

Pediatric Hypertensive Emergency/Urgency

(ED, Inpatient)

INCLUSION CRITERIA

Age: 1-18 years old

- Age 1-13 years: BP > 95th percentile + 12 mmHg (see BP tables on the following page)¹ or >140/90 mmHg with symptoms. ******
- Age >13 years: >30mmHg above 95th percentile or >180/120 mmHg
- Consider Nephrology consult for patients with chronic hypertension

EXCLUSION CRITERIA

NICU patients or any patient with suspicion of pheochromocytoma (episodic headache, sweating, tachycardia, HTN)

START

Provider Assessment

- *Ensure cuff size is appropriate for patient's extremity
- *Ensure patient is calm when BP is checked

Symptomatic?

- Headache
- Visual changes
- Altered mental status
- Seizure
- Chest pain

** Additional Information **

- Patients should have height measured to determine BP percentile
- Labetalol contraindicated in patients with asthma, severe bradycardia, greater than 1st degree heart block. Also contraindicated in suspected pheochromocytoma
- Esmolol contraindicated in patients with asthma and heart failure

Evaluate for end-organ damage:

- Electrolytes
- BUN/Creatinine
- LFTs
- Urinalysis
- EKG
- Echocardiogram
- CXR
- Nephrology consult

- Establish IV access
- PICU evaluation
- IV Bolus: hydralazine (first line) or labetalol² ******
- Followed by continuous infusion: nicardipine (first line), esmolol² ******

CT head if hypertensive encephalopathy present:

- Electrolytes
- BUN/Cr
- LFTs
- Urinalysis
- EKG
- Echocardiogram
- CXR
- Renal ultrasound

Absent

Present

Fluid overload?

(pulmonary edema, positive fluid balance, increased weight)

Yes

Anuric at baseline?

Yes

No

Dialysis

Furosemide IV/PO

END

Goal Blood Pressure:

- <95th percentile for age/sex/height **IF NO** end-organ damage
- <90th percentile **IF** end-organ damage **present**
- Decrease BP...
 - 25% in first 8-12 hrs
 - another 25% in next 8-12 hrs
 - final 50% in the next 24 hrs

First line: isradipine PO
 Alternatives: clonidine PO, minoxidil PO, hydralazine PO

No

Evaluate for causes:

- Urine catecholamines
- Urine tox screen
- Plasma metanephrines
- Plasma renin and aldosterone
- Cortisol level
- Renal ultrasound with Doppler
- Serum lipid profile
- Serum C3 compliment
- Calcium, phosphorus, uric acid

Re-check blood pressure in 30 min. Improved?

Yes

No

Close MD monitoring. Recheck BP in 2hours, if continuing to improve, may return to q4h BP checks

Repeat oral dose x1. If still no response: Hydralazine IV, Labetalol IV

No response to two doses of IV anti-hypertensives? Refer to PICU for evaluation

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Appendix A

Medication	Dose
PO Isradipine	0.05-0.1 mg/kg per dose. Max 5 mg per dose.
PO Clonidine	0.05 mg-0.1 mg per dose. Max 0.8 mg total .
PO Minoxidil	0.1-0.2 mg/kg per dose
PO Hydralazine	0.25-1 mg/kg/dose, max 7.5 mg/kg/day
PO/IV Furosemide	1 mg/kg per dose
IV Hydralazine	0.1-0.6 mg/kg per dose. Max 1.7-3 mg/kg/day and 20 mg per dose.
IV Labetalol, bolus	0.2-1 mg/kg per dose, max 40 mg per dose
IV Labetalol, drip	0.2-3 mg/kg/hour
IV Esmolol	Bolus 100-500 mcg over one min, then 25-100 mcg/kg/min
IV Nicardipine	1-3 mcg/kg/min

BP Levels for Boys by Age and Height Percentile From the American Academy of Pediatrics

Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents (Flynn, et al.)

