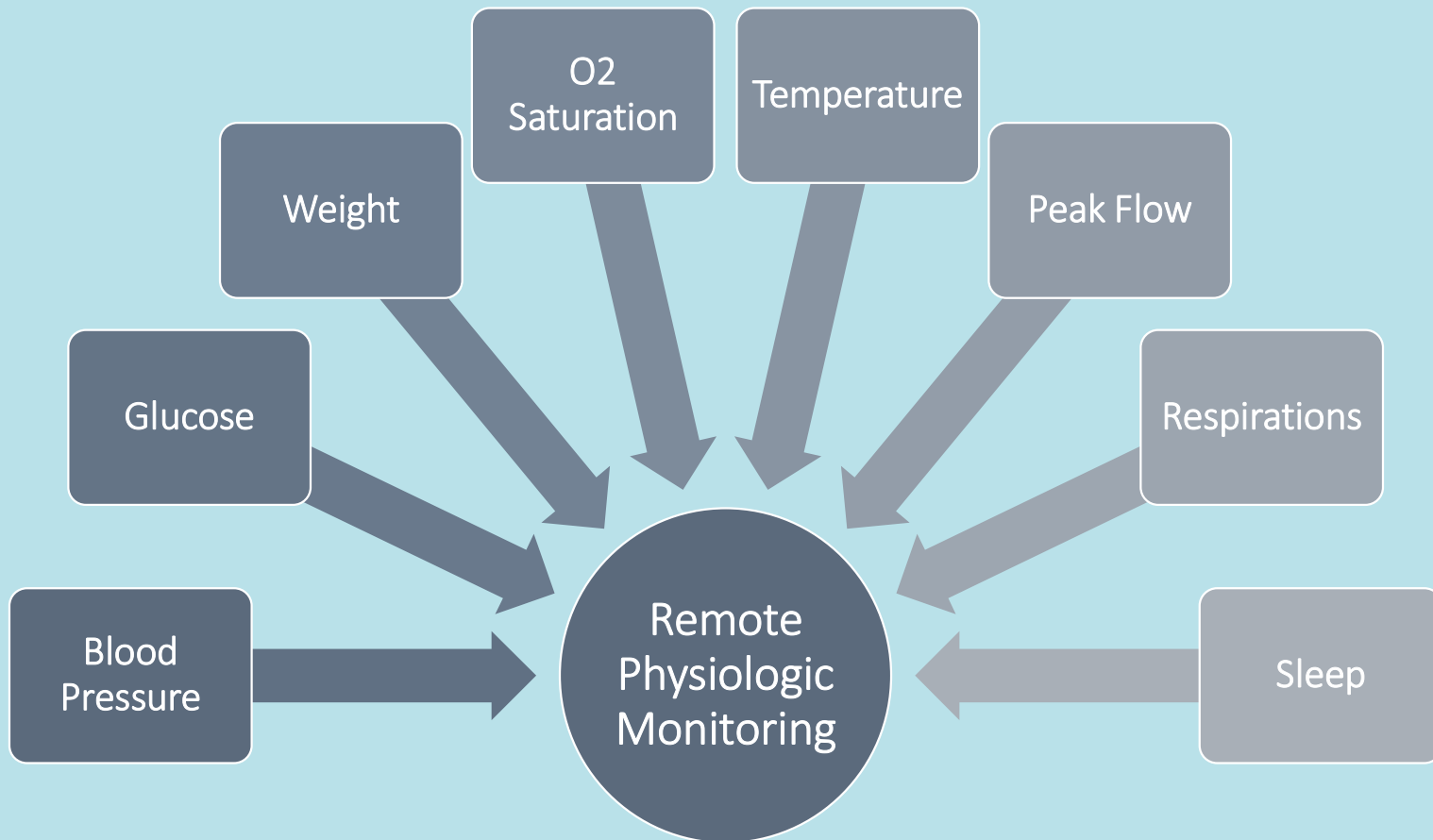
One charge submission per patient

# Spectrum of Care Settings





# RPM Applicability



# Benefits of RPM

Provide insight into clinical status for intervention

Enhance the provider-patient relationship

Improve patient experience/satisfaction

Facilitate ongoing connection with patients

Improve patient education for self-management

Improve quality performance and value-based payment models

Generate revenue for practice



# RPM Billing



# RPM Billing Requirements



# PRM Billing Requirements

Medically reasonable and necessary

Meets FDA definition of “medical device”

Patient must consent

One practitioner per 30 days



# RPh Services Eligible for RPM Billing

CPT Code	Description	Specifics*		Estimated Reimbursement Rate**
99453	Initial set up and patient training on use of equipment	Billed once per episode of care	Requires 16 days of data transmission	\$19
99454	Supply of device, collection, transmission, and report/summary services to the clinician	Billed once per 30 days		\$50
99457	Remote physiologic monitoring treatment management services by clinical staff/physician/ other qualified health care professional in a calendar month	First 20 minutes	Billed once per calendar month	\$48
99458		Each additional 20 minutes	Can be billed multiple times in calendar month Must include interactive communication with the patient/caregiver within the month	\$39

\*Subject to interpretation – consult your Compliance representative

\*\*CY2023

# RPh Services Eligible for CGM Billing

CPT Code	Description	Specifics*		Estimated Reimbursement Rate**
95249 (Patient owned)	Continuous glucose monitor sensor placement, hookup, calibration of monitor, patient training, and printout of recording	Billed once per device	Requires 72 hours of data transmission	\$65
95250 (clinic owned)	Ambulatory continuous glucose monitoring of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; sensor placement, hookup, calibration of monitor, patient training, removal of sensor, and printout of recording	Billed once per 30 days	Must be in person Direct supervision	\$147

\*Subject to interpretation – consult your Compliance representative

\*\*CY2023

# RPM Process for Disease Management

- Traditional management



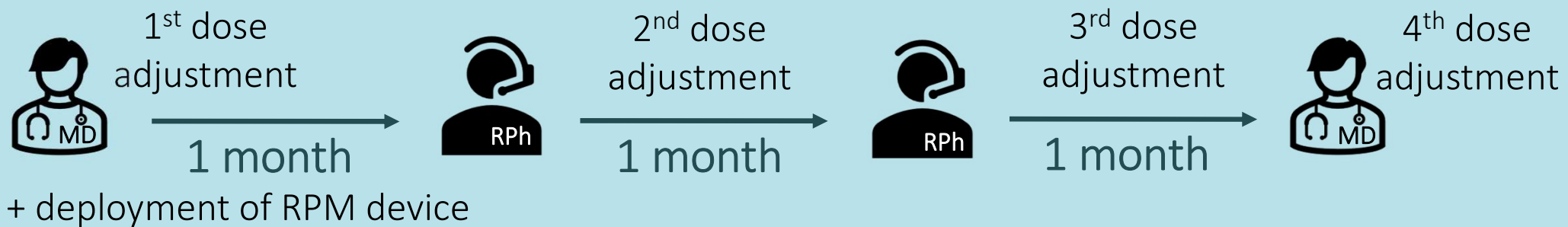


# RPM Process for Disease Management

- Traditional management



- Management with between-visit outreach utilizing RPM





# Remote Patient Monitoring in Action



# Mrs. Smith has Diabetes

- 44 y/o woman presenting for diabetes management
- PMH: DMII, HL, obesity, depression
- Diabetes medication regimen:
  - insulin glargine 36 units daily
  - insulin lispro 9 units TID AC
  - metformin XR 500 mg 2 tablets BID
- Past medications for diabetes:
  - dulaglutide 1.5 mg weekly discontinued 8/2023 due to adverse GI effects

	Latest Ref Rng & Units	7/30/2024	2/22/2024	11/17/2023
POCT HEMOGLOBIN A1C	4.7 – 5.6 %	<b>9.4 !</b>	<b>9.1 !</b>	<b>9.6 !</b>



