

A Model for Engaging Patients with Hypertension in Self-Measured Blood Pressure Monitoring

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Overview

Scientific evidence supports the use of self-measured blood pressure monitoring (SMBP) for patients with hypertension. Many Community Health Centers (CHC) are interested in engaging patients in their care by starting a SMBP program. While many educational tools are available, there is a lack of information from patients at CHC on their needs associated with managing their hypertension and a set of evidence based materials for use in a SMBP program. A human centered approach was used to partner with patients and care teams using the tool of co-design to develop materials for a SMBP pilot program.

This pilot program included a partnership between a consortia (Health Quality Partners, a subsidiary of Health Center Partners of Southern California), a funder (Center for Care Innovations), two Southern California community health centers, and patients diagnosed with hypertension.



Why Co-Design Sessions?

- Co-design sessions are a tool used to:
- create an active partnership with patients.
 - challenge assumptions.
 - assist with learning what matters to patients and hearing it from them directly.
 - partner with individuals to identify/solve problems.

More information on human-centered design can be found at <http://www.careinnovations.org>.

- Co-design sessions were conducted with hypertensive patients to:
- understand their perspective and include their feedback in the design of program materials and;
 - procedures needed to take their own blood pressure, understand their readings, and document and act on their results.

Summary of Co-Design Sessions Conducted

Methods / Activities	Co-Design Sessions with CHC Care Coordination Teams	Co-Design Sessions with CHC Patients
Target Participants	2 CHCs with a large number of HTN patients and prior experience with management approaches	CHC patients with hypertension
Selection of Co-Design Partners	<ul style="list-style-type: none">Champion PhysiciansPanel ManagerQM & Population Health DirectorsCare Team members (MAS, Site Coordinator, Health Educators)	<ul style="list-style-type: none">CHCs ran reports to select patients based on HTN & past visit criteria.Site Coordinator or HE contacted patients by phone using a HQP / CCI recruitment guide.gift card provided (\$15).
Content	<p>Initial Sessions:</p> <ul style="list-style-type: none">patient centered design approachexperience with HTN issues, programspatient feedback/issuesinfrastructure <p>Subsequent Sessions:</p> <ul style="list-style-type: none">logisticsfeedback on pilot materialsdevelop protocols/procedures	<p>Initial Sessions:</p> <ul style="list-style-type: none">approaches to get to know the patient as a person, what's important to them, experience with HTN management <p>Subsequent Sessions:</p> <ul style="list-style-type: none">prototyped a SMBP programdesign of / input on materials

Patient Materials Developed Based on Co-Designs

Understanding Blood Pressure Numbers

Systolic:
The upper number, which is also the higher of the two numbers, measures the pressure in the arteries when the heart beats (when the heart muscle contracts).

Diastolic:
The lower number, which is also the smaller of the two numbers, measures the pressure in the arteries between heartbeats (when the heart muscle is resting between beats and refilling with blood).

One in three U. S. adults has high blood pressure. Your blood pressure rises with each heartbeat and falls when your heart relaxes between beats. Blood pressure can change from minute to minute with changes in posture, exercise, stress or sleep. For an adult age 20 or over, your upper (systolic) number should be less than 120, and your lower (diastolic) number should be less than 80.

Normal range less than **120** / less than **80**

This blood pressure chart reflects categories defined by the American Heart Association.

Blood Pressure Category	Systolic (upper #)	and	Diastolic (lower #)
Normal	less than 120	and	less than 80
Prehypertension	120 – 139	or	80 – 89
High Blood Pressure (Hypertension) Stage 1	140 – 159	or	90 – 99
High Blood Pressure (Hypertension) Stage 2	160 or higher	or	100 or higher
Hypertensive Crisis	Higher than 180	or	Higher than 110

Call your doctor or if it is after hours go to the Emergency Room

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How Do I Take My Blood Pressure?

Below are some reminders of how to prepare and get started on taking your blood pressure. Please refer to the instructions that came with your blood pressure monitor on how to use the device.

Within 30 Minutes of taking your Blood Pressure

Do Not:

- Eat a large meal
- Smoke
- Exercise
- Take decongestants
- Have caffeine

These will cause your blood pressure to go up.

Getting Started

Do the following steps:

- Empty bladder first
- Take a seat
- Support your back
- Don't have a conversation
- Support your arm at heart level
- Keep legs uncrossed
- Keep your feet flat
- Put cuff on bare arm

Now that you are comfortably seated:

- Apply the cuff securely on the upper part of your arm. The cuff should be 1/2 inch or 2 fingers above the crease of the elbow.
- Push the start button to begin taking your blood pressure.
- When the machine stops, write down the upper and lower blood pressure numbers on your blood pressure log.
- Wait one minute and then repeat. Always check your blood pressure twice, one minute apart, then write down the numbers on your blood pressure log. Take your two blood pressure readings once in the morning and once in the evening for the next 14 days.

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Monitoring Blood Pressure Action Plan

Name: _____ Doctor: _____ Date: ____/____/____

If you have any questions call: _____

My blood pressure medication: _____

Notes: _____

For a NORMAL BLOOD PRESSURE reading:
The UPPER NUMBER should be LESS THAN 120
and the LOWER NUMBER should be LESS THAN 80

The following is an action plan for when your blood pressure reading is outside of this normal range.