TABLE 4 BP Levels for Boys by Age and Height Percentile

Age (y)	BP Percentile	SBP (mmHg)							DBP (mmHg)						
		Height Percentile or Measured Height													
		5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%
1	Height (in)	30.4	30.8	31.6	32.4	33.3	34.1	34.6	30.4	30.8	31.6	32.4	33.3	34.1	34.6
	Height (cm)	77.2	78.3	80.2	82.4	84.6	86.7	87.9	77.2	78.3	80.2	82.4	84.6	86.7	87.9
	50th	85	85	86	86	87	88	88	40	40	40	41	41	42	42
	90th	98	99	99	100	100	101	101	52	52	53	53	54	54	54
	95th	102	102	103	103	104	105	105	54	54	55	55	56	57	57
2	95th + 12 mmHg	114	114	115	115	116	117	117	66	66	67	67	68	69	69
	Height (in)	33.9	34.4	35.3	36.3	37.3	38.2	38.8	33.9	34.4	35.3	36.3	37.3	38.2	38.8
	Height (cm)	86.1	87.4	89.6	92.1	94.7	97.1	98.5	86.1	87.4	89.6	92.1	94.7	97.1	98.5
	50th	87	87	88	89	89	90	91	43	43	44	44	45	46	46
	90th	100	100	101	102	103	103	104	55	55	56	56	57	58	58
3	95th	104	105	105	106	107	107	108	57	58	58	59	60	61	61
	95th + 12 mmHg	116	117	117	118	119	119	120	69	70	70	71	72	73	73
	Height (in)	36.4	37	37.9	39	40.1	41.1	41.7	36.4	37	37.9	39	40.1	41.1	41.7
	Height (cm)	92.5	93.9	96.3	99	101.8	104.3	105.8	92.5	93.9	96.3	99	101.8	104.3	105.8
	50th	88	89	89	90	91	92	92	45	46	46	47	48	49	49
4	90th	101	102	102	103	104	105	105	58	58	59	59	60	61	61
	95th	106	106	107	107	108	109	109	60	61	61	62	63	64	64
	95th + 12 mmHg	118	118	119	119	120	121	121	72	73	73	74	75	76	76
	Height (in)	38.8	39.4	40.5	41.7	42.9	43.9	44.5	38.8	39.4	40.5	41.7	42.9	43.9	44.5
	Height (cm)	98.5	100.2	102.9	105.9	108.9	111.5	113.2	98.5	100.2	102.9	105.9	108.9	111.5	113.2
5	50th	90	90	91	92	93	94	94	48	49	49	50	51	52	52
	90th	102	103	104	105	105	106	107	60	61	62	62	63	64	64
	95th	107	107	108	108	109	110	110	63	64	65	66	67	67	68
	95th + 12 mmHg	119	119	120	120	121	122	122	75	76	77	78	79	79	80
	Height (in)	41.1	41.8	43.0	44.3	45.5	46.7	47.4	41.1	41.8	43.0	44.3	45.5	46.7	47.4
6	Height (cm)	104.4	106.2	109.1	112.4	115.7	118.6	120.3	104.4	106.2	109.1	112.4	115.7	118.6	120.3
	50th	91	92	93	94	95	96	96	51	51	52	53	54	55	55
	90th	103	104	105	106	107	108	108	63	64	65	65	66	67	67
	95th	107	108	109	109	110	111	112	66	67	68	69	70	70	71
	95th + 12 mmHg	119	120	121	121	122	123	124	78	79	80	81	82	82	83
7	Height (in)	43.4	44.2	45.4	46.8	48.2	49.4	50.2	43.4	44.2	45.4	46.8	48.2	49.4	50.2
	Height (cm)	110.3	112.2	115.3	118.9	122.4	125.6	127.5	110.3	112.2	115.3	118.9	122.4	125.6	127.5
	50th	93	93	94	95	96	97	98	54	54	55	56	57	57	58
	90th	105	105	106	107	109	110	110	66	66	67	68	68	69	69
	95th	108	109	110	111	112	113	114	69	70	70	71	72	72	73
7	95th + 12 mmHg	120	121	122	123	124	125	126	81	82	82	83	84	84	85
	Height (in)	45.7	46.5	47.8	49.3	50.8	52.1	52.9	45.7	46.5	47.8	49.3	50.8	52.1	52.9
	Height (cm)	116.1	118	121.4	125.1	128.9	132.4	134.5	116.1	118	121.4	125.1	128.9	132.4	134.5
	50th	94	94	95	97	98	98	99	56	56	57	58	58	59	59
	90th	106	107	108	109	110	111	111	68	68	69	70	70	71	71
7	95th	110	110	111	112	114	115	116	71	71	72	73	73	74	74
	95th + 12 mmHg	122	122	123	124	126	127	128	83	83	84	85	85	86	86