# Continuous Glucose Monitors

Covered with criteria varying by plan

Sensors can transmit to clinic platform

Control measured across several metrics

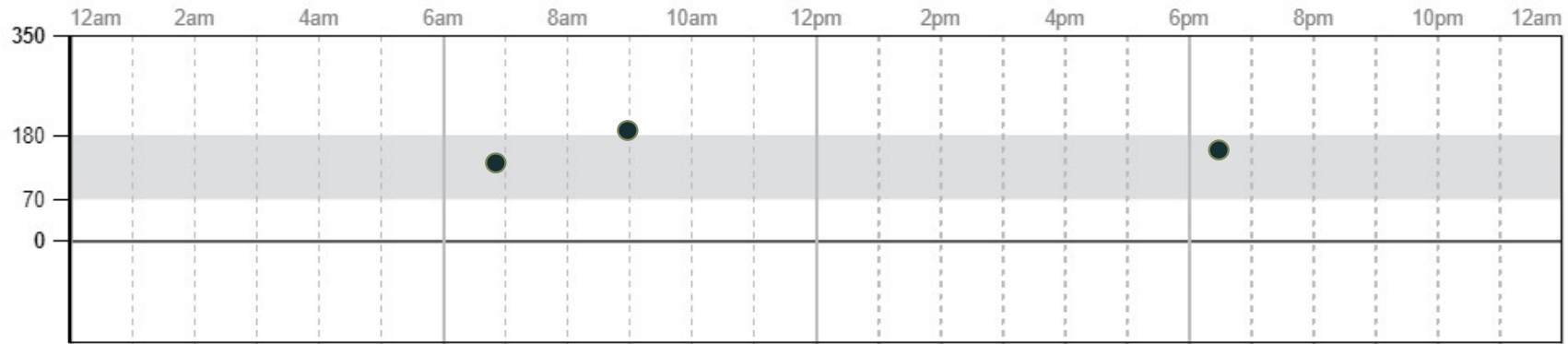




# Data Before CGM

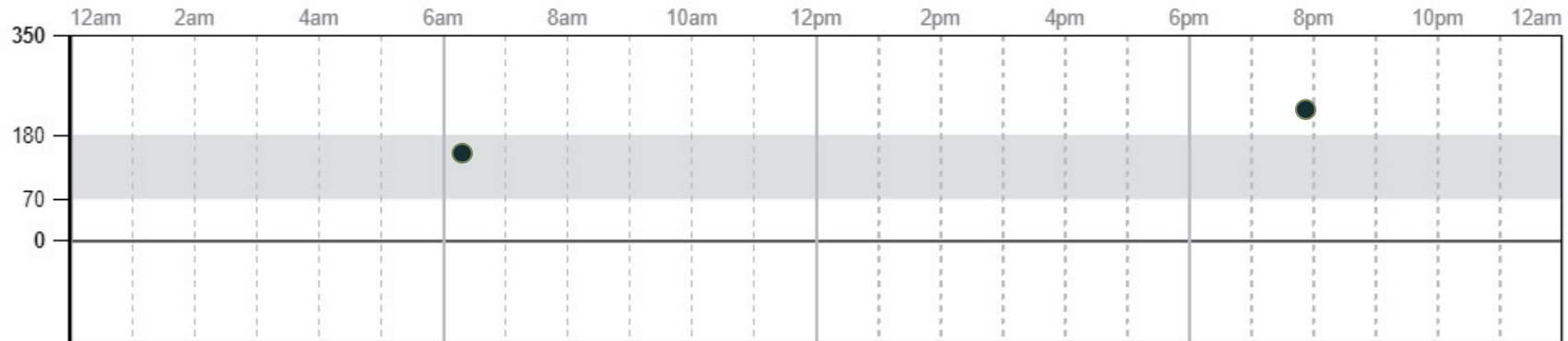
WED Jul 24

Glucose mg/dL  
Max  
Min



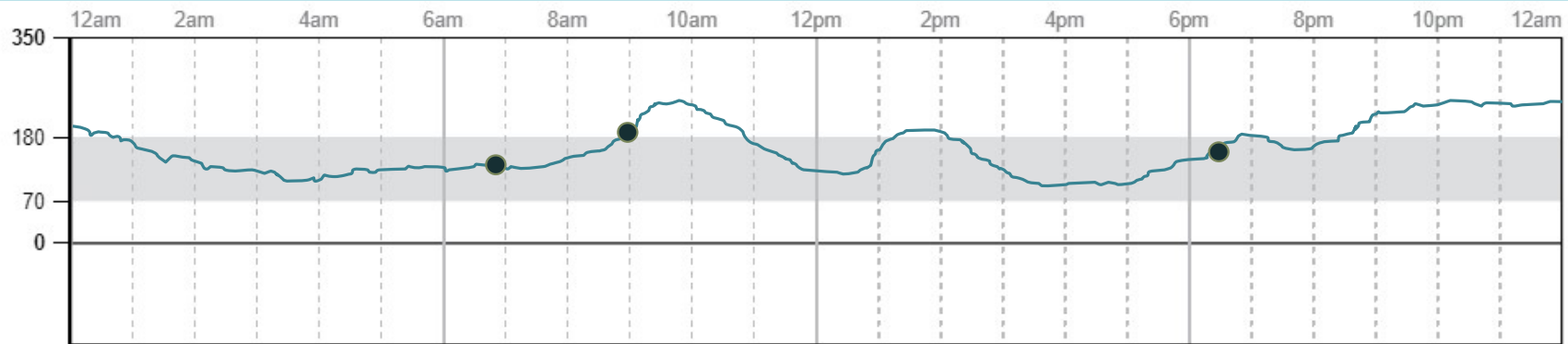
THU Jul 25

Glucose mg/dL  
Max  
Min

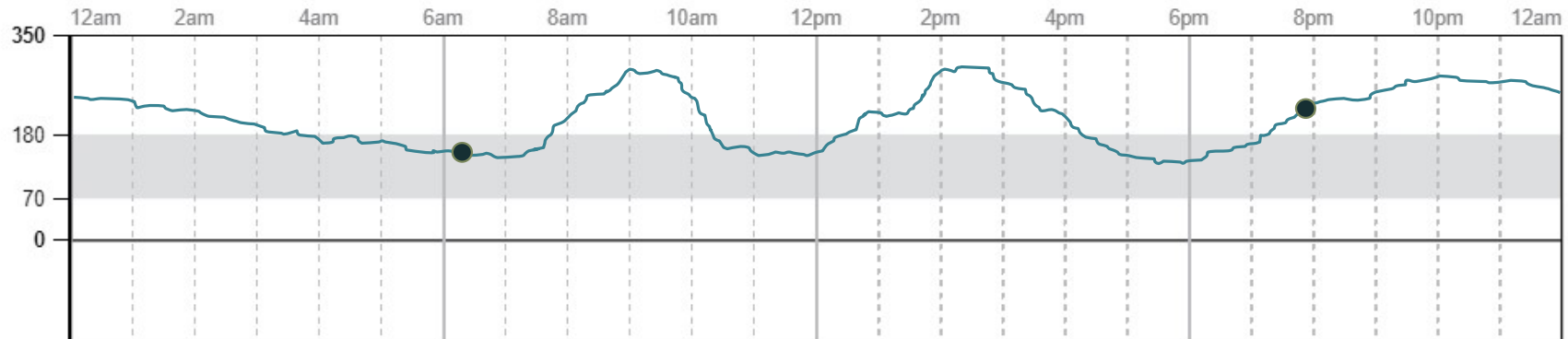


# CGM Data

WED Jul 24



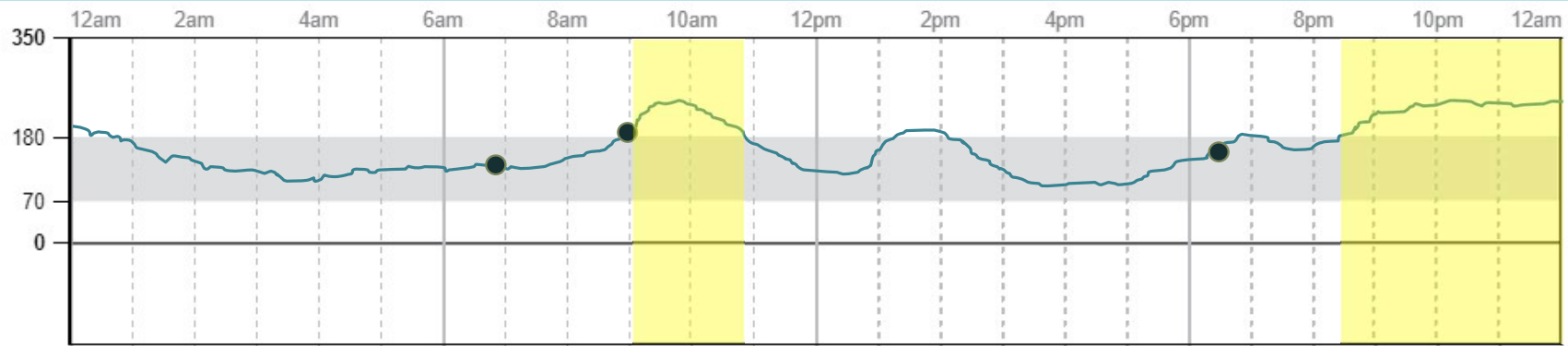
THU Jul 25



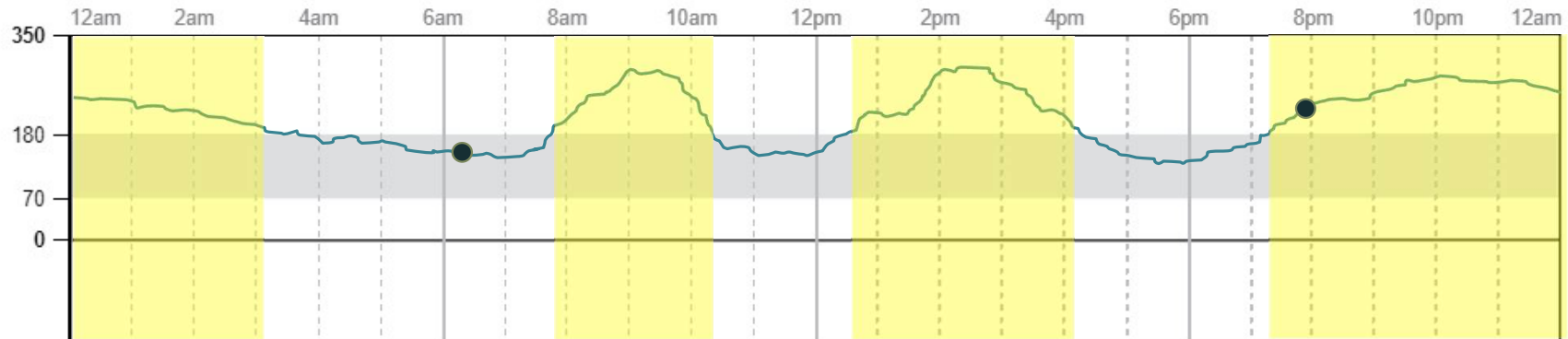


# CGM Data

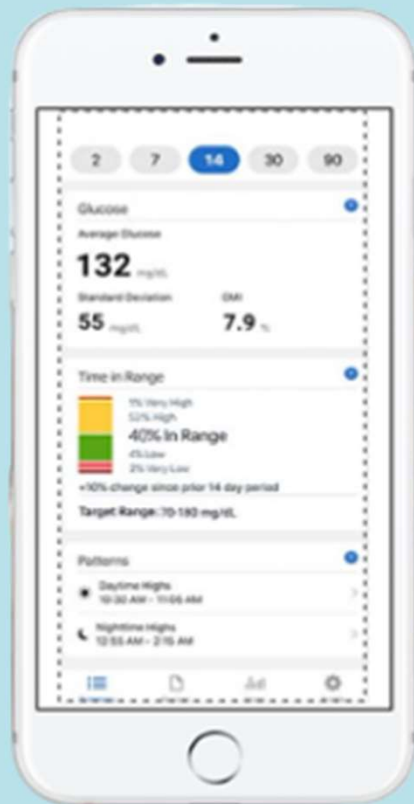
WED Jul 24



THU Jul 25



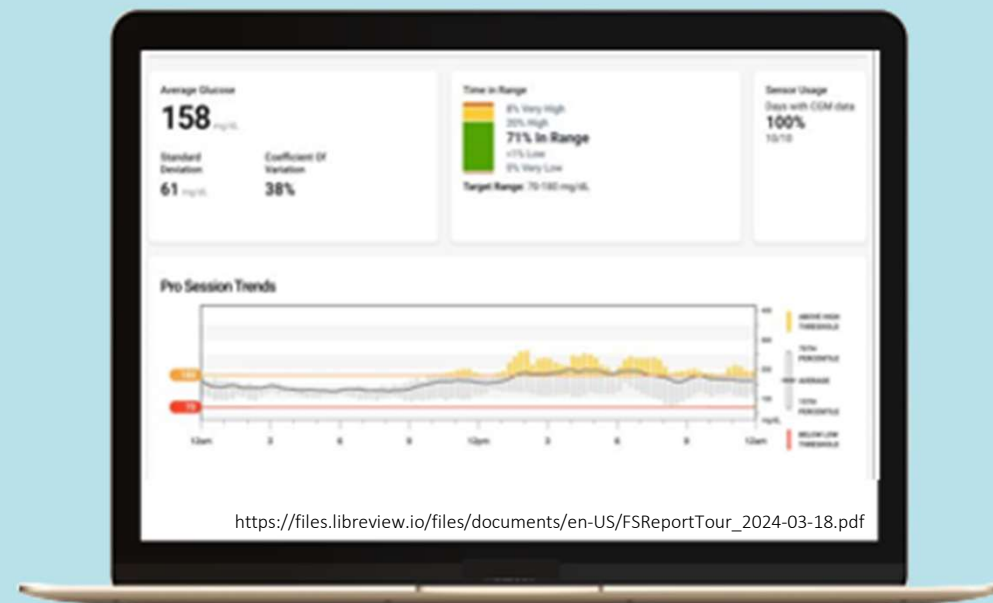
# Diabetes: Mrs. Smith



- Increased motivation with respect to lifestyle efforts
- Alert received when trending low after exercise

# Diabetes: Mrs. Smith

- Insights uncovered post prandial elevations and post-dinner snacking
- Diet improved through motivational interviewing
- With diet change, tolerated re-trial of GLP-1 receptor agonist



	Latest Ref Rng & Units	10/10/2024	7/30/2024	2/22/2024
POCT HEMOGLOBIN A1C	4.7 – 5.6 %	7.8 !	9.4 !	9.1 !

