

Children's Mercy Kansas City

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Care Process Models

Quality Improvement and Clinical Safety

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2-2018

### Hypertension-Inpatient

Children's Mercy Kansas City

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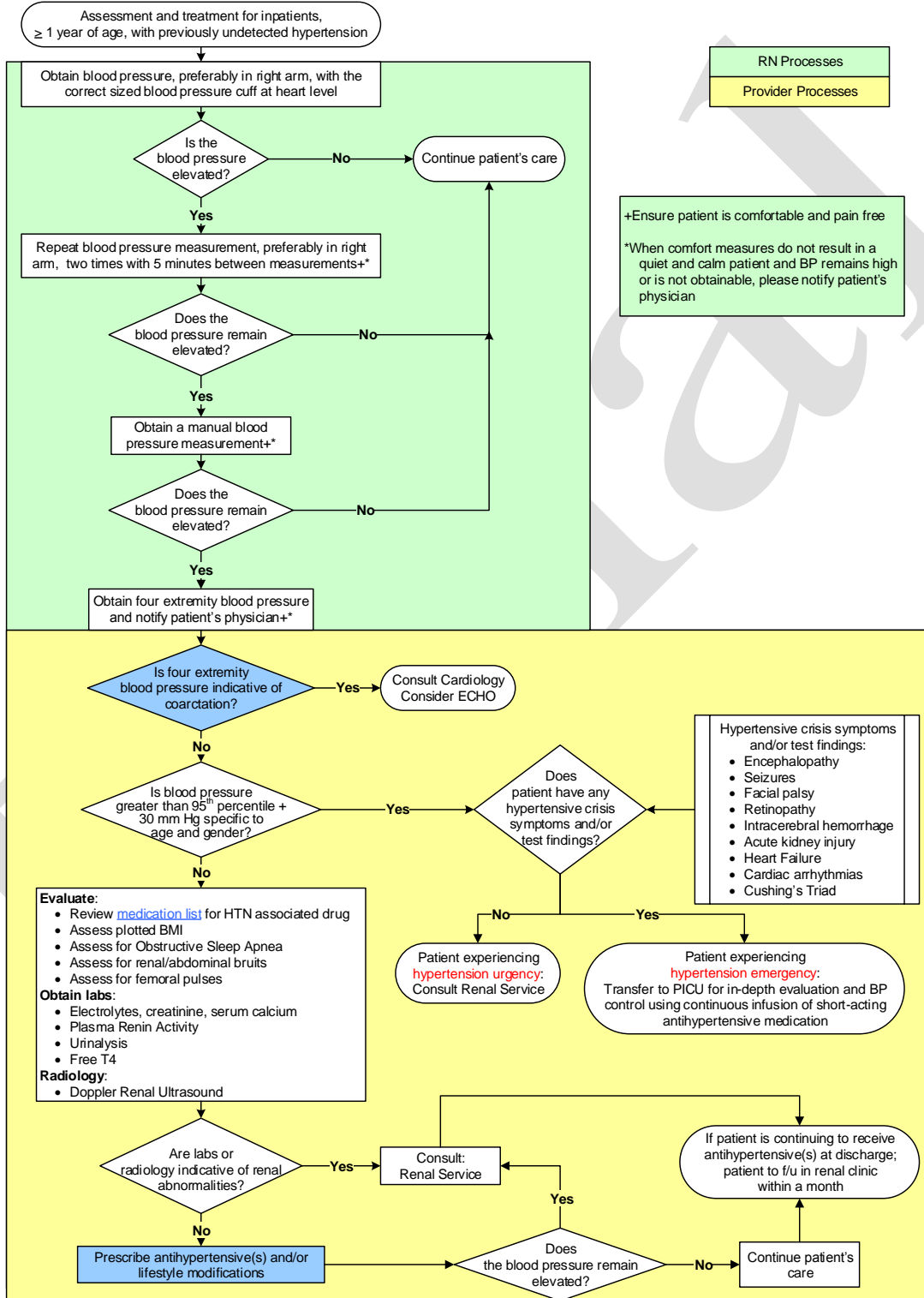
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These guidelines do not establish a standard of care to be followed in every case. It is recognized that each case is different and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare guidelines for each. Accordingly, these guidelines should guide care with the understanding that departures from them may be required at times.

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### Children's Mercy Hospitals and Clinics Evidence Based Practice Care Process Model

#### Care of the Inpatient > 1 year of age with Previously Undetected Hypertension



**Definition:** Hypertension is defined as average SBP and/or diastolic BP (DBP) that is  $\geq 95$ th percentile for gender, age, and height on  $\geq 3$  occasions. In children  $\geq 13$  years of age, hypertension is defined as a SBP and/or DBP this is  $\geq 130/80$  mmHg (Flynn et al., 2017)

**Objective of Care Process Model:** Update clinicians on initial diagnostic measures and therapy prior to consulting with the Nephrology sub-specialty. This update will improve health outcomes in children found to have undiagnosed hypertension by establishing a diagnosis, initiation of treatment and proper follow up with the appropriate subspecialty service at discharge

**Target Users:** Providers and staff nurses caring for medical inpatients who have been found to be hypertensive after more than, or equal to, three occasions.