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Appendix B

TABLE 4 Continued

Age (y)	BP Percentile	SBP (mm Hg)								DBP (mm Hg)					
		Height Percentile or Measured Height								Height Percentile or Measured Height					
		5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%
8	Height (in)	47.8	48.6	50	51.6	53.2	54.6	55.5	47.8	48.6	50	51.6	53.2	54.6	55.5
	Height (cm)	121.4	123.5	127	131	135.1	138.8	141	121.4	123.5	127	131	135.1	138.8	141
	50th	95	96	97	98	99	99	100	57	57	58	59	59	60	60
	90th	107	108	109	110	111	112	112	69	70	70	71	72	72	73
	95th	111	112	112	114	115	116	117	72	73	73	74	75	75	75
	95th + 12 mm Hg	123	124	124	126	127	128	129	84	85	85	86	87	87	87
9	Height (in)	49.6	50.5	52	53.7	55.4	56.9	57.9	49.6	50.5	52	53.7	55.4	56.9	57.9
	Height (cm)	126	128.3	132.1	136.3	140.7	144.7	147.1	126	128.3	132.1	136.3	140.7	144.7	147.1
	50th	96	97	98	99	100	101	101	57	58	59	60	61	62	62
	90th	107	108	109	110	112	113	114	70	71	72	73	74	74	74
	95th	112	112	113	115	116	118	119	74	74	75	76	76	77	77
	95th + 12 mm Hg	124	124	125	127	128	130	131	86	86	87	88	88	89	89
10	Height (in)	51.3	52.2	53.8	55.6	57.4	59.1	60.1	51.3	52.2	53.8	55.6	57.4	59.1	60.1
	Height (cm)	130.2	132.7	136.7	141.3	145.9	150.1	152.7	130.2	132.7	136.7	141.3	145.9	150.1	152.7
	50th	97	98	99	100	101	102	103	59	60	61	62	63	63	64
	90th	108	109	111	112	113	115	116	72	73	74	74	75	75	76
	95th	112	113	114	116	118	120	121	76	76	77	77	78	78	78
	95th + 12 mm Hg	124	125	126	128	130	132	133	88	88	89	89	90	90	90
11	Height (in)	53	54	55.7	57.6	59.6	61.3	62.4	53	54	55.7	57.6	59.6	61.3	62.4
	Height (cm)	134.7	137.3	141.5	146.4	151.3	155.8	158.6	134.7	137.3	141.5	146.4	151.3	155.8	158.6
	50th	99	99	101	102	103	104	106	61	61	62	63	63	63	63
	90th	110	111	112	114	116	117	118	74	74	75	75	75	76	76
	95th	114	114	116	118	120	123	124	77	78	78	78	78	78	78
	95th + 12 mm Hg	126	126	128	130	132	135	136	89	90	90	90	90	90	90
12	Height (in)	55.2	56.3	58.1	60.1	62.2	64	65.2	55.2	56.3	58.1	60.1	62.2	64	65.2
	Height (cm)	140.3	143	147.5	152.7	157.9	162.6	165.5	140.3	143	147.5	152.7	157.9	162.6	165.5
	50th	101	101	102	104	106	108	109	61	62	62	62	62	63	63
	90th	113	114	115	117	119	121	122	75	75	75	75	75	76	76
	95th	116	117	118	121	124	126	128	78	78	78	78	78	79	79
	95th + 12 mm Hg	128	129	130	133	136	138	140	90	90	90	90	90	91	91
13	Height (in)	57.9	59.1	61	63.1	65.2	67.1	68.3	57.9	59.1	61	63.1	65.2	67.1	68.3
	Height (cm)	147	150	154.9	160.3	165.7	170.5	173.4	147	150	154.9	160.3	165.7	170.5	173.4
	50th	103	104	105	108	110	111	112	61	60	61	62	63	64	65
	90th	115	116	118	121	124	126	126	74	74	74	75	76	77	77
	95th	119	120	122	125	128	130	131	78	78	78	78	80	81	81
	95th + 12 mm Hg	131	132	134	137	140	142	143	90	90	90	90	92	93	93
14	Height (in)	60.6	61.8	63.8	65.9	68.0	69.8	70.9	60.6	61.8	63.8	65.9	68.0	69.8	70.9
	Height (cm)	153.8	156.9	162	167.5	172.7	177.4	180.1	153.8	156.9	162	167.5	172.7	177.4	180.1
	50th	105	106	109	111	112	113	113	60	60	62	64	65	66	67
	90th	119	120	123	126	127	128	129	74	74	75	77	78	79	80
	95th	123	125	127	130	132	133	134	77	78	79	81	82	83	84
	95th + 12 mm Hg	135	137	139	142	144	145	146	89	90	91	93	94	95	96