# Audience Poll

Who is working in community and has dispensed a continuous glucose monitor (CGM)?

# Audience Poll

Who among you have assisted the patient with the set up and training on use of the CGM?

# Audience Poll

Who among you have connected the patient's data to a practice portal for review in management of their diabetes?

# Audience Poll

Who is billing remote monitoring codes for these services?

# Billing for Mrs. Smith's RPM services

First Encounter	Each Month During the Episode of Care		
<u>Device training</u>  CGM sensor placement, training on use? 72 hours of data?	<u>Transmission</u>  16 days of data within 30 days?	<u>Initial RPM time</u>  20 minutes of care management and interaction	<u>Ongoing RPM time</u>  Each additional 20 minutes of care management and interaction
95249	N/A (patient owns)	99457	99458 (+ 99458 + ...)



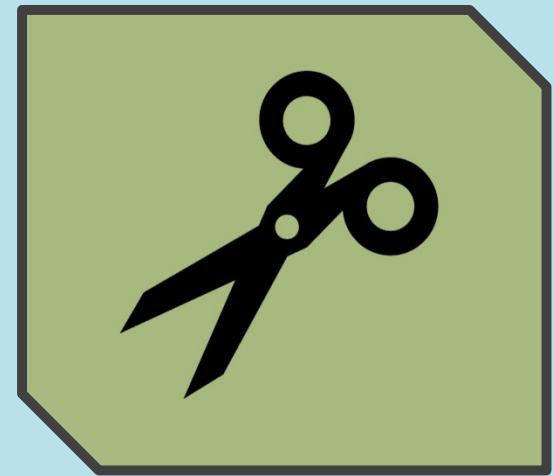
# Hypertension Patients



**Patient T**



**Patient W**



**Patient S**

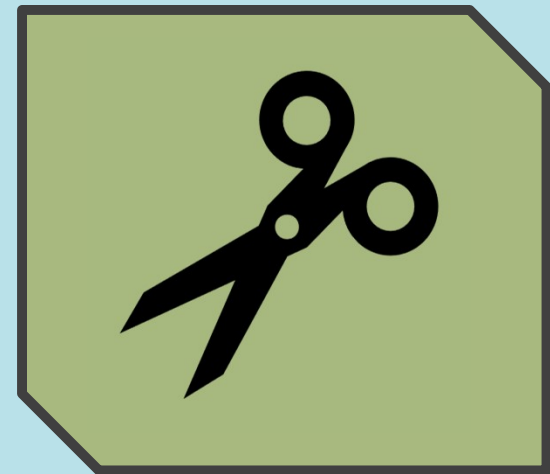
# Hypertension Patients



**Patient T**



**Patient W**



**Patient S**

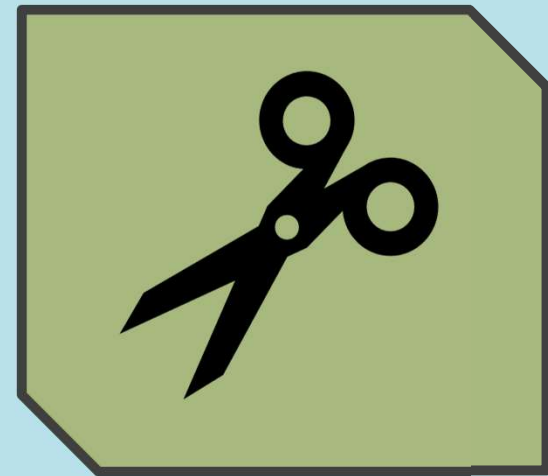
# Hypertension Patients



**Patient T**



**Patient W**



**Patient S**

# Hypertension Patients



**Patient T**

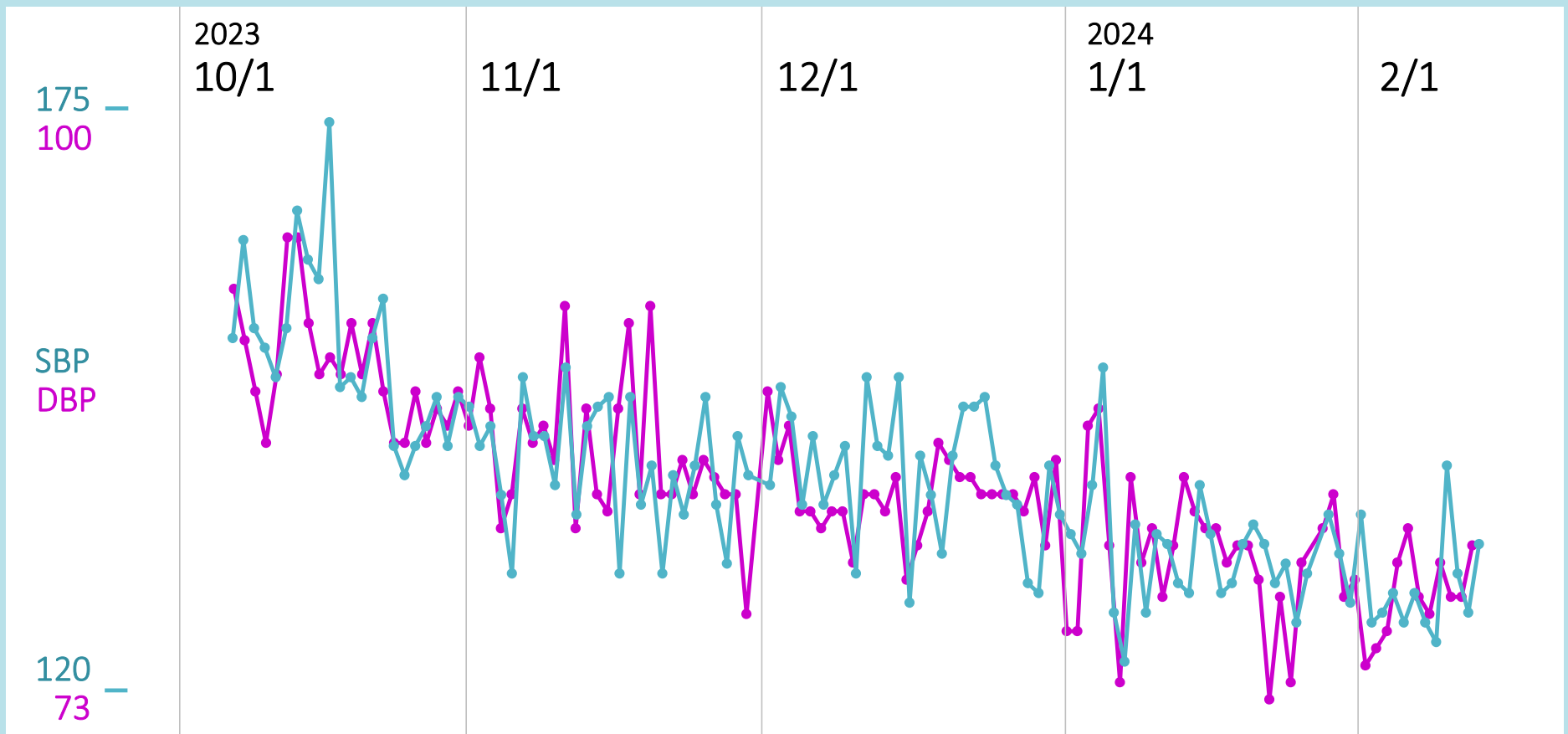


**Patient W**

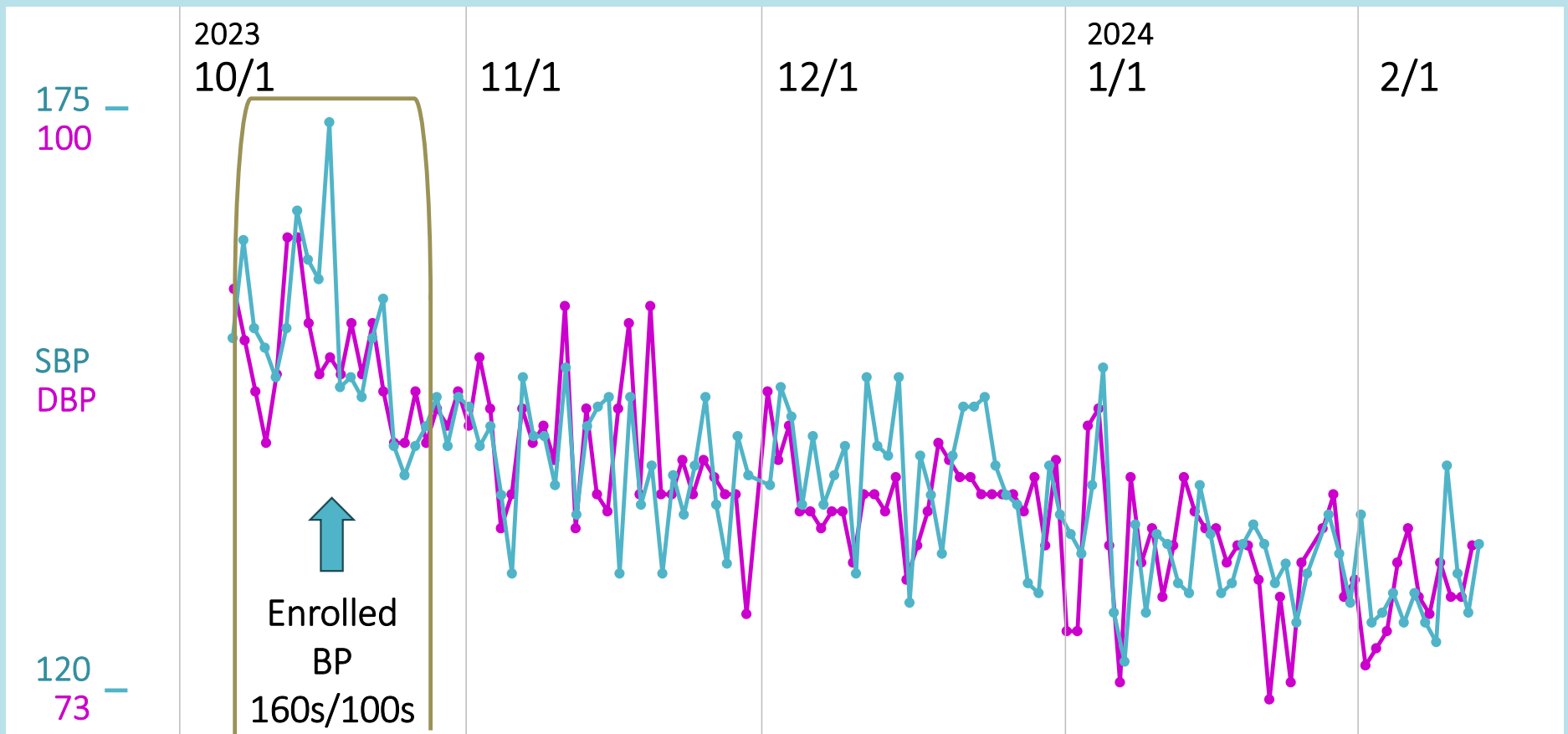


