

Share and Learn Webinar



Self-Measured Blood Pressure

December 15, 2020



WELCOME

- As you arrive, please enter the following into the chat box:
 - **Name**
 - **Location**
 - **Organization**



Cardiovascular Disease Prevention

- Partnerships with Kaiser Permanente in Northern and Southern California to:
 - Support community health organizations in reducing heart attacks and strokes in high-risk populations
 - Improving clinical systems and processes



Today's Agenda

SMBP Survey Results

- CCHE

SMBP Peer Presentations

- LA County DHS
- Alameda Health Services

Q&A

- Please type your questions into the chat box

NOTE: Today's webinar is being recorded and will be made available on the CCI website along with other materials presented today

Self-measured Blood Pressure Program Survey Results

12/15/2020

Center for Community Health and Evaluation



Survey methods

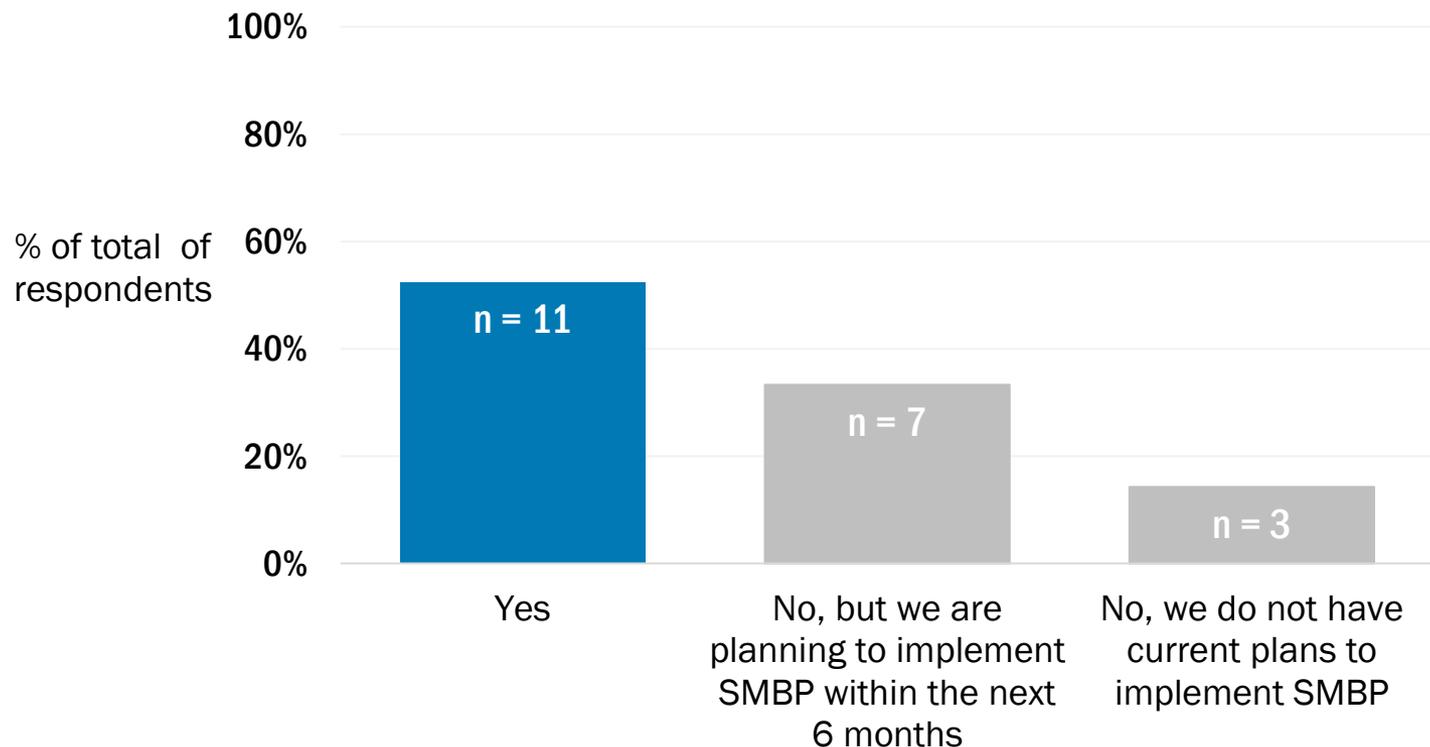
- As part of the PHASE and TC3 cardiovascular risk reduction programs funded by Kaiser Permanente Northern and Southern California, participating health centers and hospitals, and member health centers of participating consortia were asked to fill out a survey about virtual care strategies and SMBP implementation.
- The survey was fielded 11/2 through 11/20.

	Responded	Potential respondents
Hospital grantees	6	6
Health center grantees	3	6
Member health centers of consortia grantees	12	25
Total organizations	21	37
	57% response rate	

SMBP: Status of implementation

Takeaways: 11 organizations (over half of respondents) are implementing a SMBP program, 7 are planning to implement a SMBP program in the next 6 months, and 3 do not have current plans.

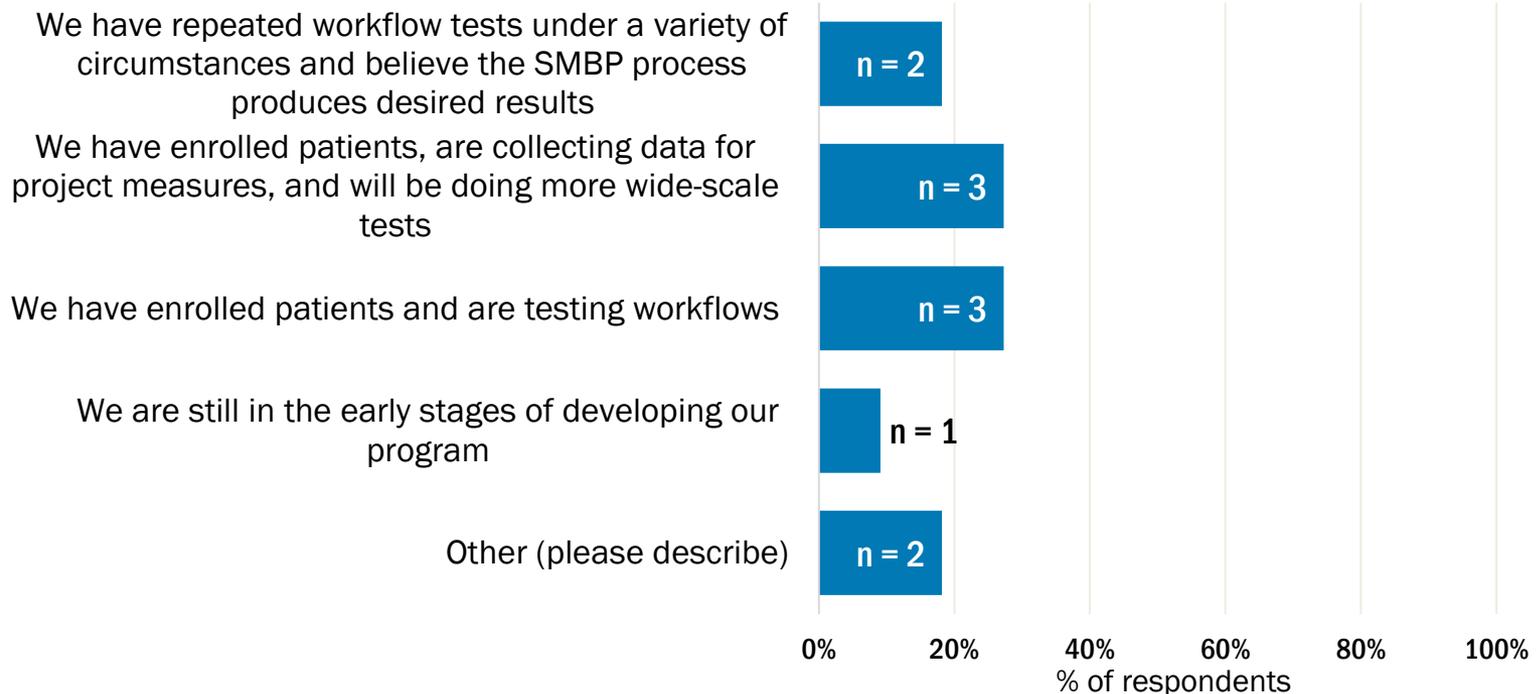
Status of SMBP implementation



SMBP program: Status of 11 programs

Takeaways: Organizations are at varying stages of developing and testing their SMBP workflows. Most respondents (n=8) indicated they have enrolled patients and are testing workflows; a few are in earlier stages of their program.