TABLE 4 Continued

Age (y)	BP Percentile	SBP (mm Hg)								DBP (mm Hg)					
		Height Percentile or Measured Height								Height Percentile or Measured Height					
		5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%
15	Height (in)	62.6	63.8	65.7	67.8	69.8	71.5	72.5	62.6	63.8	65.7	67.8	69.8	71.5	72.5
	Height (cm)	159	162	166.9	172.2	177.2	181.6	184.2	159	162	166.9	172.2	177.2	181.6	184.2
	50th	108	110	112	113	114	114	114	61	62	64	65	66	67	68
	90th	123	124	126	128	129	130	130	75	76	76	79	80	81	81
	95th	127	129	131	132	134	135	135	78	79	81	83	84	85	85
	95th + 12 mm Hg	139	141	143	144	146	147	147	90	91	93	95	96	97	97
16	Height (in)	63.8	64.9	66.8	68.8	70.7	72.4	73.4	63.8	64.9	66.8	68.8	70.7	72.4	73.4
	Height (cm)	162.1	165	169.6	174.6	179.5	183.8	186.4	162.1	165	169.6	174.6	179.5	183.8	186.4
	50th	111	112	114	115	115	116	116	63	64	66	67	68	69	69
	90th	126	127	128	129	131	131	132	77	78	79	80	81	82	82
	95th	130	131	133	134	135	136	137	80	81	83	84	85	86	86
	95th + 12 mm Hg	142	143	145	146	147	148	149	92	93	95	96	97	98	98
17	Height (in)	64.5	65.5	67.3	69.2	71.1	72.8	73.8	64.5	65.5	67.3	69.2	71.1	72.8	73.8
	Height (cm)	163.8	166.5	170.9	175.8	180.7	184.9	187.5	163.8	166.5	170.9	175.8	180.7	184.9	187.5
	50th	114	115	116	117	117	118	118	65	66	67	68	69	70	70
	90th	128	129	130	131	132	133	134	78	79	80	81	82	82	83
	95th	132	133	134	135	137	138	138	81	82	84	85	86	86	87
	95th + 12 mm Hg	144	145	146	147	149	150	150	93	94	96	97	98	98	99

Use percentile values to stage BP readings according to the scheme in Table 3 (elevated BP: ≥ 90 th percentile; stage 1 HTN: ≥ 95 th percentile; and stage 2 HTN: ≥ 95 th percentile + 12 mm Hg). The 50th, 90th, and 95th percentiles were derived by using quantile regression on the basis of normal-weight children (BMI <85th percentile).⁷⁷

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Appendix C

BP Levels for Girls by Age and Height Percentile

From the American Academy of Pediatrics

Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents (Flynn, et al.)