**Patient S**

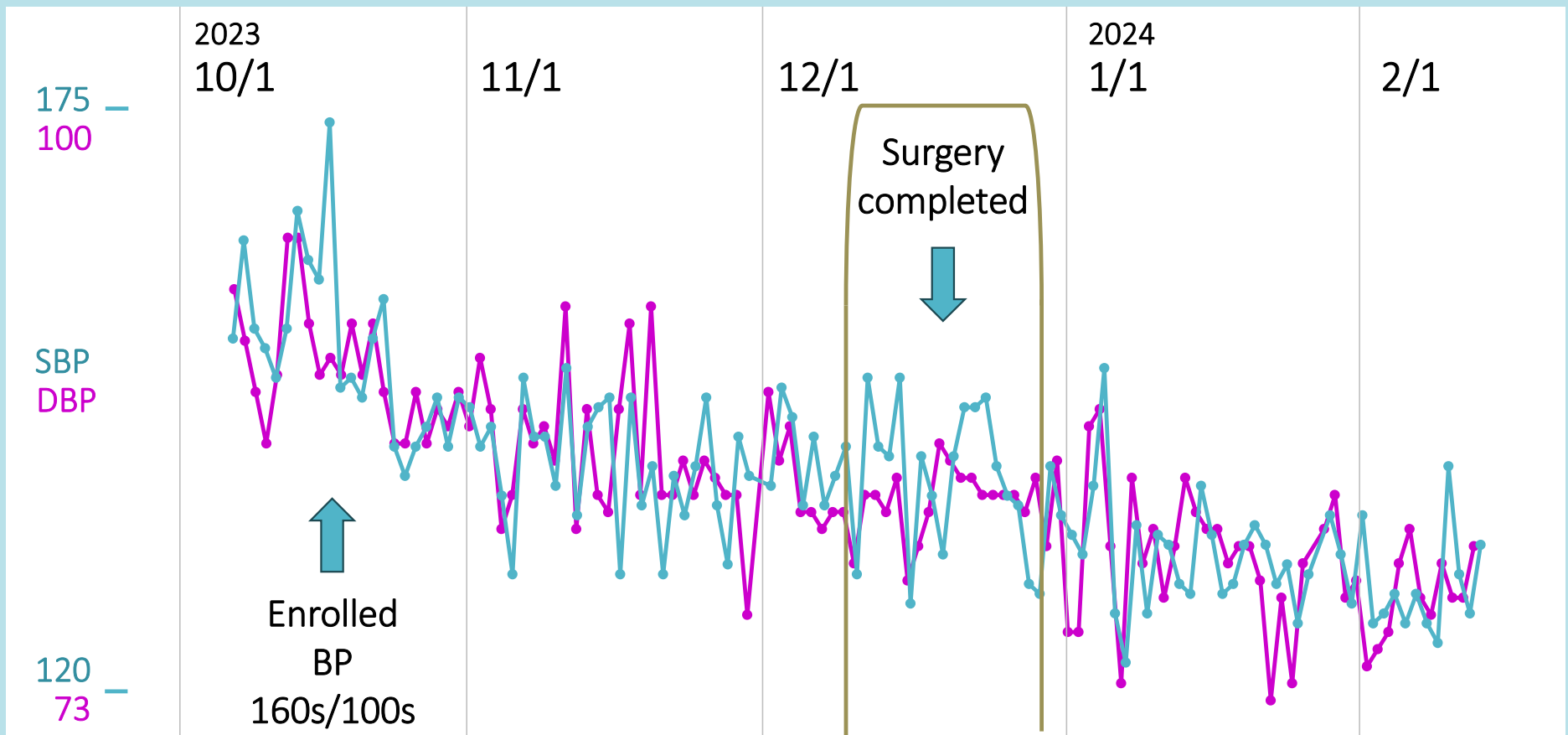
# Hypertension Patients: Patient S



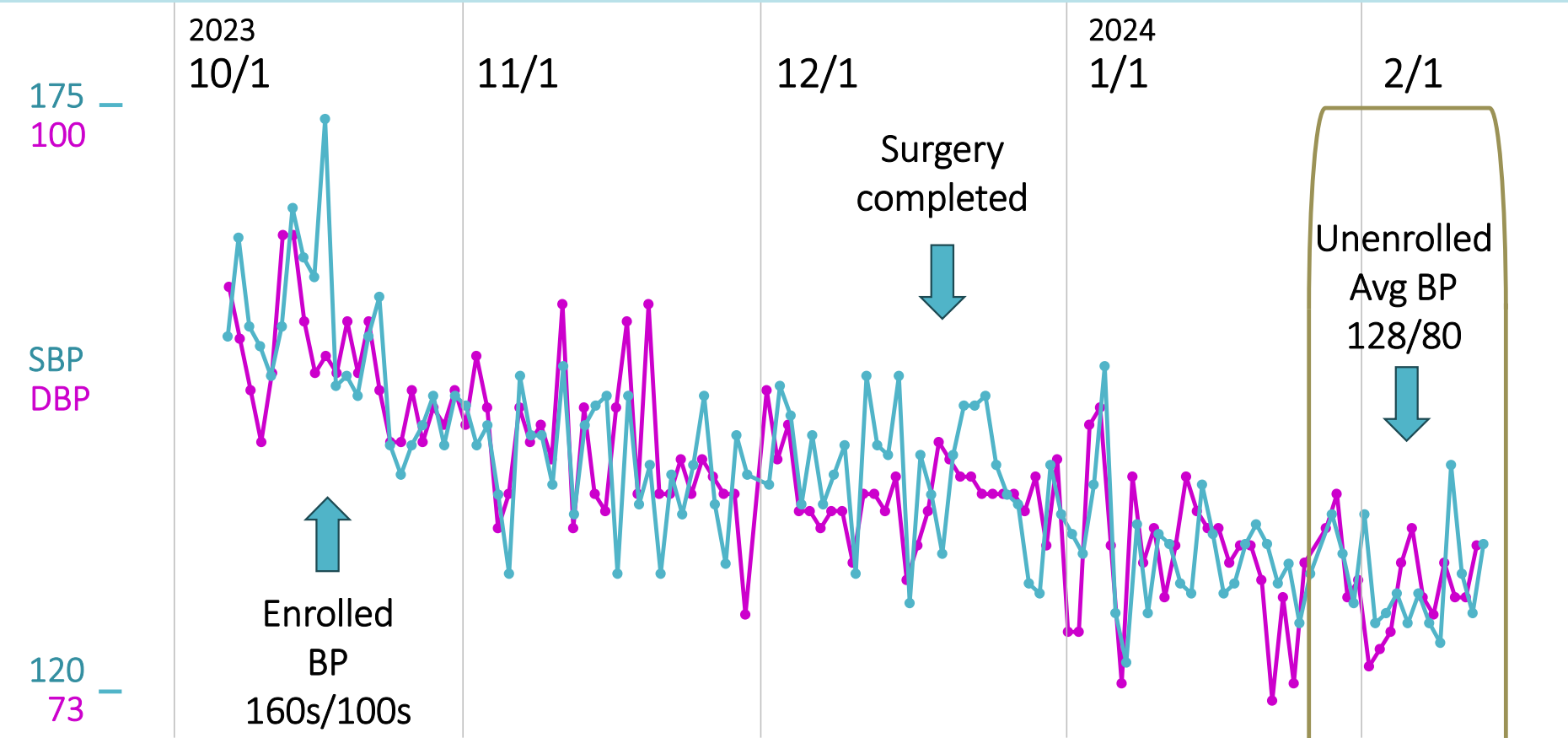
# Hypertension Patients: Patient S



# Hypertension Patients: Patient S

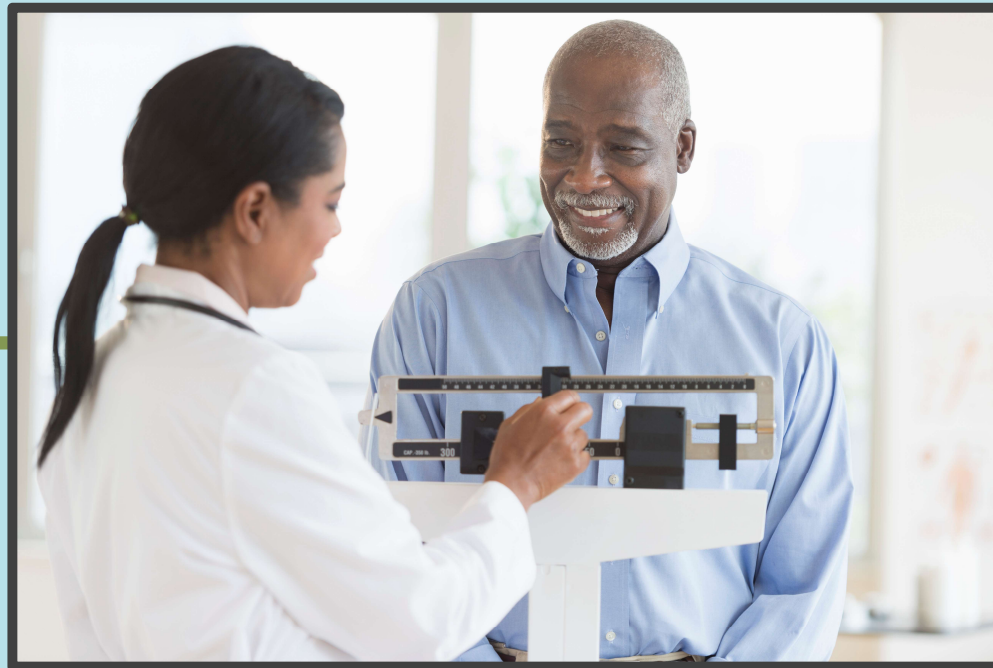


# Hypertension Patients: Patient S

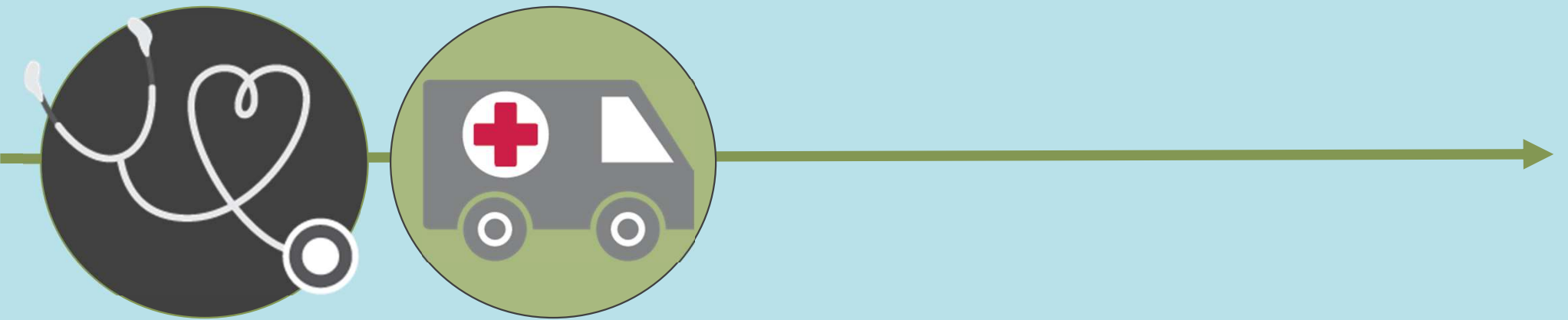




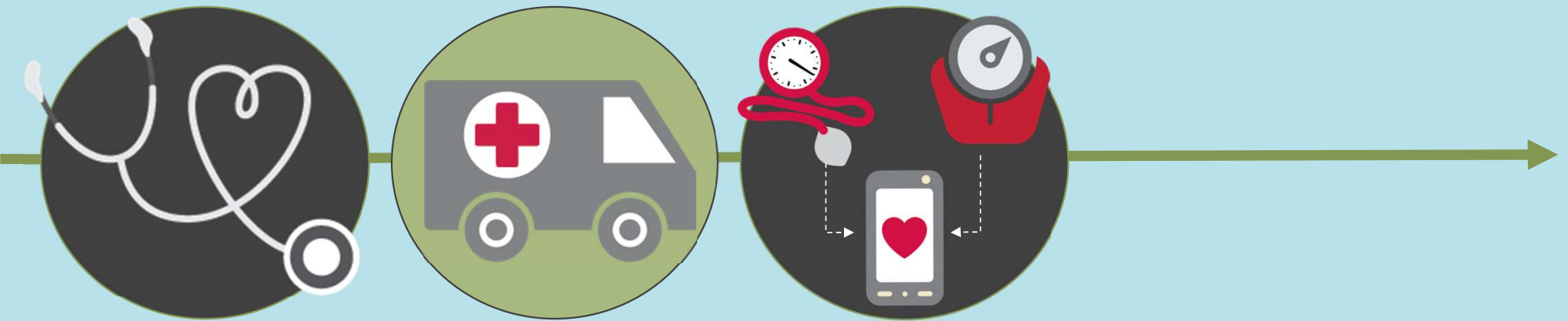
# A Patient with Heart Failure: William



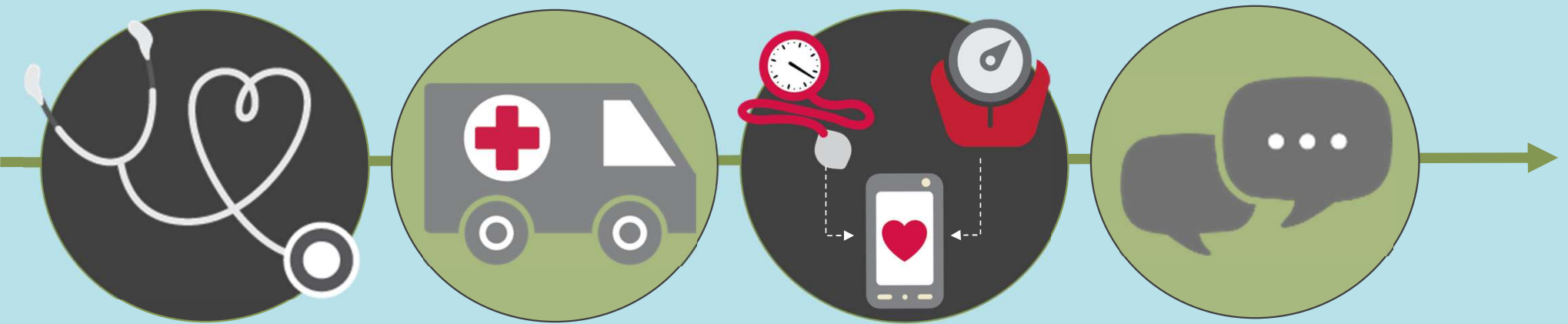
# A Patient with Heart Failure: William



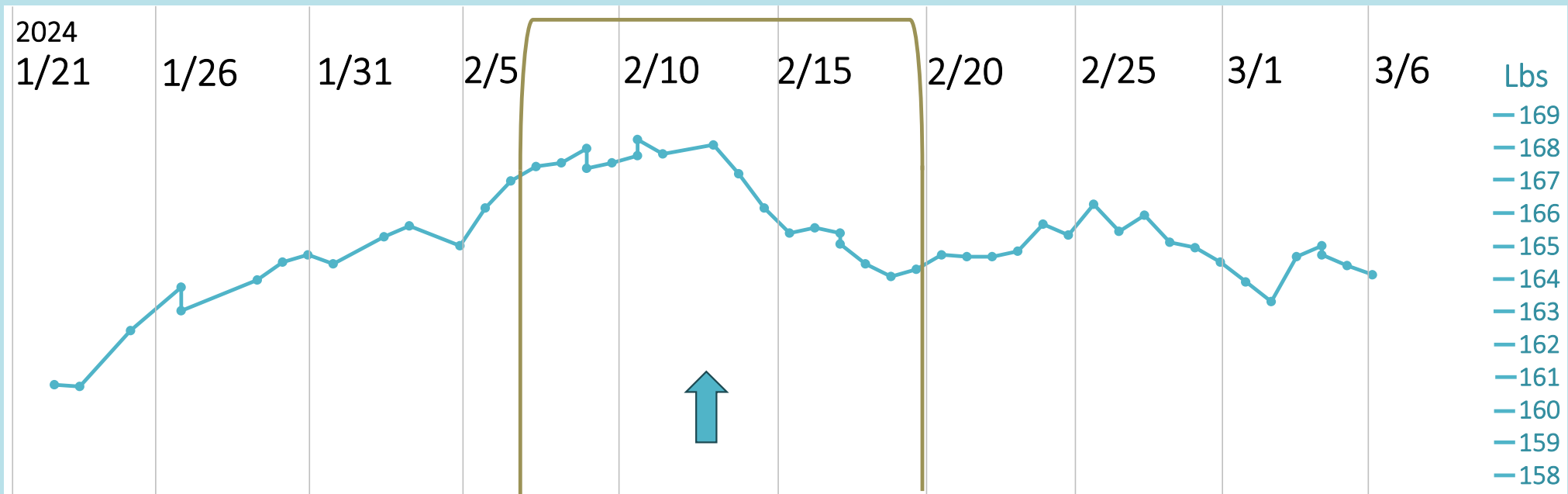
# A Patient with Heart Failure: William



# A Patient with Heart Failure: William



# Cellular Enabled Weight Scale



Weight gain  
Furosemide increased  
and SGLT-2 added

# Billing for William's RPM services

First Encounter	Each Month During the Episode of Care		
<u>Device training</u>  Training on use?  16 days of data?	<u>Transmission</u>  16 days of data within 30 days?	<u>Initial RPM time</u>  20 minutes of care management and interaction	<u>Ongoing RPM time</u>  Each additional 20 minutes of care management and interaction
99453	99454	99457	99458 (+ 99458 + ...)



# Remote monitoring of hypertension within OSU Primary Care clinics



# Hypertension RPM Workflow

- Clinical criteria for Collaborative Practice Agreement (CPA) met
- Referral to pharmacy for HTN placed