SMBP program status

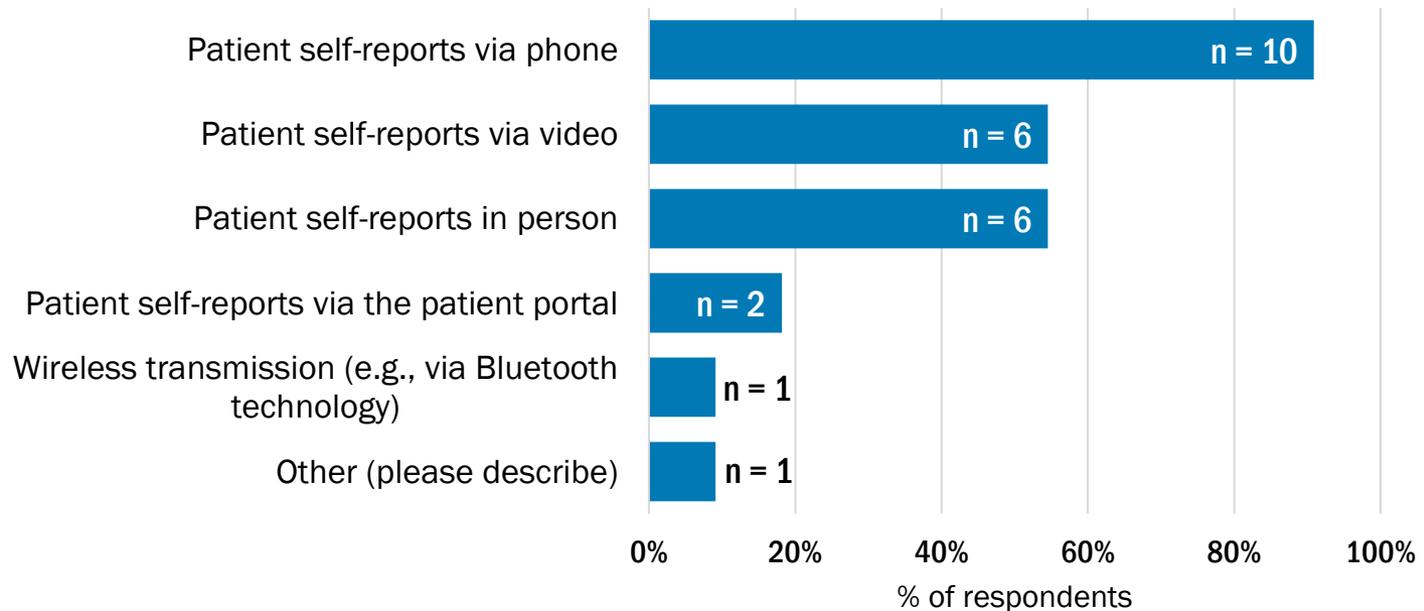


Other: **Adapting workflows** - "We are adapting workflows to post-Covid challenges of staffing changes and limitations. Nurses were doing patient education on home BP monitors, but many of our nurses have been deployed to support Covid work. Before Covid, we prioritized our B/AA patients to receive home BP cuffs; now, we need everyone to have one due to our shift to telehealth."

SMBP program: Mode of receiving remote BP readings from patients

Takeaways: The most common method of reporting remote BP patient readings is by phone followed by video and in-person.

Reporting of remote BP patient readings
respondent can check all that apply

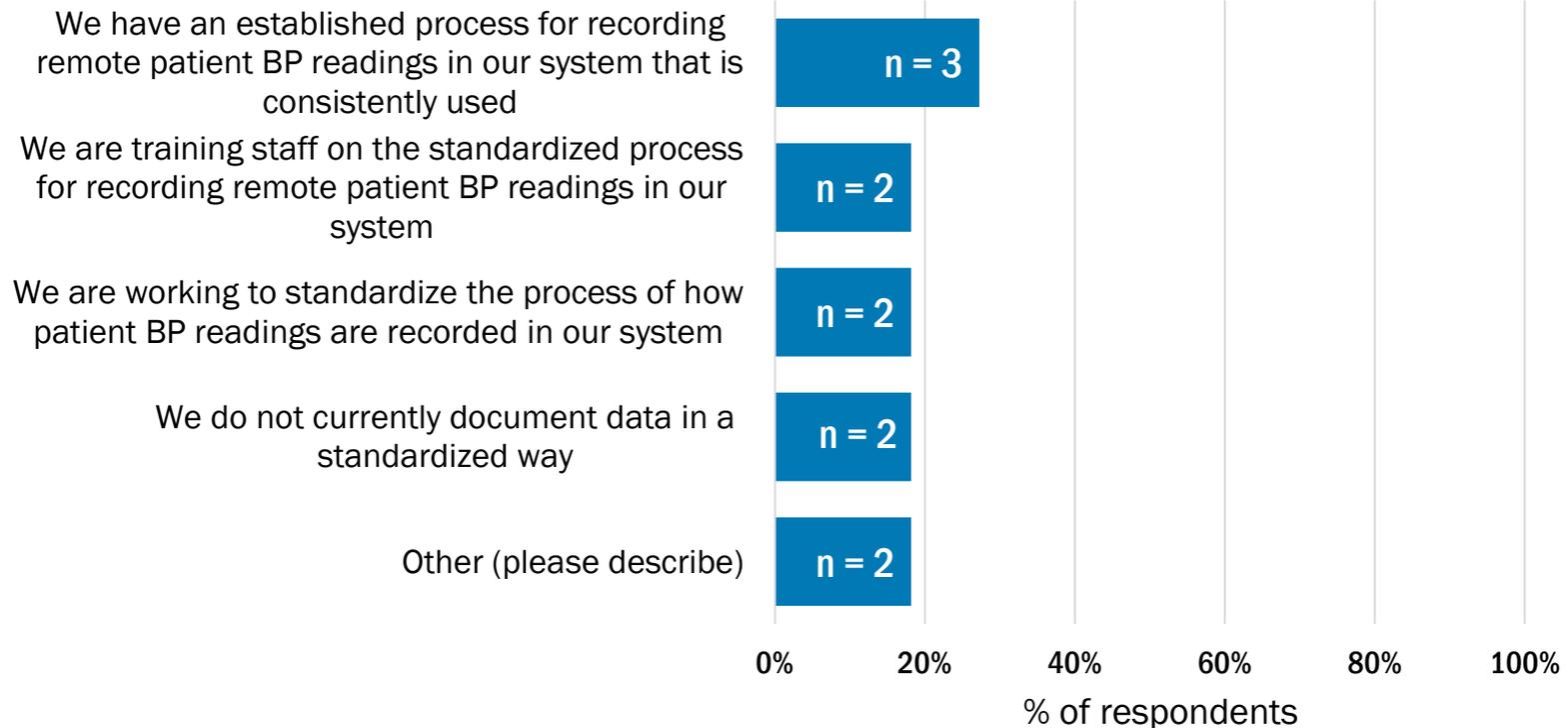


Other: no description

SMBP program: Documenting remote patient readings

Takeaways: Almost half the programs (n = 5) are using or are training staff on a standardized process for recording remote patient BP readings. A few are working on standardizing their documentation process.

