



# BC Renal Tools to Support Home Blood Pressure Monitoring

# Acknowledgements

The BC Kidney Care Committee Home Blood Pressure Monitoring Working Group

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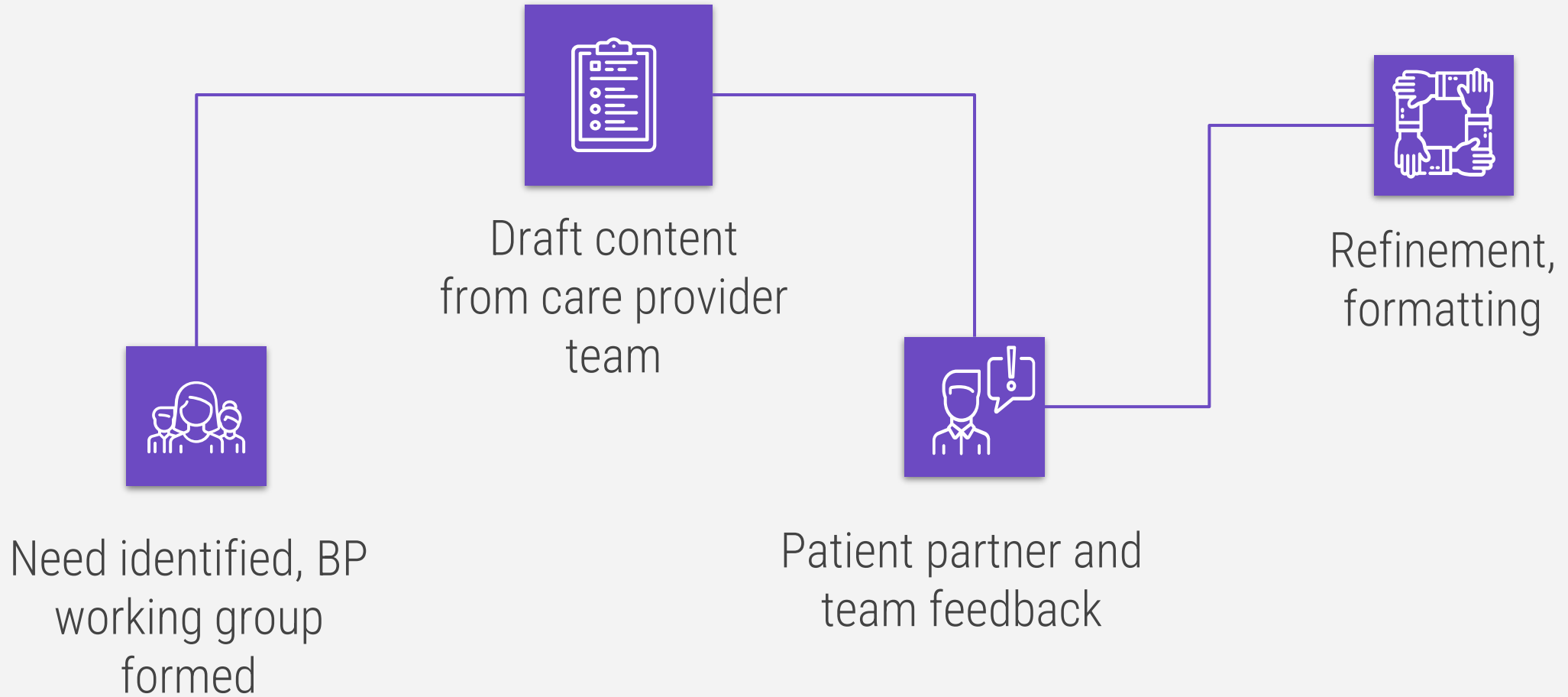
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# Resource Development



# Complementary staff and patient tools

## Taking Your Blood Pressure at Home



### What is blood pressure and why is it important?

Blood pressure is a measure of how hard the blood pushes against the walls of your arteries as it moves through your body. This force makes blood flow possible, delivering nutrients and oxygen to organs and tissues throughout the body.<sup>1,2</sup>



Your blood pressure reading is based on two numbers:<sup>3</sup>

- 1. Systolic blood pressure (first or top number):** tells how much pressure your blood is exerting against your artery walls when the heart beats
- 2. Diastolic blood pressure (second or bottom number):** tells how much pressure your blood is exerting against your