TABLE 5 BP Levels for Girls by Age and Height Percentile

Age (y)	BP Percentile	SBP (mm Hg)								DBP (mm Hg)							
		Height Percentile or Measured Height								Height Percentile or Measured Height							
		5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%		
1	Height (in)	29.7	30.2	30.9	31.8	32.7	33.4	33.9	29.7	30.2	30.9	31.8	32.7	33.4	33.9		
	Height (cm)	75.4	76.6	78.6	80.8	85	84.9	86.1	75.4	76.6	78.6	80.8	85	84.9	86.1		
	50th	84	85	86	86	87	88	88	41	42	42	43	44	45	46		
	90th	98	99	99	100	101	102	102	54	55	56	56	57	58	58		
	95th	101	102	102	103	104	105	105	59	59	60	60	61	62	62		
2	95th + 12 mm Hg	115	114	114	115	116	117	117	71	71	72	72	73	74	74		
	Height (in)	33.4	34	34.9	35.9	36.9	37.8	38.4	33.4	34	34.9	35.9	36.9	37.8	38.4		
	Height (cm)	84.9	86.3	88.6	91.1	93.7	97.4	97.4	84.9	86.3	88.6	91.1	93.7	96	97.4		
	50th	87	87	88	89	90	91	91	45	46	47	48	49	50	51		
	90th	101	101	102	103	104	105	106	58	58	59	60	61	62	62		
3	95th	104	105	106	106	107	108	109	62	63	63	64	65	66	66		
	95th + 12 mm Hg	116	117	118	118	119	120	121	74	75	75	76	77	78	78		
	Height (in)	35.8	36.4	37.3	38.4	39.6	40.6	41.2	35.8	36.4	37.3	38.4	39.6	40.6	41.2		
	Height (cm)	91	92.4	94.9	97.6	100.5	103.1	104.6	91	92.4	94.9	97.6	100.5	103.1	104.6		
	50th	88	89	89	90	91	92	93	48	48	49	50	51	53	53		
4	90th	102	103	104	104	105	106	107	60	61	61	62	63	64	65		
	95th	106	106	107	108	109	110	110	64	65	65	66	67	68	69		
	95th + 12 mm Hg	118	118	119	120	121	122	122	76	77	77	78	79	80	81		
	Height (in)	38.3	38.9	39.9	41.1	42.4	45.5	44.2	38.3	38.9	39.9	41.1	42.4	45.5	44.2		
	Height (cm)	97.2	98.8	101.4	104.5	107.6	110.5	112.2	97.2	98.8	101.4	104.5	107.6	110.5	112.2		
5	50th	89	90	91	92	93	94	94	50	51	51	52	53	55	55		
	90th	103	104	105	106	107	108	108	62	63	64	65	66	67	67		
	95th	107	108	109	109	110	111	112	66	67	68	69	70	71	71		
	95th + 12 mm Hg	119	120	121	121	122	123	124	78	79	80	81	82	82	83		
	Height (in)	40.8	41.5	42.6	43.9	45.2	46.5	47.3	40.8	41.5	42.6	43.9	45.2	46.5	47.3		
6	Height (cm)	103.6	105.3	108.2	111.5	114.9	118.1	120	103.6	105.3	108.2	111.5	114.9	118.1	120		
	50th	90	91	92	93	94	95	96	52	53	53	55	56	57	57		
	90th	104	105	106	107	108	109	110	64	65	66	67	68	69	70		
	95th	108	109	109	110	111	112	113	68	69	70	71	72	73	73		
	95th + 12 mm Hg	120	121	121	122	123	124	125	80	81	82	83	84	85	85		
7	Height (in)	45.3	44	45.2	46.6	48.1	49.4	50.3	45.3	44	45.2	46.6	48.1	49.4	50.3		
	Height (cm)	110	111.8	114.9	118.4	122.1	125.6	127.7	110	111.8	114.9	118.4	122.1	125.6	127.7		
	50th	92	92	93	94	96	97	97	54	54	55	56	57	58	59		
	90th	105	106	107	108	109	110	111	67	67	68	69	70	71	71		
	95th	109	109	110	111	112	113	114	70	71	72	72	73	74	74		
8	95th + 12 mm Hg	121	121	122	123	124	125	126	82	83	84	84	85	86	86		
	Height (in)	45.6	46.4	47.7	49.2	50.7	52.1	53	45.6	46.4	47.7	49.2	50.7	52.1	53		