Documentation of remote patient BP readings



Other: "Our EHR now can capture remote BP readings reported by patients; we lack a standard work and guidance for our providers to input this in our EHR system (We are working on developing this.)"; no description

SMBP program: Organizations face a variety of challenges around implementing a SMBP program

The top challenges are related to patient education and staffing resources.

Challenges (respondent chooses top 3)	Count
Ability to confirm patient knowledge of BP measurement via teach-back demonstration	5
Staffing resources to support SMBP program	5
Documenting remote patient readings in our EHR	3
Identifying and enrolling patients in the SMBP program	2
Obtaining accurate remote patient readings	2
Securing funding for BP cuffs	2
Supplier challenges with acquiring BP cuffs	2
Prioritizing SMBP at the organizational/leadership level	1
Identifying appropriate disciplines (e.g., clinical pharmacist, RN, MA) needed to administer the SMBP workflow	0
Other (please describe)	5

Other:

"The telehealth component of doing virtual visits when [showing how to use the monitor](#)"

"[Finding vendors to supply](#) validated home BP cuffs in large amounts. Our last order of 500 cuffs are backordered more than three months

"[Contacting patients and teaching them to take measurements](#) at home correctly, getting patients to keep follow-up appointments and patients not being prepared for visits with BP readings"

"[Ability to confirm teach back](#) when doing virtual SMBP enrollment is challenging"

Early SMBP results show movement in three areas

SMBP programs show improved blood pressure control for those participating (n=3)

- "If patients consistently record BP values correctly and speak with someone about their results (4 visit model), their BP improves dramatically."
- "Patients in our SMBP program have better blood pressure control than those who are not in the program."

SMBP programs improve patient engagement and empowerment (n=3)

- "Empowers the patient to be a more active participant in monitoring and controlling their own Blood Pressure."
- "Our patients are able to self-monitor, and we are able to adjust regimens in a more timely and patient centered way."

An SMBP program that is combined with nurse titration protocols is a powerful tool for enhancing team-based care (n=1)

- "This program in the nurse directed clinic reduces the burden on the limited clinic slots available for providers."
- "Nurse development and pride are super high as a result of the program."

Illustrative quotes are provided.

Thank you

Center for Community Health and Evaluation

Maggie Jones – maggie.e.jones@kp.org

Carly Levitz – carly.e.levitz@kp.org

Crystal Dinh – crystal.x.dinh@kp.org

www.cche.org





Health Services
LOS ANGELES COUNTY



Taking Cardiovascular Care HOME: Optimizing Care of Patients with Hypertension

Laura Myerchin Sklaroff, MA

Sandra Gross-Schulman, MD, MPH, RN

Jeffrey G. Guterman, MD, MS

December 15, 2020

Los Angeles County Department of Health Services

- More than 4,700 square miles
- Over 425,000 empaneled patients
 - Diverse (11% are African Americans and 64% are Latino/a/x)
 - High Burden of Illness (> 40% of patients have diabetes, heart failure, or asthma, and one or more other chronic conditions)
- 4 hospital campuses and 27 standalone ambulatory care facilities
- 1 Enterprise-wide EHR

Nurse-Executed, Standardized Procedure-Driven HTN Medication Titration

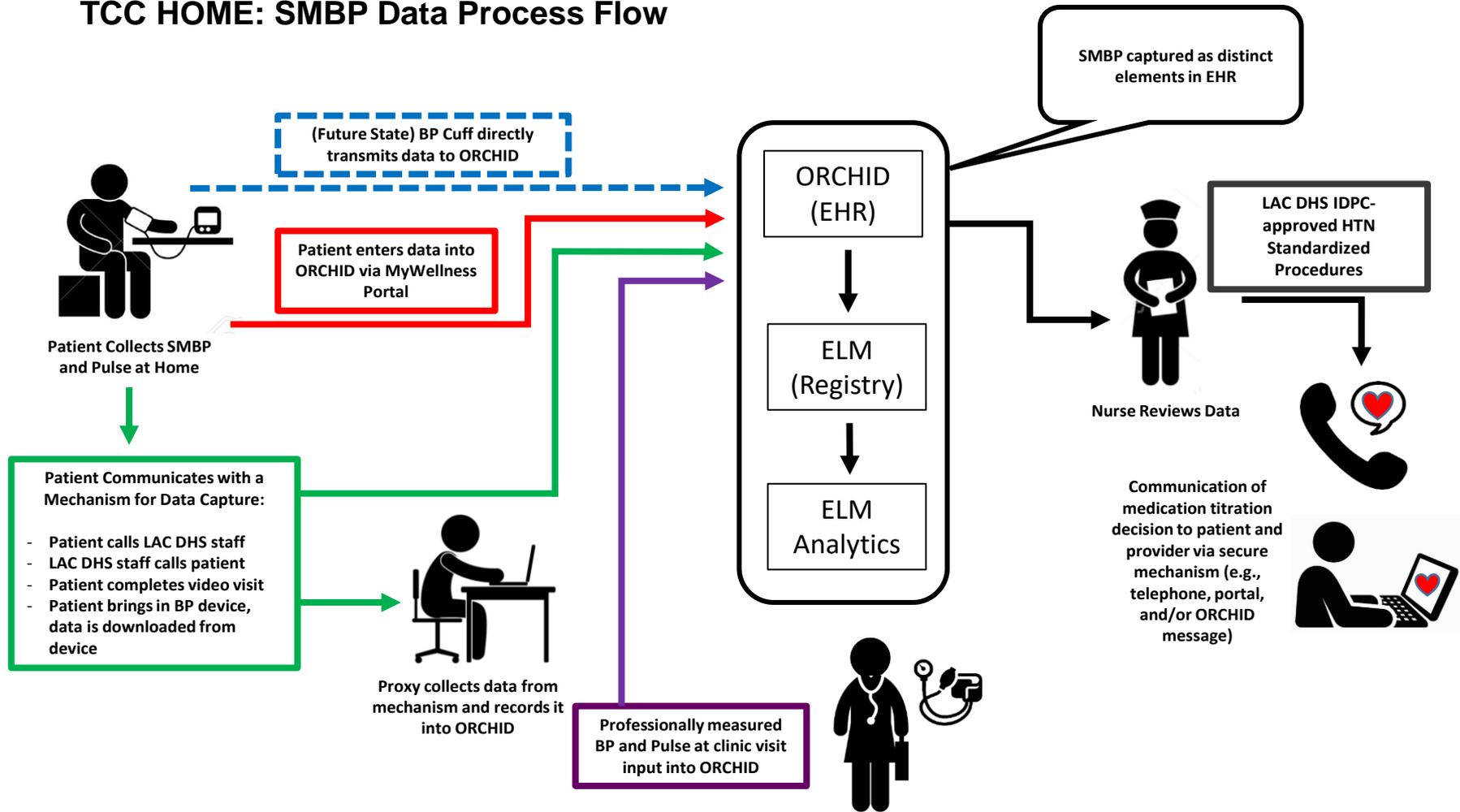
Aims

- Increase the patient percentage and speed to BP goal
- Empower RN Medication Titration independent of specific provider order
- Engage patients as a member of the care team

Approaches

- Home SMBP collection, reporting, and integration into EHR
- Remote and in-person visits
- Decision support built into EHR
- Add elbow support to traditional nurse education

TCC HOME: SMBP Data Process Flow





*Performed on: 11/30/2020 1703 PST

By: AMBRNTITRA, Amb RN with

Last Dose Adjust

Symptoms

Orthostatics

BP Used For Titra

Titration Decision

Medication Adher

Orders and Action

Education

Lab View

Hypertension Medication Adjustment: Benazepril

Do not use this standardized procedure for medication titration and consult provider if patient is:

- **Having their hypertension (HTN) managed by a cardiologist or nephrologist**
- **has uncontrolled HTN and on at least 4 antihypertensive medications**
- **has an eGFR less than 30 mL/min**
- **has suspected or confirmed aortic stenosis**
- **is pregnant (or becomes pregnant) or breastfeeding**

If a patient is being actively titrated and is hospitalized for any reason, stop titration and message the provider to re-request nurse titration as appropriate.