## BC Kidney Care Guideline: Supporting Home Blood Pressure Monitoring

Mar 31, 2021

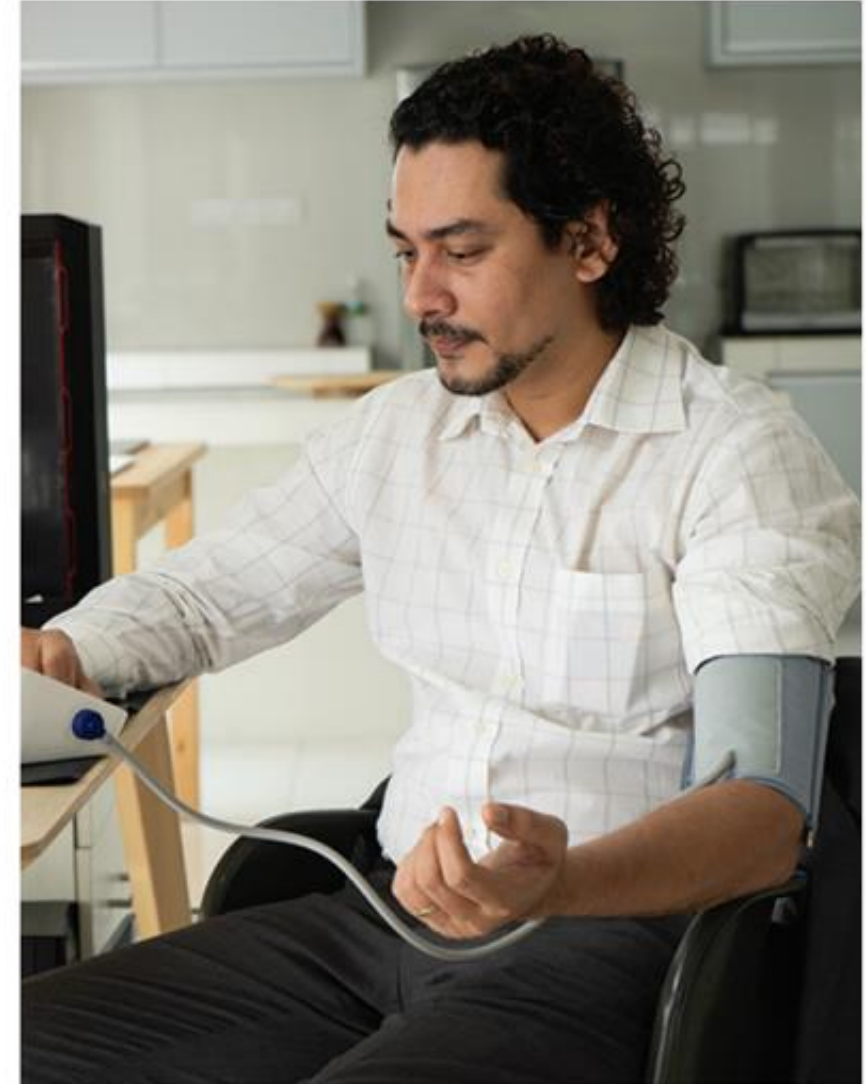
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## Content of the guides

This guideline provides recommendations on:

- (a) Patients appropriate for home BP monitoring
- (b) Purchasing a BP device
- (c) Educating patients on taking and recording their BP
- (d) Checking the BP device
- (e) Frequency and timing of taking BP
- (f) Follow-up of out-of-range readings



## Target population

Most patients with chronic kidney disease can also benefit from monitoring their BP at home assuming they are willing and able to take their own BP or have a care giver who can take their BP

That is, **everyone!**

KCC patients who are a **priority** for home BP monitoring include:

- Patients who have chronic kidney disease (CKD); AND
- Hypertension or concerns about their BP; AND
- Are willing and able to take their own BP or have a care giver who can take their BP



# Purchasing the right machine

- Hypertension Canada ratings
- Finding the right cuff (size and shape)
- Situations for those with special needs
- Financial considerations

4. It is important that the cuff fit properly (to prevent under or over estimation of the BP).

Measure the patient's arm circumference (in the middle of the upper arm at the midpoint between the shoulder and elbow).

- a. Multiply by 40% to get the right width of the bladder cuff.
- b. Multiply by 80% to get the right length of the bladder cuff (bladder length should cover 80% - 100% of arm circumference).