Patient  
identified



# Hypertension RPM Workflow

- Clinical criteria for Collaborative Practice Agreement (CPA) met
- Referral to pharmacy for HTN placed

Patient  
identified

Enroll in  
RPM

- Consent to CPA and RPM
- Device deployment and set-up
- Education about self-monitoring and critical values
- Follow up telehealth visit scheduled

# Hypertension RPM Workflow

- Clinical criteria for Collaborative Practice Agreement (CPA) met
- Referral to pharmacy for HTN placed

Patient  
identified

Enroll in  
RPM

- Consent to CPA and RPM
- Device deployment and set-up
- Education about self-monitoring and critical values
- Follow up telehealth visit scheduled

Engage in  
RPM

- Home BP readings taken daily
- Telehealth visits with pharmacist to review transmitted BP readings, medication use, and lifestyle intervention efforts
- Optimization of antihypertensive medications

# Hypertension RPM Workflow

- Clinical criteria for Collaborative Practice Agreement (CPA) met
- Referral to pharmacy for HTN placed

Patient identified

- Consent to CPA and RPM
- Device deployment and set-up
- Education about self-monitoring and critical values
- Follow up telehealth visit scheduled

Enroll in RPM

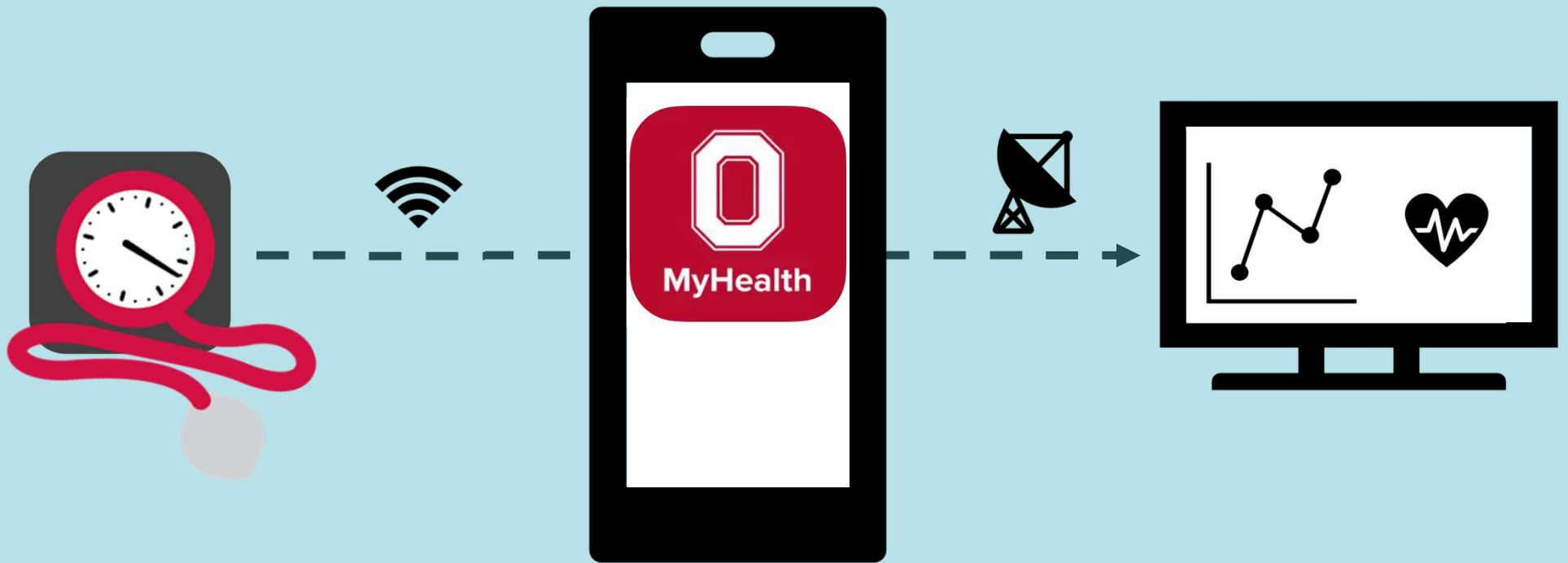
- Hypertension goals achieved  
OR
- Lost to follow up or otherwise ends participation