TOO LOW: Watch It	
Blood Pressure Readings	Recommended Actions:
Equal or less than 90	• Wait an hour and retake your blood pressure.
Equal or less than 60	• Do not take your blood pressure medication, if you haven't already, when your blood pressure reading is less than 90/60.
	• You may be dehydrated! Drink plenty of non-alcoholic fluids and increase your salt intake.
	• If your blood pressure is still low several hours later, call your doctor. You may need to be seen urgently.
	• Your blood pressure is too low
	CALL 9-1-1 if you feel like you are going to pass out, have chest pain, or have difficulty speaking.

BETTER: Make Lifestyle Changes	
Blood Pressure Readings	Recommended Actions:
120-139	• Make lifestyle changes that reduce blood pressure.
80-89	• Get plenty of exercise. Try to get at least 30 minutes a day.
	• Have less alcohol. Women: limit to 1 drink per day. Men: limit to 2 drinks per day (1 drink equals 1 1/2 ounces of hard alcohol, 5 ounces of wine, and 12 ounces of beer)
	• Keep your weight down. Try eating smaller portions.
	• Use spices, not salt to add flavor and limit your salt intake.
	• Don't smoke. If you smoke, get help to quit.

See the back side

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Monitoring Blood Pressure Action Plan

Name: _____ Doctor: _____ Date: ____/____/____

If you have any questions call: _____

My blood pressure medication: _____

Notes: _____

For a NOT GOOD: High Blood Pressure (Hypertension) Stage 1

Blood Pressure Readings	Recommended Actions:
140-159	• Continue to make lifestyle changes.
90-99	• If you are on a medication keep taking it every day as your doctor prescribed.
	• Your blood pressure is considered under control when the upper (systolic) number is less than 140 AND the lower (diastolic) number is less than 90.

NOT GOOD: Your blood pressure is high

For a BAD: High Blood Pressure (Hypertension) Stage 2

Blood Pressure Readings	Recommended Actions:
160 or above	• Your blood pressure may be raised and one or two readings may be high.
100 or above	• If your blood pressure stays 160/100 or above, make an appointment with your doctor in the next few days.
	• Think of what may have caused your blood pressure to increase.
	• When you are angry, stressed or in pain your blood pressure increases.
	• If you know what it was, take action to alter what has taken place and take your blood pressure an hour later.

BAD: Your blood pressure is very high

For a DANGER: Seek Medical Attention (Hypertensive Crises)

Blood Pressure Readings	Recommended Actions:
180 or above	• Stay calm and try some relaxation techniques.
110 or above	• Just sitting still and thinking about your breathing can help calm you down. Notify your physician within the next couple of days.
	• If your blood pressure is higher 180/110 and you are NOT experiencing symptoms such as chest pain, shortness of breath, back pain, numbness/weakness, changes in vision or difficulty speaking, wait about five minutes and take it again.

DANGER: Your blood pressure is dangerously high

If you ARE experiencing any of those symptoms AND your reading is still at or above that level, you should CALL 9-1-1 and get help immediately.

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Self-Measured Blood Pressure Log

Name: _____ My Blood Pressure Goal: _____

Take your blood pressure two times a day, once in the morning and once in the evening.

Take two blood pressures each time you take your blood pressure and write them down on this log. Wait at least one minute between each time.

Write anything that might have affected your blood pressure in the comment section. (for example, are you angry; just had coffee; full bladder)

MORNING				EVENING			
Date/Time	#1	#2	Comment	Date/Time	#1	#2	Comment
10/01/16 10AM	130/72	125/70	Feeling good	10/01/16 8PM	155/89	130/68	Family stress

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Note: Materials developed and used in our pilot do not incorporate the blood pressure readings considered "normal" specifically for Self-Measured Blood Pressure.

Care Team Materials

- Materials for managing and tracking self-measured blood pressure monitoring (SMBP) among patients with hypertension were developed and used during the pilot program. These included:
- Recruitment protocols / reports
 - Pilot consent form
 - Checklists for care team members to use during all patient encounters (orientation session, follow-up call and visit)
 - Blood pressure (BP) reading log

SMBP Pilot Summary

A 17-day pilot program was conducted with 39 CHC patients that had hypertension using the materials developed through the co-design sessions. The pilot included: (1) an orientation session on Day 1 with each patient and a care team member (consent form signed, SMBP materials & resources distributed, BP monitor provided with demonstration); and (2) a follow-up phone call (Day 8) and visit (Day 17). BP was self-measured by the patient for 14 days with instructions to follow a protocol of two readings in the morning and evening that are one minute apart.

Outcomes of SMBP Pilot

- Thirty-nine patients began the pilot. Of these,
- 35 (89.7%) finished all activities.
 - 6 (17.1%) had improved BP during the 14 day period.
 - 14 (40%) followed the BP protocol of two readings in the AM and PM on all days.
 - 22 (62.9%) recorded their BP seven or more days at least once in the morning and evening.
- Patients indicated they:
- liked the program & materials.
 - learned about behaviors/things that impacted their BP.
 - liked the care team member involvement and support.
 - enjoyed being heard in the co-design sessions.

Next Steps

While the pilot sample was small, it showed promise for offering a SMBP program to patients within CHC and using co-design as a method of patient engagement. Future work in this area is needed to address resources for providing BP monitors, billing, and inclusion of SMBP data in CHC electronic medical records.

For more information, please contact:

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