**Guideline Inclusion Criteria:**

- $\geq 1$  year of age
- Has not been previously diagnosed with hypertension
- Medical patient

**Guideline Exclusion Criteria:**

- $< 1$  year of age
- Surgical, emergency, or critical care patient

**Practice Recommendations:** The team accepted the blood pressure parameters that were reported in *Clinical Practice Guidelines for Screening and Management of High Blood Pressure in Children and Adolescents* (Flynn et al., 2017).

**Outcome Measures (based on primary diagnosis of hypertension):**

1. Failure to recognize hypertension (if blood pressure is greater than the 99 percentile, was another blood pressure obtained within 60 minutes?)
2. Time initial hypertensive episode until time physician called?
3. Use of Hypertension Workup power plan
4. Number of renal consults that have hypertension as reason
5. Count of amLODIPine ordered
6. Count of other anti-hypertensive medications ordered.
7. Did the patient receive a follow up appointment in the Renal Clinic prior to discharge?
8. Once the patient is established to have a diagnosis of hypertension suspected to be of renal etiology, did the patient attend their appointment in the Renal Clinic?
9. Adverse drug reaction documented on amLODIPine within three months of drug initiation.
10. Blood Pressure education completed.

**Potential Cost Implications:**

- Patient savings related to a decrease in renal consults
- Early recognition and management of hypertension

**Potential Organizational Barriers:**

- Inability to obtain correctly sized blood pressure equipment
- Inability to perform a blood pressure using a sphygmomanometer

**Supporting tools:**

- **Power plan**
  - Hypertension Workup

Hypertension Workup (Planned Pending)		
Vital Signs/Monitoring		
<input checked="" type="checkbox"/>	Blood Pressure	T;N, q4hr
Nursing		
	Review medication list for drugs associated with HTN	
	Review documentation for lifestyle/diet changes when necessary	
Consults/Therapy		
<input checked="" type="checkbox"/>	Consult to Nephrology	Routine, Reason for Consult: Hypertension
<input checked="" type="checkbox"/>	Consult to Nutrition (Dietitian only)	Select an order sentence
<input checked="" type="checkbox"/>	Consult to Cardiology	
<input checked="" type="checkbox"/>	Echocardiogram - Complete	Reason for echo: Other: Use Order Comments tab, Nurse to contact Cardiology to schedule **Reason for echo: Hypertension; Calculate LVMI to 2.7m2
Laboratory		
<input checked="" type="checkbox"/>	Basic Metabolic Panel	Blood
<input checked="" type="checkbox"/>	Renin Activity	Blood
<input checked="" type="checkbox"/>	Urinalysis (Urinalysis & Microscopic if UA pos (No Culture))	
<input checked="" type="checkbox"/>	Free T4	Blood
Radiology		
<input checked="" type="checkbox"/>	US Renal/Renal Doppler (Renal/Renal Doppler US)	Routine, Reason: Hypertension
Medications		
<input checked="" type="checkbox"/>	amLODIPine	0.1 mg/kg, PO, qDay
Miscellaneous		
<input checked="" type="checkbox"/>	Clinic Referral	Kidney Center - Hypertension
<input checked="" type="checkbox"/>	Clinic Referral	PHIT/Wt Mnqmt/Obesity

- **Mosby's Skill**
  - [Heart Rate and Blood Pressure Measurement \(Pediatric\)](#)
- **Educational tools**
  - [Home Monitoring of Blood Pressure](#)

**Care Process Preparation:** This care process was prepared by The Office of Evidence Based Practice (EBP) in collaboration with content experts at Children's Mercy Hospitals and Clinics. Development of this care process supports the Department of Clinical Effectiveness's initiative to promote care standardization that builds a culture of quality and safety that is evidenced by measured outcomes. If a conflict of interest is identified the conflict will be disclosed next to the team members name.

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**Approval Process:** Care processes are reviewed and approved by Content Expert Team, the Office of EBP, and other appropriate hospital committees as deemed suitable for the guidelines intended use. Care processes are reviewed and updated as necessary every 3 years within the Office of EBP at CMH&C. Content expert teams will be involved with every review and update.

**Disclaimer:**

The content experts and the Office of EBP are aware of the controversies surrounding care process models. When evidence is lacking or inconclusive, options in care are provided in the document and the power plans that accompany the guideline.

These guidelines do not establish a standard of care to be followed in every case. It is recognized that each case is different and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time.

It is impossible to anticipate all possible situations that may exist and to prepare guidelines for each. Accordingly these guidelines should guide care with the understanding that departures from them may be required at times.

## References

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