Unenroll from RPM

- Home BP readings taken daily
- Telehealth visits with pharmacist to review transmitted BP readings, medication use, and lifestyle intervention efforts
- Optimization of antihypertensive medications

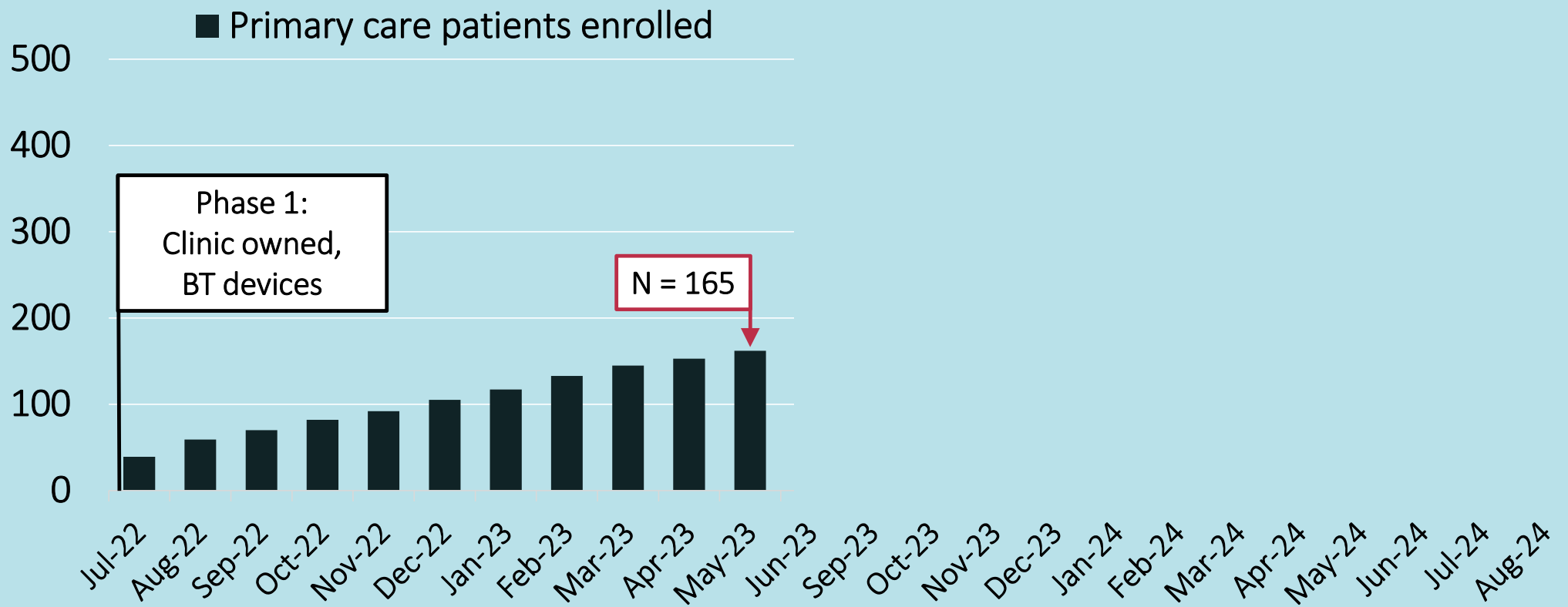
Engage in RPM

- Transmission is terminated
- Monitor may be returned

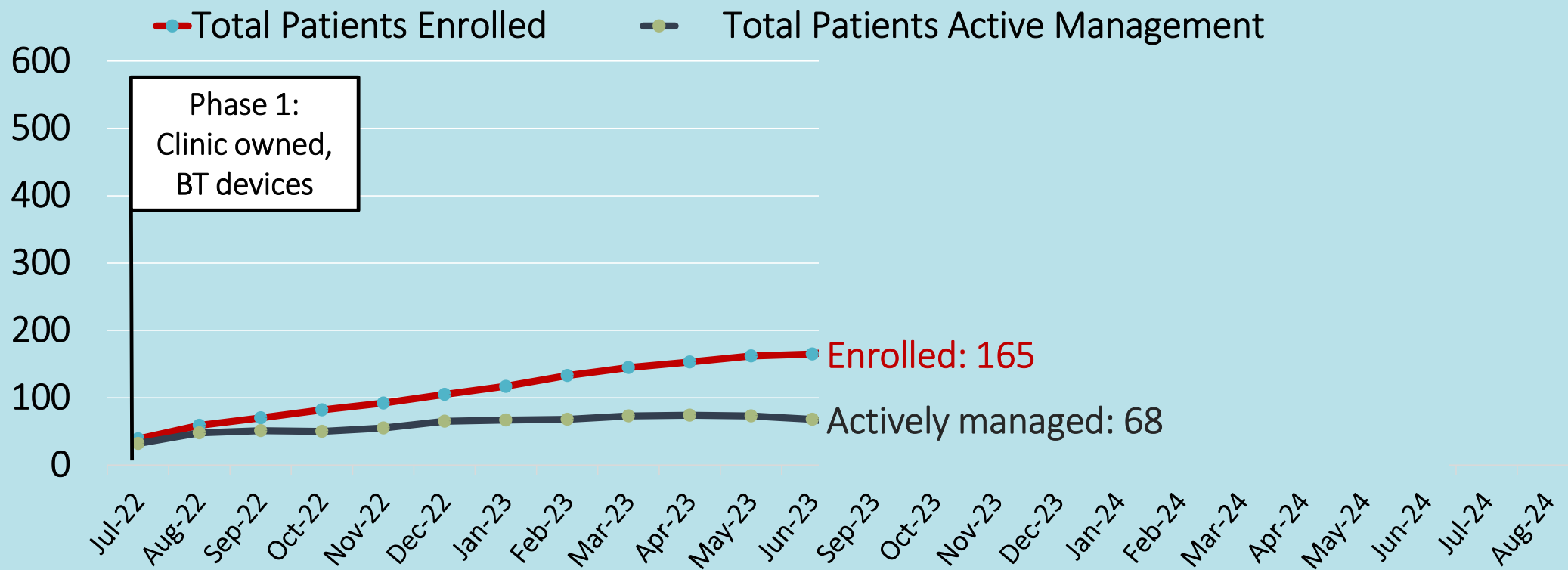


Phase 1: Clinic-owned Bluetooth (BT)-enabled Devices

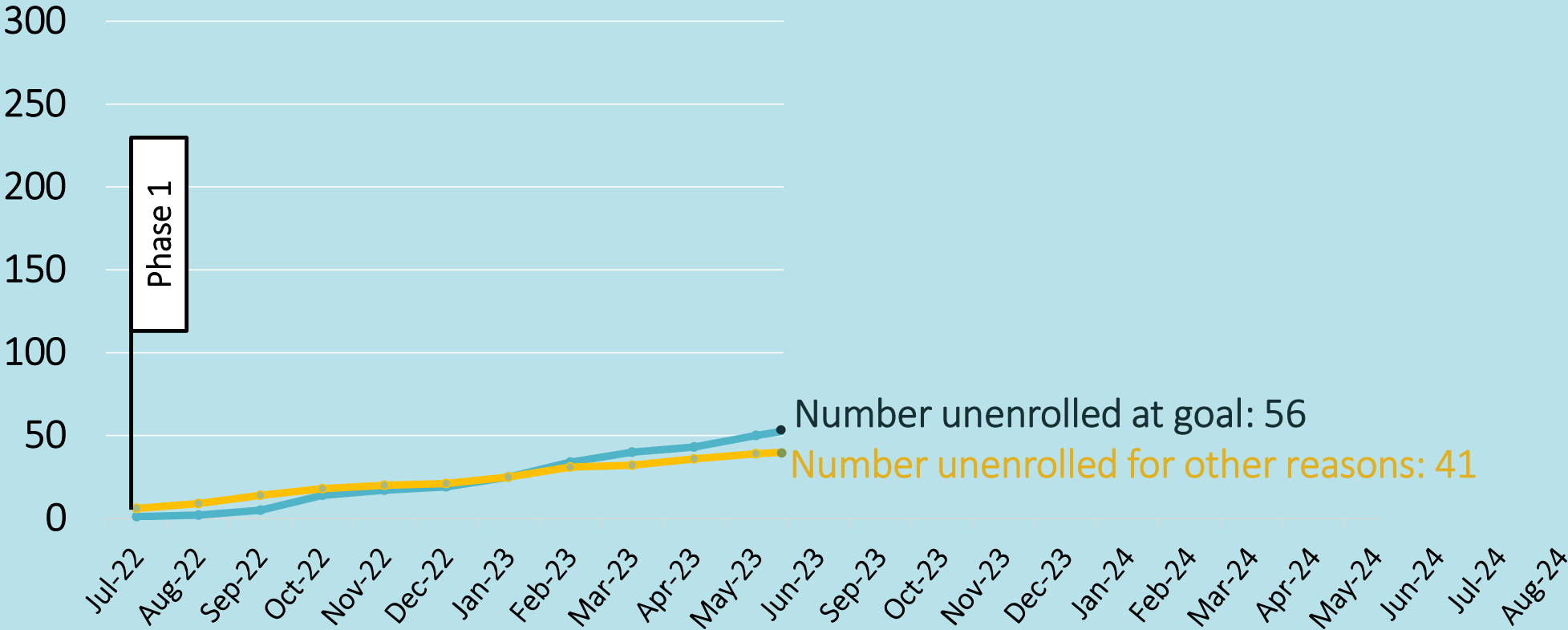
# Phase 1: Growth in Total Enrollment



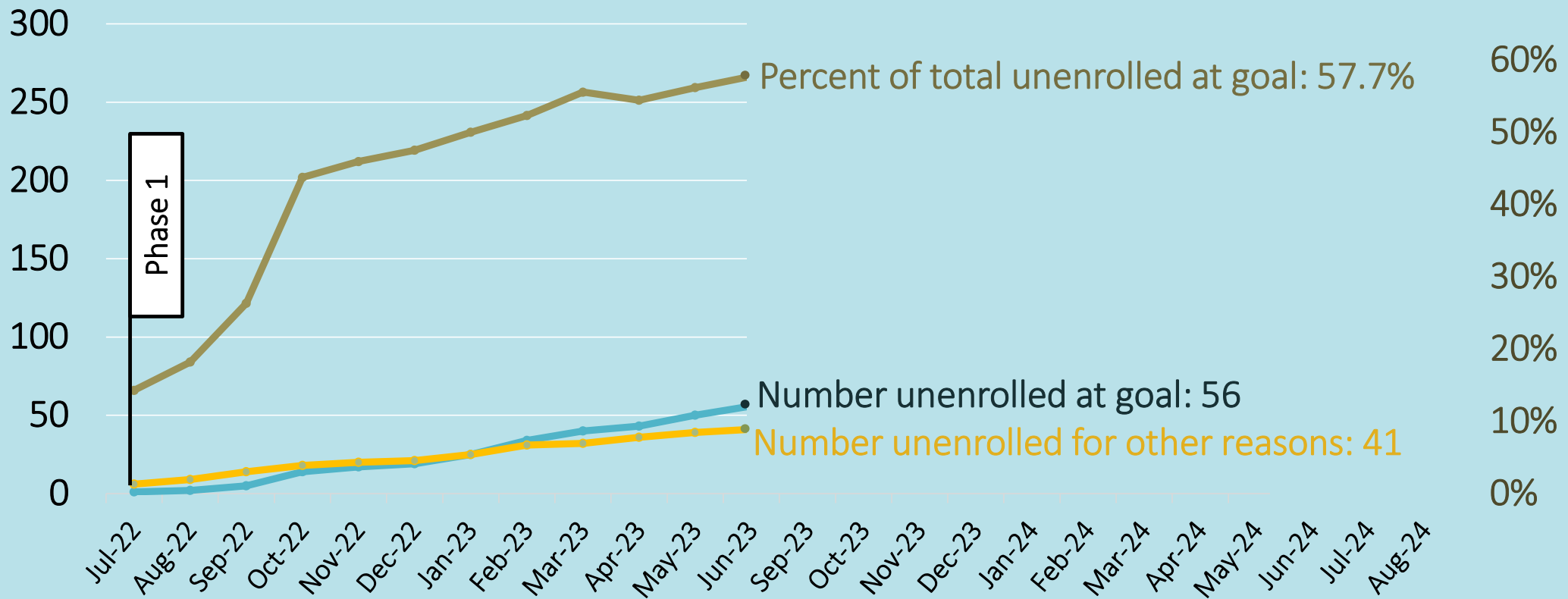