<https://targetbp.org/patient-measured-bp/implementing/smbp-selecting-the-right-cuff-size/>

[https://www.uptodate.com/contents/definition-and-diagnosis-of-hypertension-in-children-and-adolescents?search=blood%20pressure%20cuff%20size&source=search\\_result&selectedTitle=2~150&usage\\_type=default&display\\_rank=2#H12](https://www.uptodate.com/contents/definition-and-diagnosis-of-hypertension-in-children-and-adolescents?search=blood%20pressure%20cuff%20size&source=search_result&selectedTitle=2~150&usage_type=default&display_rank=2#H12)

For larger arms that are significantly wider near the shoulder than the elbow, consider a cone-shaped or "contour" cuff (specialized cuffs are more expensive than standard cuffs). Standard cylindrical cuffs can produce inaccurate measurements.<sup>5</sup>



Recommended by  
Recommandé par  
**Hypertension Canada**  
Gold | Or



Recommended by  
Recommandé par  
**Hypertension Canada**  
Silver | Argent

# Measuring and recording BP

## BLOOD PRESSURE MEASUREMENT

### When you measure your blood pressure:

- ✓ Sitting position
- ✓ Back supported
- ✓ Arm bare and supported
- ✓ Use a cuff size appropriate for your arm
- ✓ Middle of the cuff at heart level
- ✓ Apply cuff according to manufacturer's instructions
- ✓ Do not talk or move before or during the measurement
- ✓ Legs uncrossed
- ✓ Feet flat on the floor



### When should I take the readings?

- ✓ Before breakfast and 2 hours after dinner
- ✓ After emptying bladder and bowel if needed
- ✓ No tobacco, no caffeine in the hour before
- ✓ Before taking your medication
- ✓ After a 5 minute rest
- ✓ No exercise 30 minutes before

### What device should I use?

- ✓ Electronic device that is validated as accurate
  - See Hypertension Canada's Recommended devices at [hypertension.ca](http://hypertension.ca)
  - Ask your pharmacist for an appropriate cuff size
  - Devices that carry the logos to the right



- Step by step instructions, links to videos
- Link to the excellent Hypertension Canada resources

Date		Time	Comments	Heart Rate (beats/min)	BP Reading #1		BP Reading #2	
					Systolic	Diastolic	Systolic	Diastolic
June 15	Sample Morning	8:00 a.m.	Meds at 9 a.m.		138	82	135	80
	Sample Evening	8:00 p.m.	Upset		157	92	154	90
	Day 1 Morning							
	Day 1 Evening							
	Day 2 Morning							
	Day 2 Evening							



# Calibrating (Read: **Checking**) the BP machine

- Staff guide gives situations to check a patient's machine

AND

- Instructions, what is deemed acceptable

## Checking your blood pressure monitor



It is important to have your device checked to make sure it is measuring your blood pressure accurately. Take it to your doctor's office, kidney care clinic or community pharmacy.

The doctor, nurse or pharmacist will compare the measurement taken on your device with the measurement taken on the device in the office/clinic/ pharmacy. Readings don't have to match exactly. Your health care provider will tell you if it is working properly.

Take your device to be checked:

- Before you use it the first time; and
- At least once per year (more if the manufacturer recommends); and
- If it gets dropped or damaged



## Blood pressure target:

My blood pressure target is:

---

Date:

---

## Establishing a BP target

- All KCC patients should have an individualized BP target
  - The nephrologist or NP can help set this
- I think this is the most important step in this whole document
- Individualized and also periodically reviewed

## What do I do if my blood pressure is out of range (low or high)?

Different people have different blood pressure targets depending on their health conditions and other factors. Your exact target should be discussed with your kidney care team. This target may change over time. If you are recovering from a serious illness or hospitalization, ask your care team to review your target.



### When to contact your kidney care team or primary care provider:

If your blood pressure is less than 10 mm Hg above or below target (top or bottom number) over several readings and days, bring this up at your next appointment with your kidney care team or primary care provider.

If your blood pressure is more than 10 mm Hg above or below target (top or bottom number) over several readings and days, contact your kidney care team or primary care provider. Do not wait for your next appointment.

## Follow up of out of range values

The next most important part!

- If you get an unusually high or low reading, wait 5 minutes and test again.

## Implementation plan

- Resource development
- 'Demo' BP monitors (Thank you KFoC!!)
- Staff and clinic prep
- Roll out
  - Existing patients
  - New patients
- Monitoring and refinement
- Evaluation





## Evaluation Plan: Home Blood Pressure Monitoring Initiative

### BC's Kidney Care Clinics

DRAFT Apr 7, 2021

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A close-up of the LEGO character Emmet from 'The LEGO Movie'. He is a yellow minifigure with brown hair, wearing an orange and white striped shirt with a blue tie. He is holding a blue tool. The background is a colorful, stylized cityscape.

**EVERYTHING  
IS AWESOME,  
EVERYTHING  
IS COOL WHEN  
YOU'RE PART  
OF A TEAM.**

Emmet

THE LEGO MOVIE

## Thank You!!

- Dr. Mangat for sharing your expertise!
- KCC Home BP Monitoring Working Group
- All of you for attending!