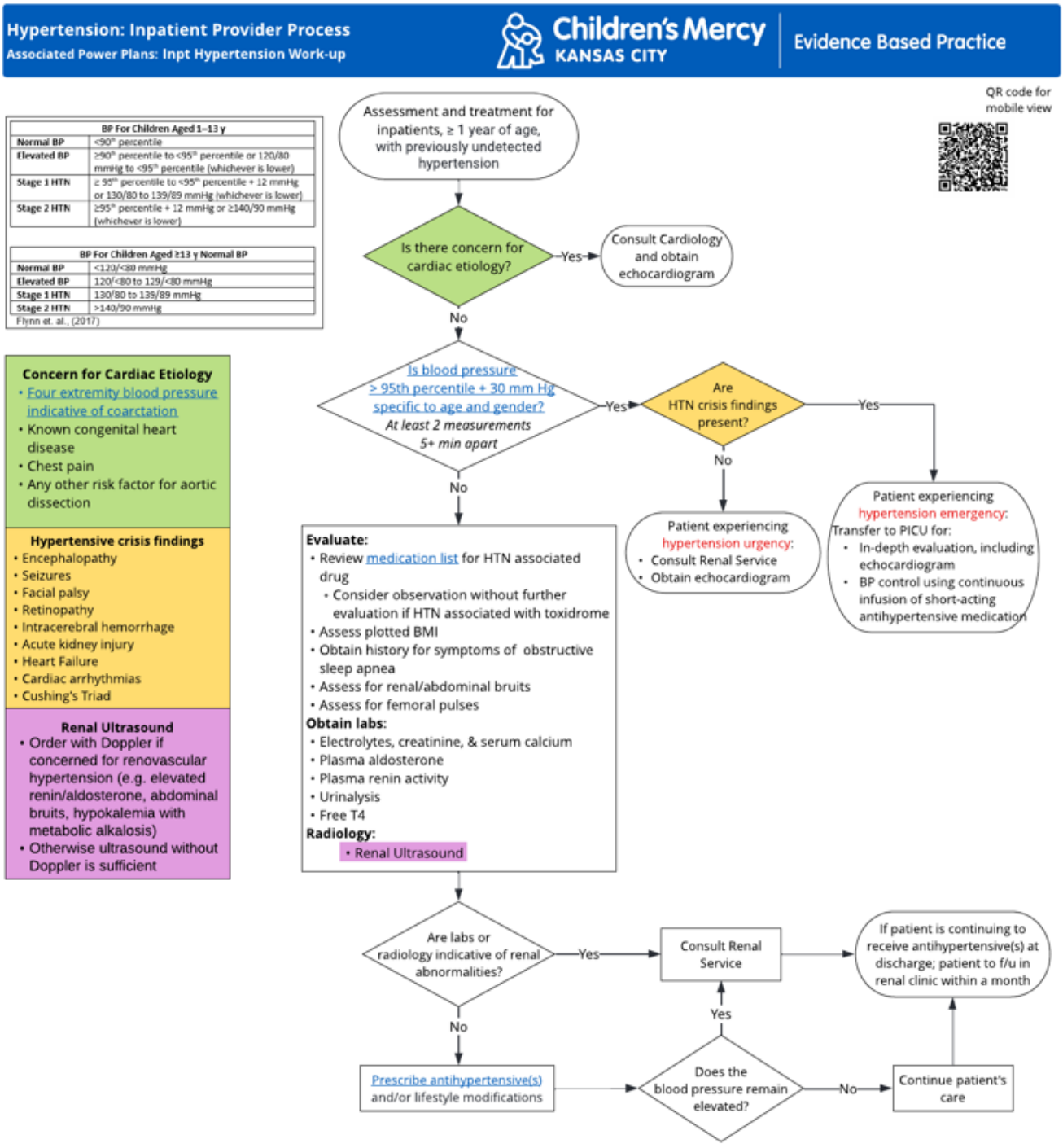
Hypertension Inpatient
Clinical Pathway Synopsis



These products 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 products should guide care with the understanding that departures from them may be required at times.