	Height (cm)	115.9	117.8	121.1	124.9	128.8	132.5	134.7	115.9	117.8	121.1	124.9	128.8	132.5	134.7		
	50th	92	93	94	95	97	98	99	55	55	56	57	58	59	60		
	90th	106	106	107	109	110	111	112	68	68	69	70	71	72	72		
9	95th	109	110	111	112	113	114	115	72	72	73	73	74	75	75		
	95th + 12 mm Hg	121	121	122	123	124	125	126	82	83	84	84	85	86	86		
	Height (in)	49.3	50.2	51.7	53.4	55.1	56.7	57.7	49.3	50.2	51.7	53.4	55.1	56.7	57.7		
	Height (cm)	125.3	127.6	131.3	135.6	140.1	144.1	146.6	125.3	127.6	131.3	135.6	140.1	144.1	146.6		
	50th	95	95	97	98	99	100	101	57	58	59	60	61	61	61		
10	90th	108	108	109	111	112	113	114	71	71	72	73	73	73	73		
	95th	112	112	113	114	116	117	118	74	74	75	75	75	75	75		
	95th + 12 mm Hg	124	124	125	126	128	129	130	86	86	87	87	87	87	87		
	Height (in)	51.1	52	53.7	55.5	57.4	59.1	60.2	51.1	52	53.7	55.5	57.4	59.1	60.2		
	Height (cm)	129.7	132.2	136.3	141	145.8	150.2	152.8	129.7	132.2	136.3	141	145.8	150.2	152.8		
11	50th	96	97	98	99	101	102	103	58	59	59	60	61	61	62		
	90th	109	110	111	112	113	115	116	72	73	73	73	73	73	73		
	95th	113	114	114	116	117	119	120	75	75	76	76	76	76	76		
	95th + 12 mm Hg	125	126	126	128	129	131	132	87	87	88	88	88	88	88		
	Height (in)	53.4	54.5	56.2	58.2	60.2	61.9	63	53.4	54.5	56.2	58.2	60.2	61.9	63		
12	Height (cm)	135.6	138.3	142.8	147.8	152.8	157.3	160	135.6	138.3	142.8	147.8	152.8	157.3	160		
	50th	98	99	101	102	104	105	106	60	60	61	61	62	63	64		
	90th	111	112	113	114	116	118	120	74	74	74	74	74	75	75		
	95th	115	116	117	118	120	123	124	76	77	77	77	77	77	77		
	95th + 12 mm Hg	127	128	129	130	132	135	136	88	89	89	89	89	89	89		
13	Height (in)	56.2	57.3	59	60.9	62.8	64.5	65.5	56.2	57.3	59	60.9	62.8	64.5	65.5		
	Height (cm)	142.8	145.5	149.9	154.8	159.6	163.8	166.4	142.8	145.5	149.9	154.8	159.6	163.8	166.4		
	50th	102	102	104	105	107	108	108	61	61	61	62	64	65	65		
	90th	114	115	116	118	120	122	122	75	75	75	75	76	76	76		
	95th	118	119	120	122	124	125	126	78	78	78	78	79	79	79		
14	95th + 12 mm Hg	130	131	132	134	136	137	138	90	90	90	90	91	91	91		
	Height (in)	58.3	59.3	60.9	62.7	64.5	66.1	67	58.3	59.3	60.9	62.7	64.5	66.1	67		
	Height (cm)	148.1	150.6	154.7	159.2	163.7	167.8	170.2	148.1	150.6	154.7	159.2	163.7	167.8	170.2		
	50th	104	105	106	107	108	109	109	62	62	63	64	65	65	66		
	90th	116	117	119	121	122	123	123	75	75	75	76	76	76	76		
15	95th	121	122	123	124	126	126	127	79	79	79	79	80	80	81		
	95th + 12 mm Hg	133	134	135	136	138	138	139	91	91	91	91	92	92	93		
	Height (in)	59.3	60.2	61.8	63.5	65.2	66.8	67.7	59.3	60.2	61.8	63.5	65.2	66.8	67.7		
	Height (cm)	150.6	153	156.9	161.3	165.7	169.7	172.1	150.6	153	156.9	161.3	165.7	169.7	172.1		
	50th	105	106	107	108	109	109	109	63	63	63	64	65	66	66		
16	90th	118	118	120	122	123	123	123	76	76	76	76	77	77	77		
	95th	123	123	124	125	126	127	127	80	80	80	80	81	81	82		
	95th + 12 mm Hg	135	135	136	137	138	139	139	92	92	92	92	93	93	94		