If the patient has a rise from their baseline to a BP that is greater than systolic BP 180 mmHg or diastolic BP 120 mmHg, ask about symptoms of possible hypertensive emergency (e.g., headache, confusion, dizziness, blurred vision, facial drooping, slurred speech, numbness, weakness, chest pain, shortness of breath); if patient has symptoms of possible hypertensive emergency, notify provider immediately.

When was the last dose adjustment?

10/01/2020

What is the target BP?

- Provider specified.**
- Patient has diabetes, chronic kidney disease or cardiovascular disease: less than 130/80 mmHg
- All other patients: less than 140/90 mmHg

Systolic/Diastolic BP

140 mmHg 70 mmHg

[Go to Symptoms tab](#)

*Performed on: 11/30/2020 1703 PST

By: AMBRNTITRA, Amb RN with Titration

- Last Dose Adjust
- Symptoms
- Orthostatics
- BP Used For Titra
- Titration Decision
- Medication Adher
- Orders and Action
- Education
- Lab View

Are there new Cr and K+ results since the last dose adjustment?

Yes No

Last Labs Creatinine, eGFR and Potassium

Event Name	Event Result	Date/Time
Creatinine Lvl	0.8 mg/dL	11/12/20 07:41:00
Potassium Lvl	4 mmol/L	11/12/20 07:41:00

Baseline Cr: 0.75 mg/dL 08/26/2019

Has the latest Cr increased by more than 30% from baseline?

Baseline Cr: 0.75 mg/dL Latest Cr: 0.8 mg/dL Percent Change: 7%

Yes - do not titrate medication by SP; continue assessment and consult provider
 No

Is the latest K+ more than the upper limit of normal (ULN)?

Latest K+: 4.0 mmol/L

Yes - do not titrate medication by SP; continue assessment and consult provider
 No

If patient in clinic, order Cr and K+ labs per local policy to obtain rapid results within 90 minutes or less; re-assess patient when results are available. If clinic unable to obtain results within 90 minutes or less or patient not in clinic, order routine Cr and K+ labs; reschedule assessment

Order Cr and K+ labs per local policy to obtain rapid results within 90 minutes or less; re-assess when results are available

Save form till rapid results are available

Order routine Cr and K+ labs and reschedule assessment

Go to Education tab if routine Cr and K+ labs are ordered

Has the Cr increased by more than 30% from baseline?

Baseline Cr: mg/dL Latest Cr: Percent Change:

Yes - do not titrate medication by SP; continue assessment and consult provider
 No



*Performed on: 11/30/2020 1703 PST

By: AMBRNTITRA, Amb RN with Titration

- Last Dose Adjust
- Symptoms
- Orthostatics
- BP Used For Titra**
- Titration Decision
- Medication Adher
- Orders and Action
- Education
- Lab View

Blood Pressure	
Systolic Blood Pressure	Diastolic Blood Pressure
Systolic Blood Pressure: 160 mmHg (11/20/20 11:02:00)	Diastolic Blood Pressure: 90 mmHg (11/20/20 11:02:00)
Systolic Blood Pressure: 120 mmHg (10/23/20 08:01:00)	Diastolic Blood Pressure: 75 mmHg (10/23/20 08:01:00)
Systolic Blood Pressure: 120 mmHg (06/18/20 08:47:00)	Diastolic Blood Pressure: 78 mmHg (06/18/20 08:47:00)

BP Used For Titration Decision

Is the patient doing Self Measured Blood Pressure (SMBP)? Yes No

Does the patient have at least 2 SMBP values measured on 2 different days in the past week? (if there are only 2 SMBP in the past week, use a new SMBP or the lowest clinic-measured BP for 3rd value)

Yes No

[If No, go to Education tab](#)

SMBP 1: 150 mmHg / 92 mmHg

SMBP 2: 164 mmHg / 88 mmHg

SMBP 3 Clinic-measured BP

SMBP 3: mmHg / mmHg

Or

Clinic-measured BP: 156 mmHg / 94 mmHg

Comments:

Average SMBP: mmHg / mmHg

Average SMBP + Clinic BP: 157 mmHg / 91 mmHg

Clinic-measured BP: mmHg / mmHg



*Performed on: 11/30/2020 1703 PST

By: AMBRNTITRA, Amb RN with Titration

- Last Dose Adjust
- Symptoms
- Orthostatics
- ✓ BP Used For Titra
- Titration Decision**
- Medication Adher
- Orders and Action
- Education
- Lab View

Titration Decision

Is the BP at target? Yes No **If Yes, go to Education tab**

Is one of the BP's used for this decision a clinic measured BP?

Yes No

Wait at least 5 minutes and repeat BP

Repeat BP:

150 mmHg / 86 mmHg

Average BP (SMBP 1, SMBP 2 and Repeat BP)

155 mmHg / 89 mmHg

Is the repeat BP in target range? Yes No **If Yes, go to Education tab**

Has the patient started any new OTC or prescribed medication within the past 7 days and taken a dose in the last 24 hours? Yes No

Name of Drug:

Name of Drug:

Did the patient skip any of their BP medications in the last 24 hours? Yes No

Have the patient take their medications, wait 30 minutes and re-check BP

Re-checked BP mmHg / mmHg

Is re-checked BP in target range? Yes No **If Yes, go to Education tab**



Orders and Actions – Diagnosis: Hypertension

Reminder - do not titrate by SP if:

1. The patient has symptoms of orthostasis and you are not able to obtain orthostatic vital signs now or orthostatic vital signs are consistent with orthostasis
2. The patient developed an intractable cough
3. There new Cr and K+ results since the last dose adjustment and the latest Cr increased by more than 30% from baseline or the latest K+ is more than the upper limit of normal (ULN)

Adherence is Moderate or High. Select current dose for step up order recommendation

Daily dosing:

- 5 mg PO Daily - step up to 10 mg PO Daily; re-assess in 12-28 days
- 10 mg PO Daily - step up to 20 mg PO Daily; re-assess in 12-28 days
- 20 mg PO Daily - step up to 40 mg PO Daily; re-assess in 12-28 days
-

BID dosing:

- 2.5 mg PO BID - step up to 5 mg PO BID; re-assess in 12-28 days
- 5 mg PO BID - step up to 10 mg PO BID; re-assess in 12-28 days
- 10 mg PO BID - step up to 20 mg PO BID; re-assess in 12-28 days

- Step-up dose replaces previous dose; previous dose discontinued; pharmacy and provider notified of both actions
- In the 'eRx Note to Pharmacy' box, write the following message: Medication titrated to (dose) mg on (date) and is replacing the (dose) mg dose; pharmacy informed
- If patient using outside pharmacy, pharmacy called and notified of change

Labs - check labs 12-28 days after medication titration, prior to next assessment

Order Cr and K+ Labs

Notes

Segoe UI

9





*Performed on: 11/30/2020 1703 PST

By: AMBRNTITRA, Amb RN with Titration

- Last Dose Adjust
- Symptoms
- Orthostatics
- BP Used For Titra
- Titration Decision
- Medication Adher
- Orders and Action
- Education**
- Lab View

Education Section

Medication Specific Education

Reinforce with pre-menopausal females who have not had a hysterectomy not to become pregnant while taking this medication

General HTN Patient Education - Educate patient on:

- Importance of medication adherence and possible side effects of abrupt cessation of therapy (e.g., angina, myocardial infarction, worsening heart failure); confirm that patient has enough medication to last until the next visit
- Refilling their prescriptions before they run out by using a calendar reminder note
- Filling and using their pill box as specified
- Setting up reminders such as a calendar, chart, alarm, color-coded medication reminders, using a smart phone app, asking friends or family, or trying to link taking their medication with something they do regularly at the same time each day
- Symptoms of possible hypertensive emergency (e.g., headache, confusion, dizziness, blurred vision, facial drooping, slurred speech, numbness, weakness, chest pain, shortness of breath)
- To contact staff for any perceived side effects, especially dizziness or lightheadedness

BP device and cuff given to patient on 10/28/2020

- Patient trained on use of BP device and cuff
- Patient has their own BP device and proper use reinforced
- Hypertension patient packet (log, education materials) given and reviewed with patient

- Confirm that patient has an upcoming appointment for titration
- Inform Provider that patient is on maximum tolerated dose per standardized procedure
- Inform Provider that patient's BP is at target

Additional Comments

Segoe UI 9

HTN Med Titration: Benazepril Entered On: 12/05/2020 14:37 PST
Performed On: 12/05/2020 14:25 PST by AMBRNTITRA, Amb RN with Titration

Last Dose Adjustment and Target BP

When was the last dose adjustment?: 10/1/2020 PDT

What is the target BP?: Provider specified.