Hypertension: Inpatient Nursing Process

Associated Power Plans: Inpt Hypertension Work-up

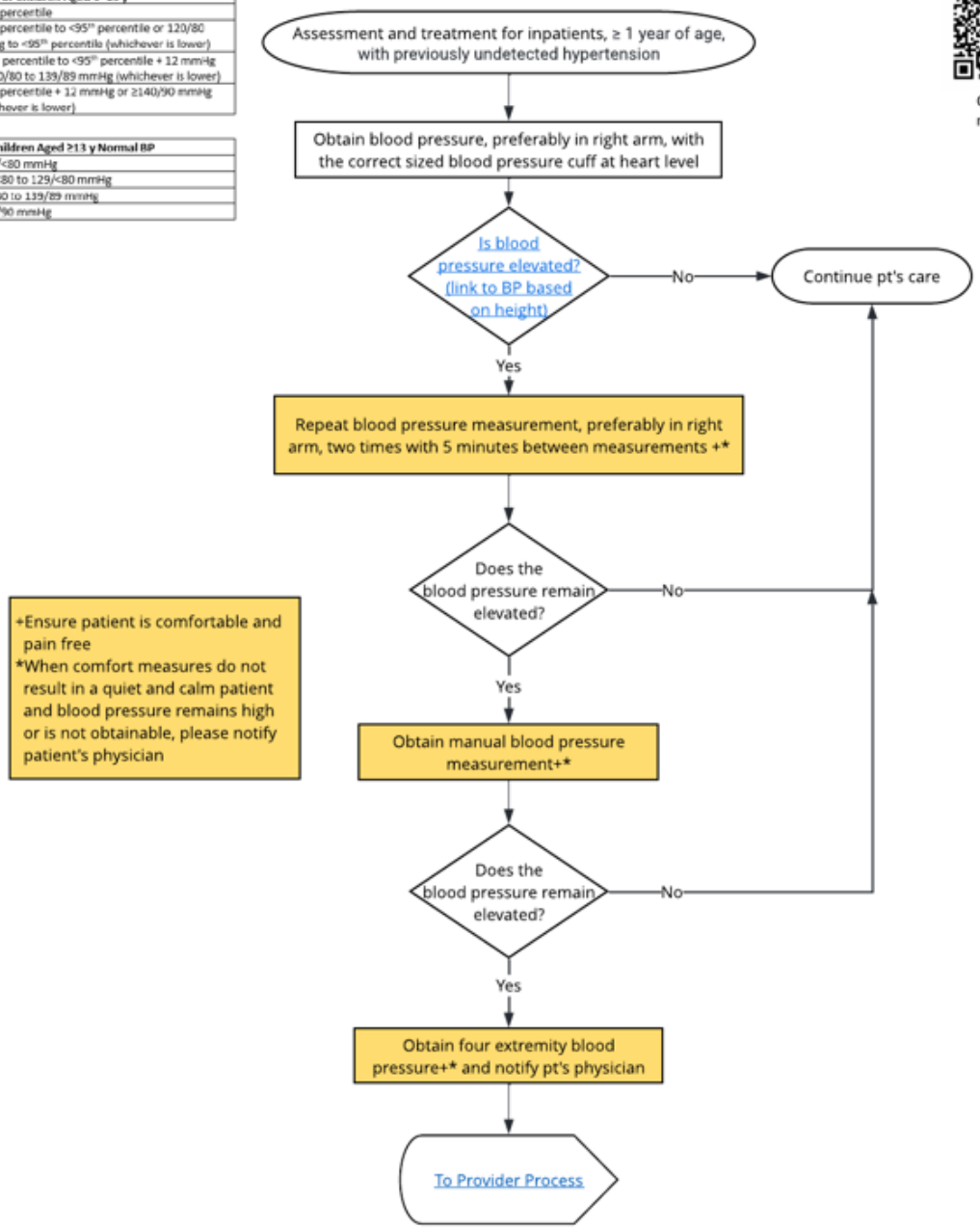
Children's Mercy KANSAS CITY | Evidence Based Practice

BP For Children Aged 1–13 y	
Normal BP	<90th percentile
Elevated BP	≥90th percentile to <95th percentile or 120/80 mmHg to <95th percentile (whichever is lower)
Stage 1 HTN	≥ 95th percentile to <95th percentile + 12 mmHg or 130/80 to 139/89 mmHg (whichever is lower)
Stage 2 HTN	≥95th percentile + 12 mmHg or ≥140/90 mmHg (whichever is lower)

BP For Children Aged ≥13 y Normal BP	
Normal BP	<120/<80 mmHg
Elevated BP	120/<80 to 129/<80 mmHg
Stage 1 HTN	130/80 to 139/89 mmHg
Stage 2 HTN	>140/90 mmHg

Flynn et. al., (2017)

QR code for mobile view



Objective of Guideline

Update clinicians on initial diagnostic measures and therapy prior to consulting with the Nephrology sub-specialty. This update will improve health outcomes in children with previously undiagnosed hypertension by establishing a pathway for diagnosis, initiation of treatment, and proper follow-up.

Definition

Hypertension is defined as average systolic blood pressure (SBP) and/or diastolic blood pressure (DBP) that is ≥ 95th percentile for gender, age, and height on ≥ 3 occasions. In children ≥ 13 years of age, hypertension is defined as an SBP and/or DBP ≥ 130/80 mmHg (Flynn et al., 2017).

Target Users

- Providers and staff nurses caring for hospitalized patients who have been found to have elevated blood pressure after more than, or equal to, three measures.