TABLE 5 Continued

Age (y)	BP Percentile	SBP (mm Hg)								DBP (mm Hg)							
		Height Percentile or Measured Height								Height Percentile or Measured Height							
		5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%		
8	Height (in)	47.6	48.4	49.8	51.4	53	54.5	55.5	47.6	48.4	49.8	51.4	53	54.5</			

Pediatric Hypertensive Emergency/Urgency (ED, Inpatient)

Appendix D

TABLE 5 Continued

Age (y)	BP Percentile	SBP (mm Hg)										DBP (mm Hg)				
		Height Percentile or Measured Height										Height Percentile or Measured Height				
		5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%	
15	Height (in)	59.7	60.6	62.2	63.9	65.6	67.2	68.1	59.7	60.6	62.2	63.9	65.6	67.2	68.1	
	Height (cm)	151.7	154	157.9	162.3	166.7	170.6	173	151.7	154	157.9	162.3	166.7	170.6	173	
	50th	105	106	107	108	109	109	109	64	64	64	65	66	67	67	
	90th	118	119	121	122	123	123	124	76	76	76	77	77	78	78	
	95th	124	124	125	126	127	127	128	80	80	80	81	82	82	82	
	95th + 12 mm Hg	136	136	137	138	139	139	140	92	92	92	93	94	94	94	
16	Height (in)	59.9	60.8	62.4	64.1	65.8	67.3	68.3	59.9	60.8	62.4	64.1	65.8	67.3	68.3	
	Height (cm)	152.1	154.5	158.4	162.8	167.1	171.1	173.4	152.1	154.5	158.4	162.8	167.1	171.1	173.4	
	50th	106	107	108	109	109	110	110	64	64	65	66	66	67	67	
	90th	119	120	122	123	124	124	124	76	76	76	77	78	78	78	
	95th	124	125	125	127	127	128	128	80	80	80	81	82	82	82	
	95th + 12 mm Hg	136	137	137	139	139	140	140	92	92	92	93	94	94	94	
17	Height (in)	60.0	60.9	62.5	64.2	65.9	67.4	68.4	60.0	60.9	62.5	64.2	65.9	67.4	68.4	
	Height (cm)	152.4	154.7	158.7	163.0	167.4	171.3	173.7	152.4	154.7	158.7	163.0	167.4	171.3	173.7	
	50th	107	108	109	110	110	110	111	64	64	65	66	66	66	67	
	90th	120	121	123	124	124	125	125	76	76	77	77	78	78	78	
	95th	125	125	126	127	128	128	128	80	80	80	81	82	82	82	
	95th + 12 mm Hg	137	137	138	139	140	140	140	92	92	92	93	94	94	94	

Use percentile values to stage BP readings according to the scheme in Table 3 (elevated BP: ≥ 90 th percentile; stage 1 HTN: ≥ 95 th percentile; and stage 2 HTN: ≥ 95 th percentile + 12 mm Hg). The 50th, 90th, and 95th percentiles were derived by using quantile regression on the basis of normal-weight children (BMI < 85 th percentile).¹⁷

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