Systolic Blood Pressure: 140 mmHg

Diastolic Blood Pressure: 70 mmHg

AMBRNTITRA, Amb RN with Titration - 12/05/2020 14:25 PST

Symptoms

Does the patient have symptoms of orthostasis?: Yes

Description: (e.g., feel the room is spinning, dizziness, lightheaded or feeling of fainting, fainting): dizziness

Symptom onset: 4

Symptom onset time: Days ago

Pattern of symptoms:: Episodic; how long does each episode last

Episode time: 10

Episode duration: Minutes

Provoking factors: head movement

Associated symptoms: none

Are you able to obtain orthostatic vital signs now?: Yes - perform orthostatic vital signs (if patient unable to stand safely, use sitting position)

Are the orthostatic vital signs results consistent with orthostasis?: No - continue assessment, inform provider of patient complaints

Is the patient pregnant or wants to become pregnant?: No

Has the patient developed an intractable cough?: No

Are there new Cr and K results since the last dose adjustment?: Yes

Baseline Creatinine: 0.75 mg/dL

Baseline Creatinine Date: 8/26/2019 PDT

Latest Cr: 0.8 mg/dL

Creatinine Percent change: 7%

Baseline Creatinine 2: 0.75 mg/dL

Has the latest Cr increased by more than 30% from baseline?: No

Potassium Level: 4.0 mmol/L

Is the latest K more than the upper limit of normal (ULN): No

AMBRNTITRA, Amb RN with Titration - 12/05/2020 14:25 PST

Orthostatics

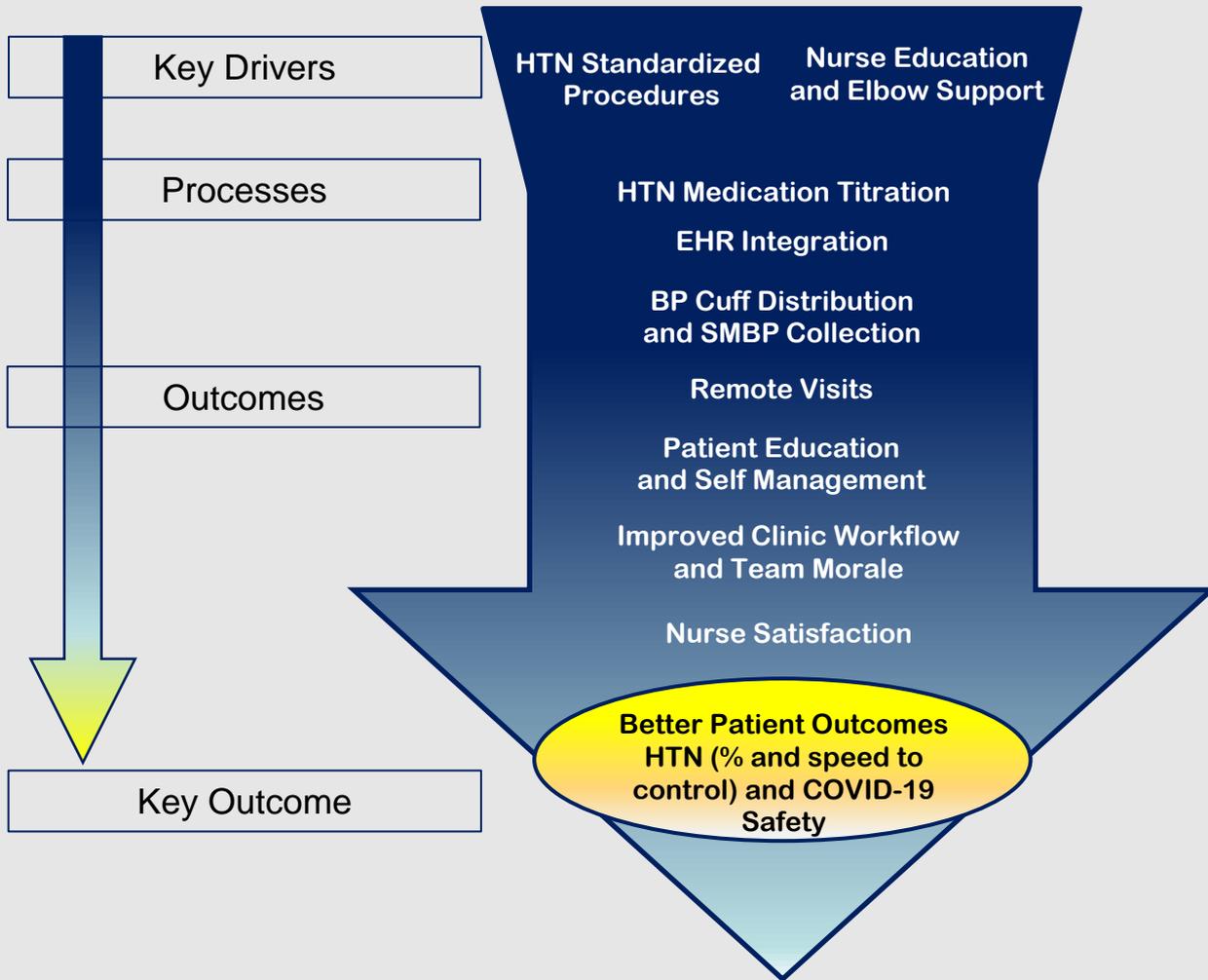
BP Position 1: Sitting

Systolic BP Position 1: 150 mmHg

Diastolic BP Position 1: 92 mmHg (HI)

Pulse BP Position 1: 64 bpm

Time BP Position 1: 12:00 PST



Implementation by the Numbers

- 4 Sites Live (4 on deck for TC3, becoming standard of care in LAC DHS)
- 13 RNs Trained (~13 on deck)
- 10 Hypertension Standardized Procedures (so far)
- October and November 2020 (from 3 sites and 6 SPs)
 - 67 Patients Referred and Enrolled
 - 60 (90%) Had a visit
 - 37 (62%) already at BP goal