# Phase 1: Growth in Active Management



# Phase 1: Unenrollment



# Phase 1: Unenrollment





# Phase 1: Clinic-owned, Bluetooth Advantages

3<sup>rd</sup> party tested for validity

Available for purchase at common retailers

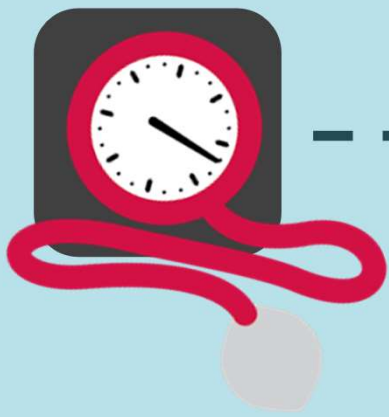
Able to refurbish and redeploy

# Phase 1: Clinic-owned, Bluetooth Challenges

Technical difficulties

Eligibility limitations

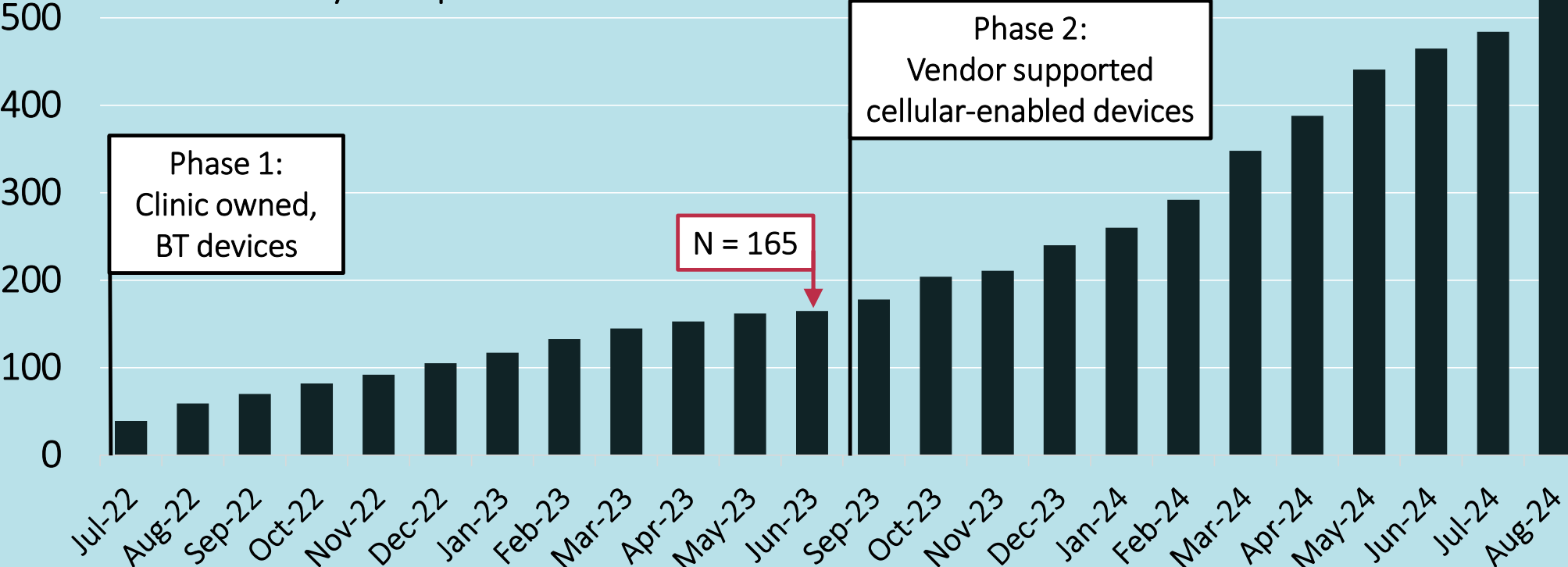
Inventory management



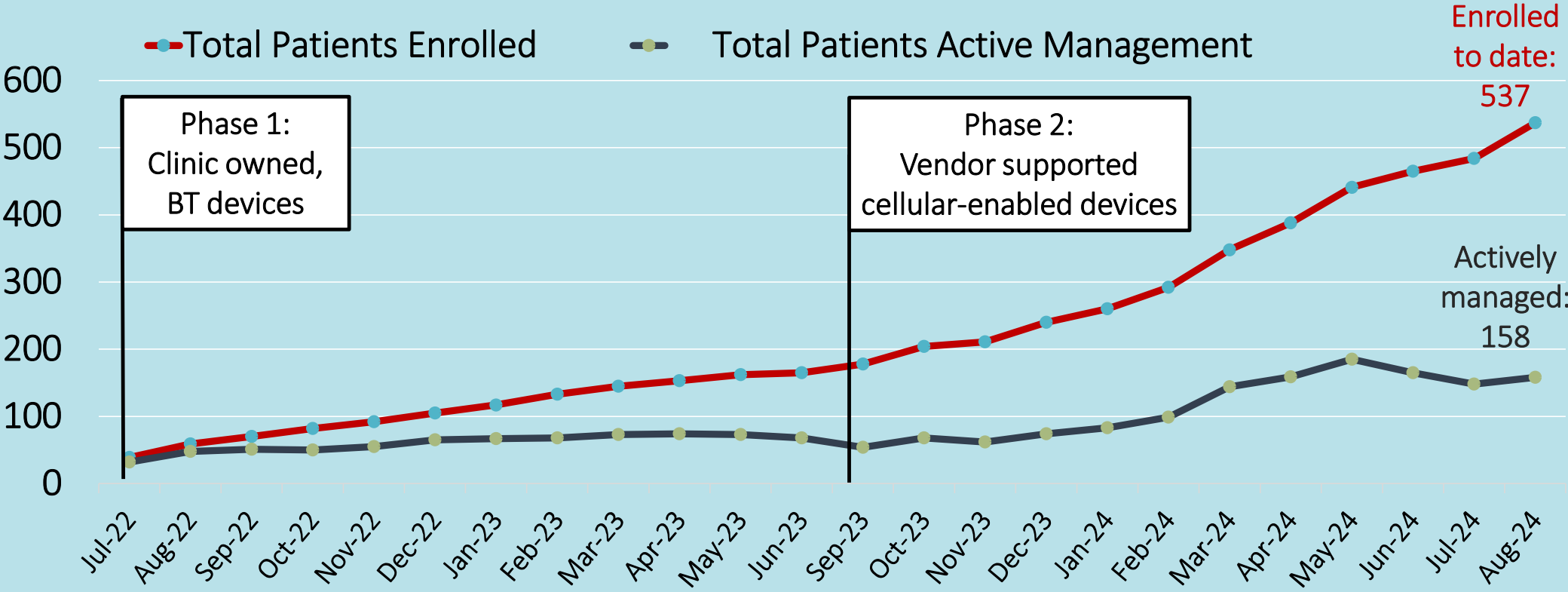
Phase 2: Vendor-supported Cellular-enabled Devices