Target Population

Inclusion Criteria

- ≥ 1 year of age
- No prior diagnosed of hypertension
- Currently admitted to a medical inpatient unit

Exclusion Criteria

- < 1 year of age
- Admitted to a surgical service or intensive care unit

AGREE II

The AAP national guideline that provided guidance to the Hypertension committee (Flynn et al., 2017). See Table 1 for AGREE II.

Table 1

AGREE II[a] Summary for the Guideline Author (Flynn et al., 2017)

Domain	Percent Agreement	Percent Justification^
Scope and purpose	100%	The aim of the guideline, the clinical questions posed and target populations **were** identified.
Stakeholder involvement	87%	The guideline **was developed** by the appropriate stakeholders and represents the views of its intended users.
Rigor of development	88%	The process used to gather and synthesize the evidence, the methods to formulate the recommendations and to update the guidelines **were** explicitly stated.
Clarity and presentation	100%	The guideline recommendations **are** clear, unambiguous, and easily identified; in addition, different management options are presented.
Applicability	97%	Barriers and facilitators to implementation, strategies to improve utilization and resource implications **were addressed** in the guideline.
Editorial independence	100%	The recommendations **were not** biased with competing interests.

Note: Three EBP Scholars completed the AGREE II on this guideline.

Practice Recommendations

Please refer to the AAP Clinical Practice Guidelines for Screening and Management of High Blood Pressure in Children and Adolescents for full practice recommendations, evaluations, and treatment recommends (Flynn et al., 2017).

Additional Questions Posed by the CPG Committee
- No additional clinical questions were posed for this review

Measures:
- Frequency CPG is accessed on EBP website
- Use of Inpt Hypertension Workup Power Plan

Value Implications

The following improvements may increase value by reducing healthcare costs and non-monetary costs (e.g., missed school/work, loss of wagers, stress) for patients and families and reducing costs and resource utilization for healthcare facilities.
- Decreased in unwarranted variation in care
- Early recognition and management of hypertension
- High value utilization of subspecialty resources

Potential Organizational Barriers
- Inconsistent access to correctly sized blood pressure equipment
- Inconsistency in skills required to accurately obtain blood pressure using a sphygmomanometer

Potential Organizational Facilitators
- Standardized order set serving as decision support tool
- Collaboration among nursing staff, inpatient providers, and nephrologists

Diversity/Equity/Inclusion
- Our aim is to provide equitable care. These issues were discussed with the Committee, reviewed in the literature, and discussed prior to making any practice recommendations.

Power Plan
- Inpt Hypertension Work-up

Associated Policies
- None

Guideline Preparation

This product was prepared by the Evidence Based Practice (EBP) Department in collaboration with the Hypertension CPG Committee composed of content experts at Children's Mercy Kansas City. The development of this product supports the Quality Excellence and Safety initiative to promote care standardization that is evidenced by measured outcomes. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

Hypertension CPG Committee Members and Representation
- Doug Blowey, MD | Nephrology | Committee Chair
- Codi Cutburth, MSN, RN | Nursing | Committee Member
- Ali Felton-Church, MD, FAAP | Hospital Medicine | Committee Member
- Nathan Beins, MD, MHPE | Nephrology | Committee Member

EBP Team Members
- Kathleen Berg, MD, FAAP | Hospitalist, Evidence Based Practice
- Jarrod Dusin, MS, RD, LD, CPHQ | Evidence Based Practice

Guideline Development Funding

The development of this guideline was underwritten by the following departments:
- Evidence Based Practice

- Nephrology
- Hospital Medicine

Approval Process

- This product was reviewed and approved by the Hypertension Committee, content expert departments/divisions, and the EBP Department
- Products are reviewed and updated as necessary every 3 years within the EBP Department at CMKC. Content expert teams are involved with every review and update.

Approval Obtained

Department/Unit	Date Approved
Nephrology	3/2023
Hospital Medicine	3/2023
Medical Executive Committee	5/2023

Version History

Date	Comments
3/2023	Version one
10/2024	Version two – Inpatient Provider Process page updated to include question on concern for patients with cardiac etiology (this was not a full review of the pathway)

Date for Next Review

- May 2026

Disclaimer:

When evidence is lacking or inconclusive, options in care are provided in the guideline 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.

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References

Agarwala, B. N., Bacha, E., Cao, Q. L., & Hijazi, Z. M. (2015). Clinical manifestations and diagnosis of coarctation of the aorta. UpToDate. Post, T. W. (Ed), UpToDate, Waltham, MA.

Flynn, J. T., Kaelber, D. C., Baker-Smith, C. M., Blowey, D., Carroll, A. E., Daniels, S. R., . . . Urbina, E. M. (2017). Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. *Pediatrics*. doi:10.1542/peds.2017-1904