Lessons Learned

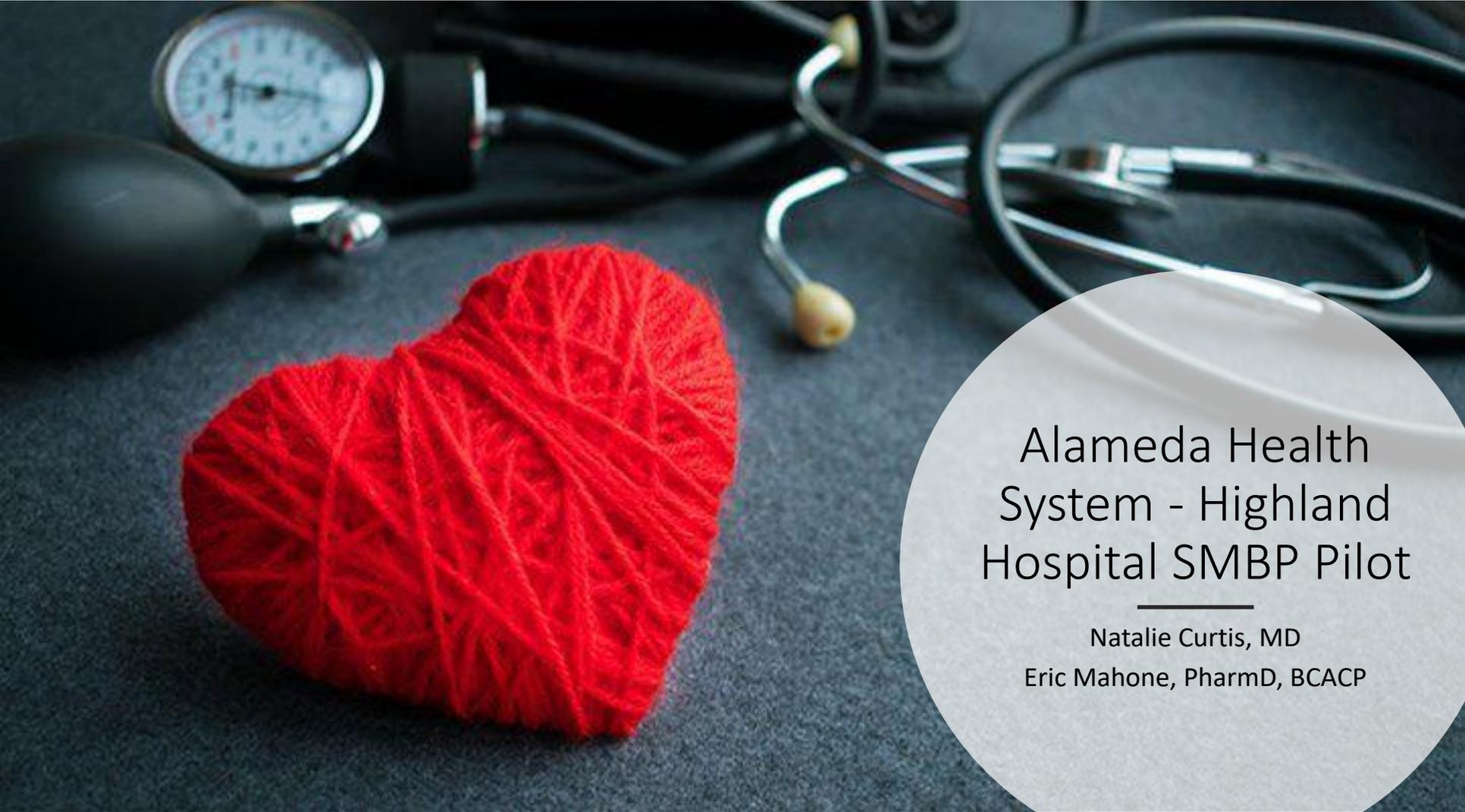
- PDSA Cycles
 - Virtual and In-Person
- The Devil is in the Details
 - Taking paper-based SMBP Logbooks into our EHR
- Managed care assigned members vs engaged patients



Questions?

Contact Info:
Laura Myerchin Sklaroff
Project Coordinator
Lsklaroff@dhs.lacounty.gov





Alameda Health System - Highland Hospital SMBP Pilot

Natalie Curtis, MD

Eric Mahone, PharmD, BCACP

Pre-Pandemic SMBP in Primary Care at AHS

- ▶ Low usage (<10%) of SMBP
- ▶ No standardization:
 - ▶ Who? How? When?
- ▶ Provider dependent
- ▶ Inconsistent payer coverage of upper arm blood pressure monitoring devices

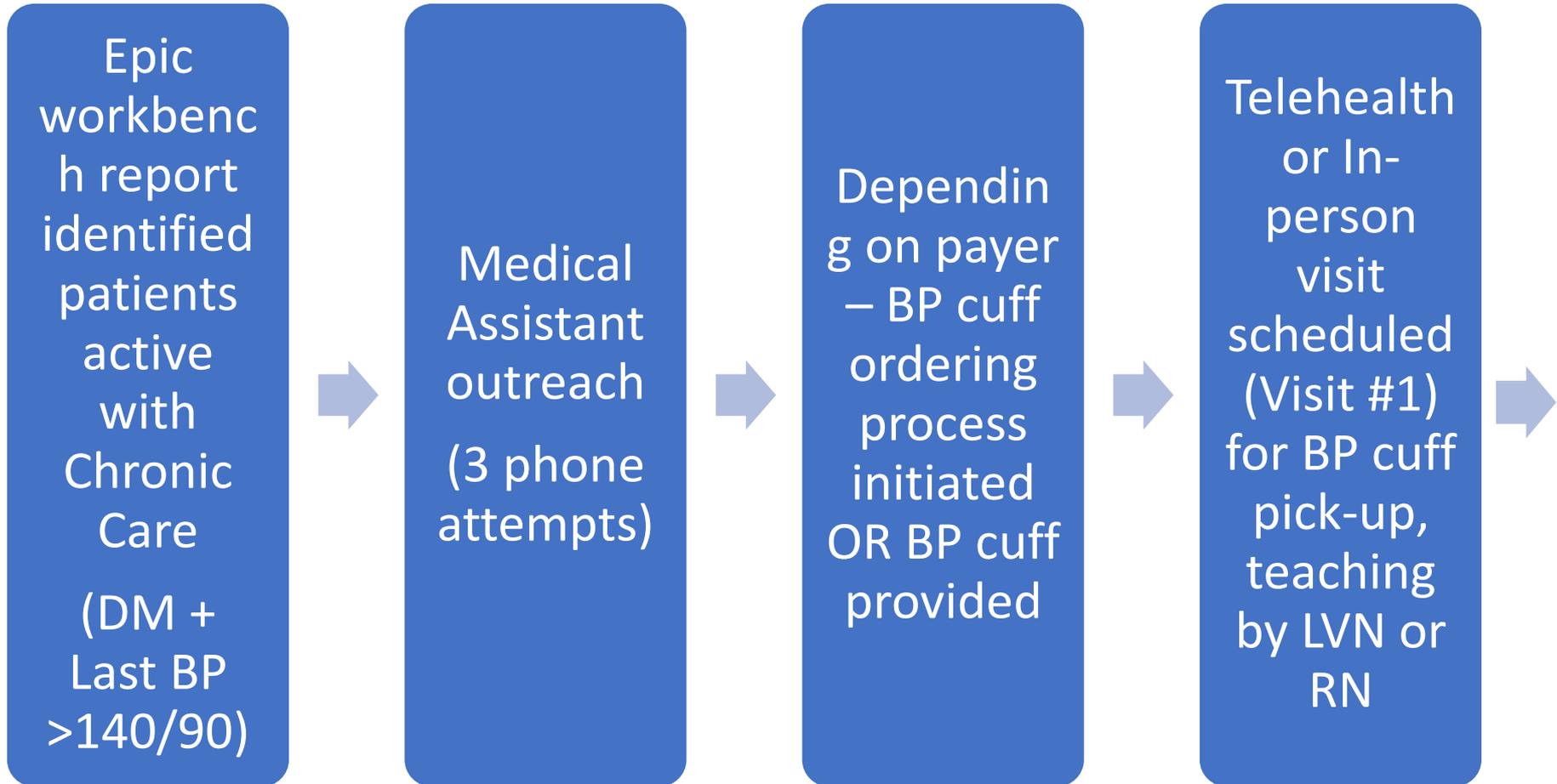


Alameda Health System's 2020 Opportunity

- 90% In-person → 80-90% Telehealth
- Current climate: **Financial, clinical, and ethical incentive for SMBP expansion**
- Chronic Care Clinic
 - Multidisciplinary team embedded in Primary Care
 - Clinical Pharmacist
 - Registered Nurse
 - Medical Assistant
- Chronic Care provides DM and HTN medication management, education, and care coordination
- Well-positioned to impact vulnerable patients and test standardized process for SMBP