# Phase 2: Growth in Total Enrollment

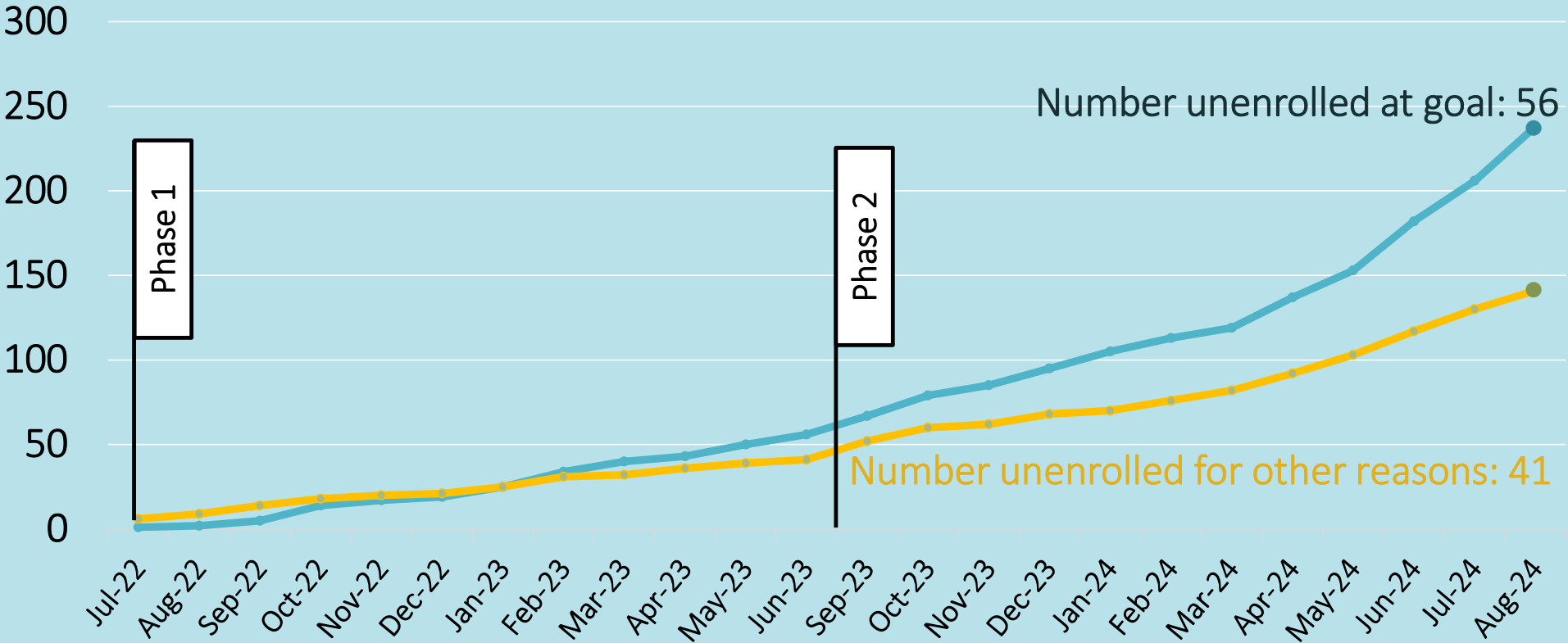
■ Primary care patients enrolled



# Phase 2: Growth in Active Management



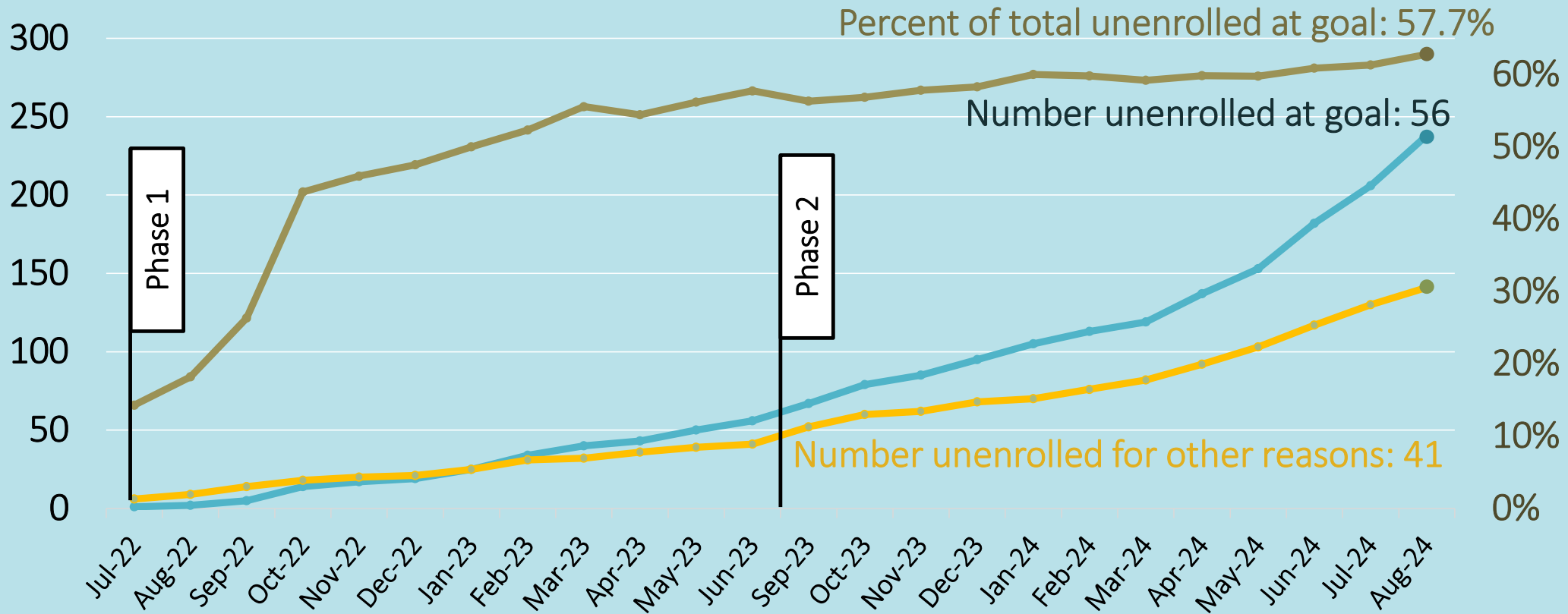
# Phase 2: Unenrollment



Number unenrolled at goal: 56

Number unenrolled for other reasons: 41

# Phase 2: Unenrollment



## Phase 2: Vendor Supported, Cellular Advantages

Expanded eligibility

Remote deployment option

Outsourced technical support

Data satisfies value-based contracts



## Phase 2: Vendor Supported, Cellular Challenges

Patient understanding of vendor role

Unenrollment is not EPIC integrated

Scaling after a successful pilot

# Future Directions

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Expansion to all providers including residents

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Automation of billing for additional RPM codes

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Streamlining workflows

---

Workflows with other members of the care team

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Formal program evaluation

“This tele-health service has been lifesaving, really. I can't thank you and your colleagues enough for your thoroughness.”

**- Patient, post-RPM, HTN now controlled**

# Acknowledgements

- Cory Coffey, PharmD
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- Barbara Bawer, MD
- Melissa Snider, PharmD
- Brian Mitchell
- Hanna Gottschalk
- Emily Ruggiero
- Tom Brancazio
- Mitch Rowell
- Rebecca Whitt
- General Internal Medicine & Family Medicine Clinical Pharmacy Teams

# Helpful Resources to Get Started

- MedNet21: Remote Patient Monitoring [Webcast](#); 2023
- Bipartisan [Policy](#) Center: The Future of Remote Patient Monitoring, 2024
- American Medical Association: Remote Patient Monitoring [Playbook](#), 2022
- The Ohio Pharmacists Association Practice Advancement and Innovation Committee [Payor Toolkit](#)
- Chronic Care Management (CCM): [An Overview](#) for Pharmacists. The American Pharmacists Association, 2017

# Question 1

Which of the following is not true of Remote Physiologic Monitoring (RPM)?

- A. Billing requires 16 days of data transmission
- B. Data must be from a “medical device” as defined by FDA
- C. Patients can self-report their data
- D. Billing can be submitted by only one provider each 30 days



# Question 1

Which of the following is not true of Remote Physiologic Monitoring (RPM)?

- A. Billing requires 16 days of data transmission
- B. Data must be from a “medical device” as defined by FDA
- C. Patients can self-report their data
- D. Billing can be submitted by only one provider each 30 days



## Question 2

You spent 29 minutes in a telehealth encounter reviewing a patient's transmitted blood pressure readings and engaging in management of their hypertension.

Assuming all other billing requirements have been met, which CPT code can be billed at this time?

- A. 99453
- B. 99454
- C. 99457
- D. 99458





## Question 2

You spent 29 minutes in a telehealth encounter reviewing a patient's transmitted blood pressure readings and engaging in management of their hypertension.

Assuming all other billing requirements have been met, which CPT code can be billed at this time?

- A. 99453
- B. 99454
- C. 99457
- D. 99458



## Question 3

On October 1<sup>st</sup>, you provided a BP monitor and weight scale and trained the patient on proper use of each. On October 21<sup>st</sup>, you spent 16 minutes on the phone with the patient reviewing the readings that they transmitted daily from each device since set up to evaluate and treat their heart failure.

Which combination of CPT codes are eligible to be billed at this time?

- A. 99453 + 99453
- B. 99453 + 99454
- C. 99454 + 99454
- D. 99453 + 99457



## Question 3

On October 1<sup>st</sup>, you provided a BP monitor and weight scale and trained the patient on proper use of each. On October 21<sup>st</sup>, you spent 16 minutes on the phone with the patient reviewing the readings that they transmitted daily from each device since set up to evaluate and treat their heart failure.

Which combination of CPT codes are eligible to be billed at this time?

- A. 99453 + 99453
- B. 99453 + 99454
- C. 99454 + 99454
- D. 99453 + 99457





# References



- Itchhaporia D. The Evolution of the Quintuple Aim: Health Equity, Health Outcomes, and the Economy. *J Am Coll Cardiol.* 2021 Nov 30;78(22):2262-2264.
- Horton C. States With The Least Healthy (And Healthiest) Populations, Ranked. *Forbes Advisor.* (2024).
- Harris J, Curtis M, Sandalow M, Hoagland GW, Weber Serafina M. (2024). The Future of Remote Patient Monitoring. Bipartisan Policy Center. [https://bipartisanpolicy.org/wpcontent/uploads/2024/01/BPC\\_Health\\_FutureOfRemoteMonitoring.pdf](https://bipartisanpolicy.org/wpcontent/uploads/2024/01/BPC_Health_FutureOfRemoteMonitoring.pdf)
- Tan SY, Sumner J, Wang Y, et al. A systematic review of the impacts of remote patient monitoring (RPM) interventions on safety, adherence, quality-of-life and cost-related outcomes. *npj Digit. Med.* 7, 192 (2024).
- Pawar B. Remote Patient Monitoring Devices Market Size, Share & Industry Analysis, By Type (Products/Devices {Multi-parameter Monitoring, Respiratory Monitoring, Blood Glucose Monitoring, Cardiac Monitoring, and Others}, and Services), By Application (Oncology, Diabetes, Cardiovascular Diseases, and Others), By End-User (Payers, Providers, and Patients), and Regional Forecast, 2024-2032. (2024). *Fortune Business Insights.* <https://www.fortunebusinessinsights.com/remote-patient-monitoring-devices-market-106328>
- Jackson S, Walker C. Telehealth & Remote Patient Monitoring Ecosystem 2023. *KLAS Research.* <https://klasresearch.com/report/telehealth-and-remote-patient-monitoring-ecosystem-2023-vendor-reported-capabilities-and-customer-adoption/3079>
- CMS-1784-F Medicare Physician Fee Schedule Final Rule 2024 and the “Physician Fee Schedule Look-Up Tool,” available at: <https://www.cms.gov/medicare/physician-fee-schedule/search/overview>
- Medicare and Medicaid Programs; CY 2024 Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment and Coverage Policies; Medicare Shared Savings Program Requirements; Medicare Advantage; Medicare and Medicaid Provider and Supplier Enrollment Policies; and Basic Health Program. (2023). Department of Health and Human Services. Centers for Medicare & Medicaid Services.
- Remote Patient Monitoring Playbook. (2022). American Medical Association. <https://www.ama-assn.org/system/files/ama-remote-patient-monitoring-playbook.pdf>
- Consumer Guide. American Diabetes Association. <https://consumerguide.diabetes.org/collections/cgm>

Need More  
Information?

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