Process Map (High Level)



Process Map (High Level) Continued



* If BP >180/100 mmHg then in-person visit scheduled

Patient and Staff Education

1) Patient materials

- 'Measure Your Blood Pressure' – 1 page physical and electronic document
 - Link to AMA instructional video
 - SmartText created to embed content in visit notes

2) Standard Work Document for MA

- Orientation/Tip sheet for Epic report
- Scripting for outreach
- Epic SmartPhrase for PCP notification
- Instructions for scheduling

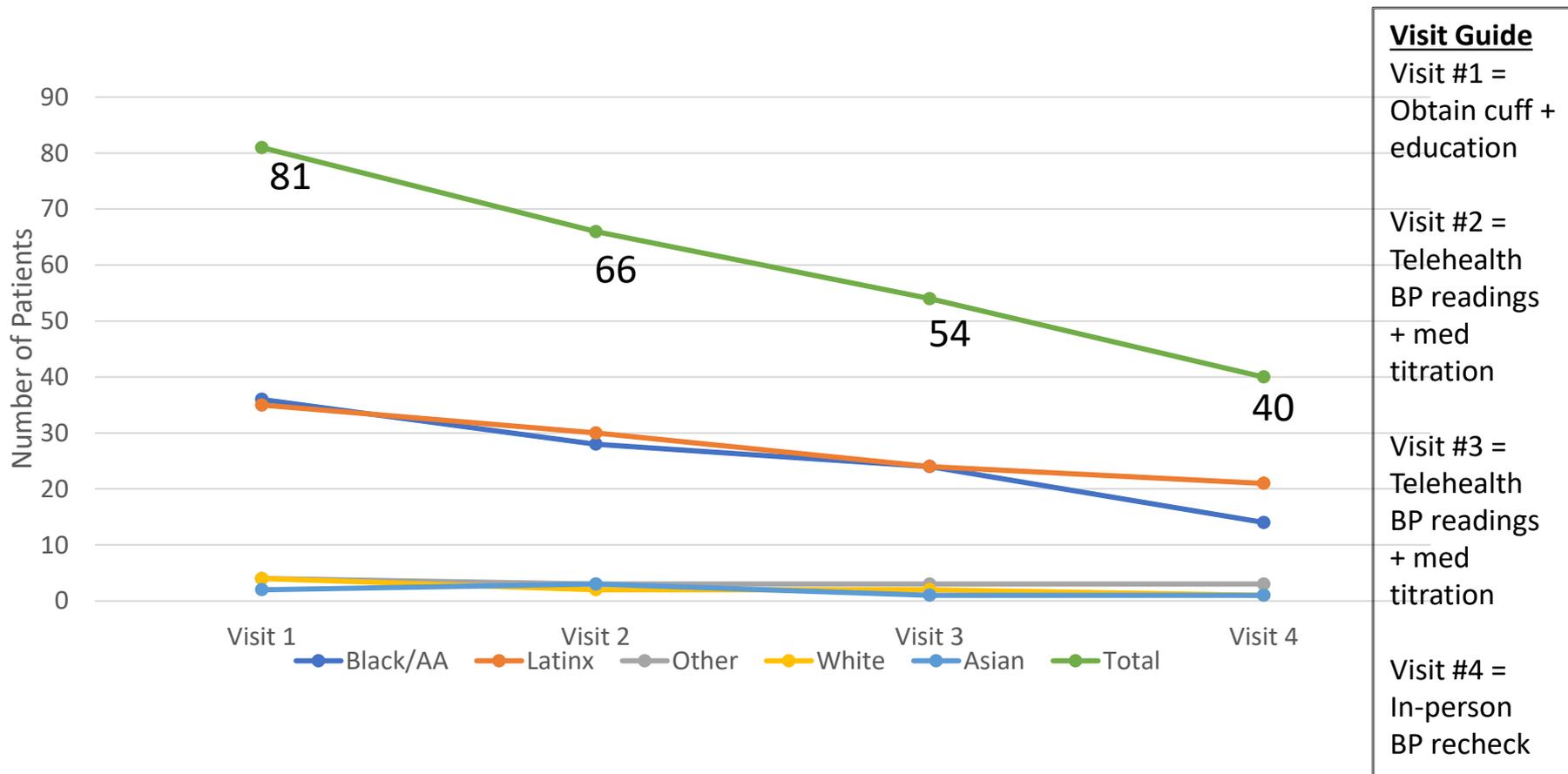
3) Standard Work Document for RN/PharmD

- Overview of expected content for each visit
- Reference Standardized Procedure for RN and Collaborative Practice Agreement for PharmD for HTN management

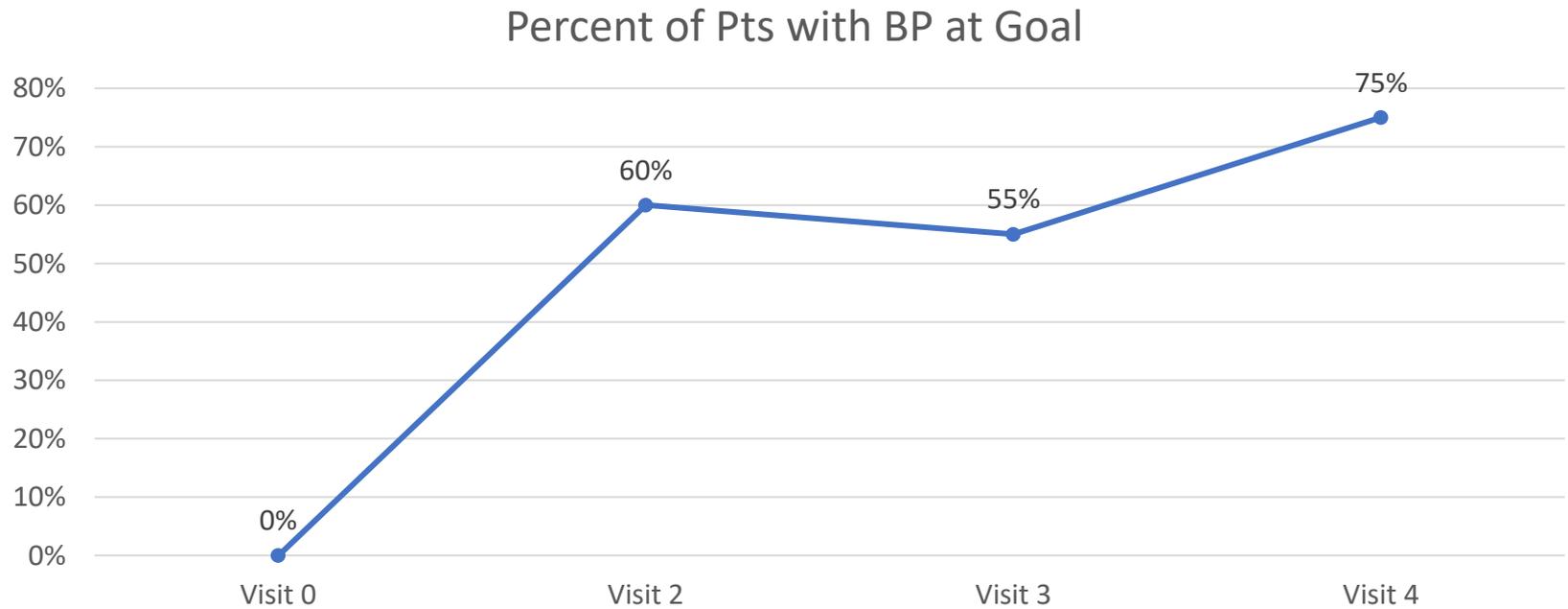
Highland Hospital SMBP Pilot Summary

- Pilot period: 5/1/20-10/31/20
- Report generated 91 patients:
 - Active Chronic Care Status + DM diagnosis + Last BP >140/90
- Highland Chronic Care team heavily involved with planning
 - Synergy with DM visits already occurring
 - Each part of the team owned a piece
- Reliance on in-person visits for initiating SMBP has the potential to widen disparities already present in HTN care at AHS
 - Race subgroup analysis for BP control and process metrics

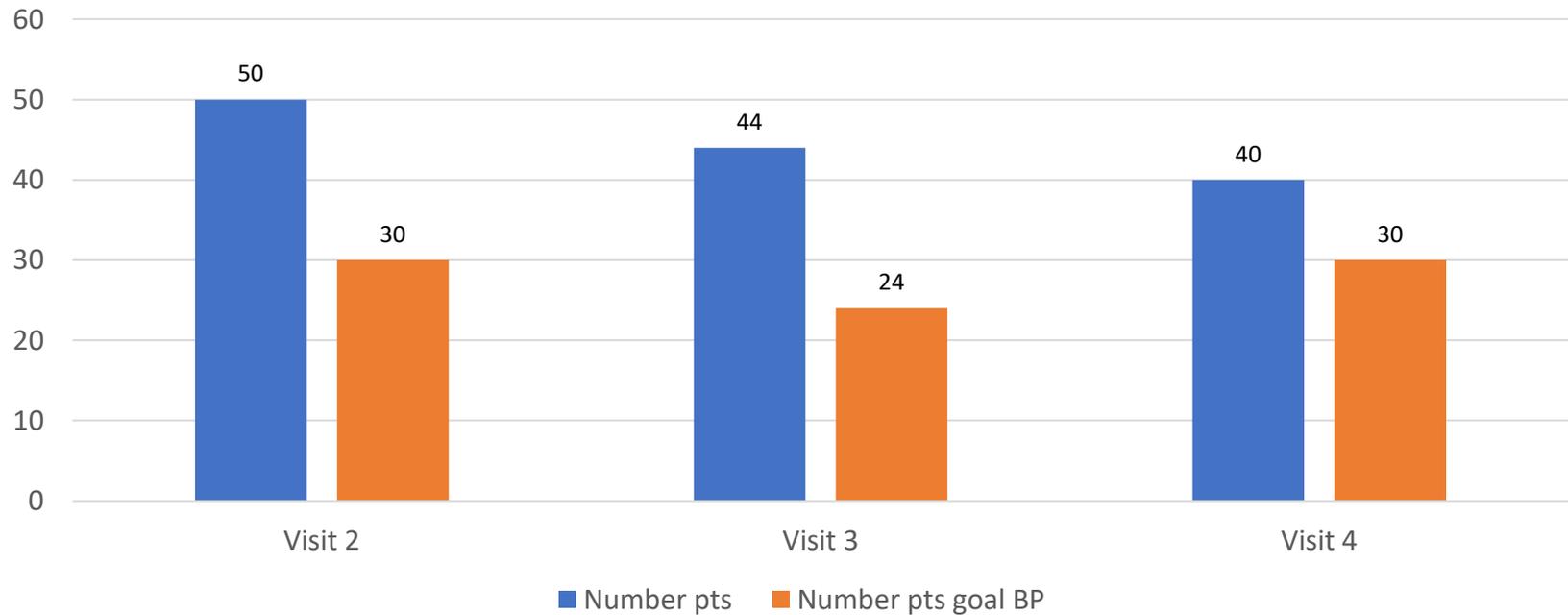
Engagement Over Time - by race/ethnicity



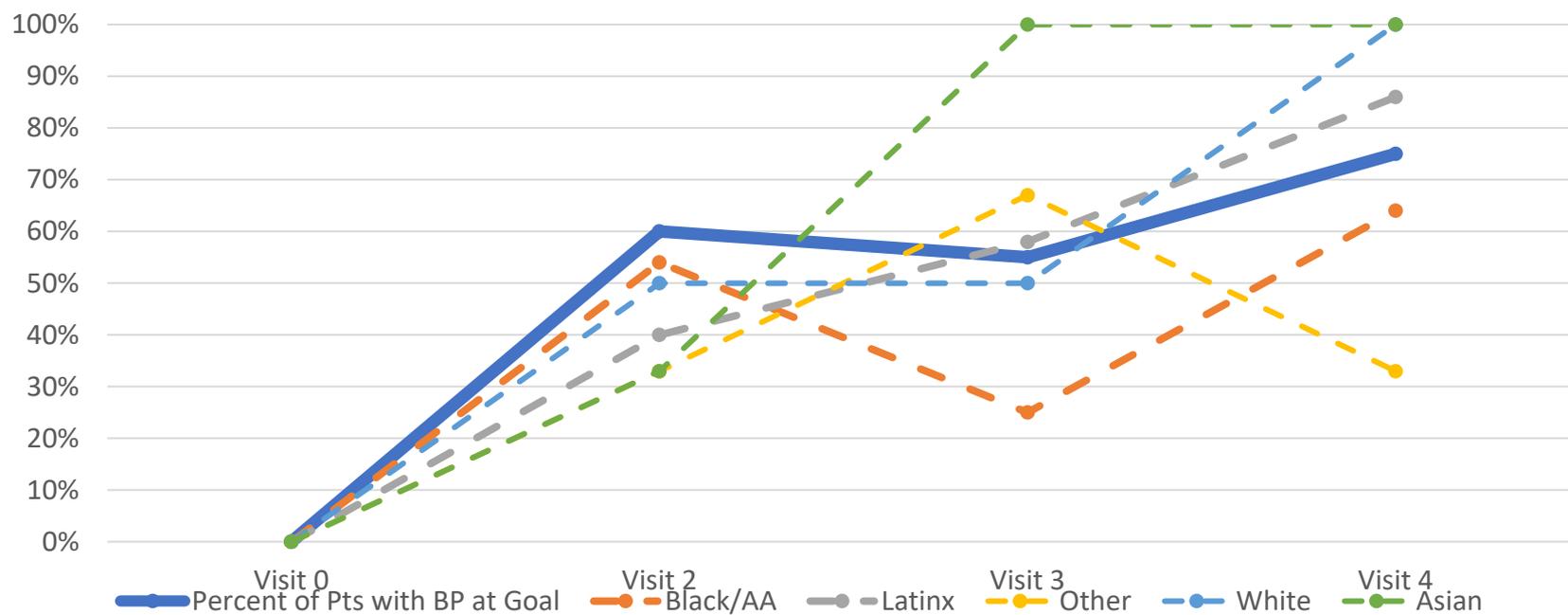
Blood Pressure Control Over Time



Patients with BP under Control



BP Control Over Time – Race/Ethnicity



Bright Spots

- Achieved a higher rate of BP control than expected
- Patients were grateful for receipt of BP Cuffs
- All members of the care team (MA, RN, PharmD, LVN) were responsible and successful in engaging the patient
- Re-emphasized the importance of BP review along with DM data by our chronic care staff
- Reinforced RN autonomy with BP medication titration



Challenges/Areas for Improvement



- Long delays getting blood pressure cuffs via insurance plans
- Patients often didn't want to come in for an in-person appointment
- Differential effect on engagement and BP control by race/ethnicity
- DM management during appointment sometimes took precedence over SMBP education



NEXT STEPS

- Work with Health Plans to stock BP cuffs in clinic
- Distribute BP cuffs to all patients presenting for an in-person RN BP check
- Narrow race/ethnicity effect gap noted during pilot
- Will provide education to all providers that reinforces patient use of self monitoring BP at home and in-between visits.

Questions

&

Answers





Virtual Care Innovation Network

A Community Health Collaborative Founded by Kaiser Permanente

DEADLINE EXTENSION! APPLY BY JANUARY 13, 2021

To learn more, go to:

<https://www.careinnovations.org/virtual-care-2020/>

Thank You

- The recording and materials from today's webinar will be made available on CCI's website

