



SAN FRANCISCO CHILD HEALTH & DISABILITY PREVENTION (CHDP) PROGRAM NEWSLETTER

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American Academy of Pediatrics Publishes New Blood Pressure Guidelines

In the September 2017 issue of *Pediatrics*, the AAP published revised blood pressure (BP) guidelines in the report, "Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents."

2017 changes to pediatric blood pressure guideline highlights include:

- New blood pressure tables based on normal weight children
- Updated definitions of BP Categories and Stages
- BP classification of children ≥ 13 years now align with the American Heart Association and American College of Cardiology's new 2017 guidelines
- A simplified screening guideline for identifying BPs needing further evaluation
- New recommendations for screening and management

New Blood Pressure Tables

The new values are based on normal weight children, therefore cutoffs for elevated BP & HTN values are several millimeters of mercury lower than previous tables. Please see insert for new tables.

New Categories and Stages

BP Categories and Stages	For Children aged 1-13 years	For Children aged ≥ 13 years
Normal BP	SBP and DBP $< 90^{\text{th}}$ percentile	$< 120 / < 80$ mm Hg
Elevated BP	SBP and/or DBP $\geq 90^{\text{th}}$ percentile to $< 95^{\text{th}}$ percentile OR $120/80$ mm Hg to $< 95^{\text{th}}$ percentile (whichever is lower)	$120 / < 80$ to $129 / < 80$ mm Hg
Stage 1 HTN	SBP and/or DBP $\geq 95^{\text{th}}$ percentile to $< 95^{\text{th}}$ percentile + 12 mm Hg or $130/80$ to $139/89$ mm Hg (whichever is lower)	$130/80$ to $139/89$ mm Hg
Stage 2 HTN	SBP and/or DBP $\geq 95^{\text{th}}$ percentile + 12 mm Hg, or $\geq 140/90$ mm Hg (whichever is lower)	$\geq 140/90$ mm Hg

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New BP Screening Table

This table is a [screening tool](#) to identify BPs that need repeated measurement and further evaluation if still elevated. The new simplified screening table is based on the 90th percentile blood pressure for age and sex for children at the 5th percentile of height.

Screening BP Values Requiring Further Evaluation				
Age, y	BP, mm Hg			
	BOYS		GIRLS	
	Systolic	Diastolic	Systolic	Diastolic
1	98	52	98	54
2	100	55	101	58
3	101	58	102	60
4	102	60	103	62
5	103	63	104	64
6	105	66	105	67
7	106	68	106	68
8	107	69	107	69
9	107	70	108	71
10	108	72	109	72
11	110	74	111	74
12	113	75	114	75
≥ 13	120	80	120	80

What to do if the initial BP is high

If initial BP is greater than or equal to 90%, perform 2 additional oscillometric or auscultatory BP measurements at the same visit and average them

- If using auscultation, the average is used to determine the BP category
- If the averaged oscillometric reading is greater than or equal to 90%, 2 auscultatory measurements should be taken and the average to determine the BP category

When to diagnose HTN

Measurements can vary during the same visit and between multiple visits; a diagnosis of hypertension should only be given if a child has auscultatory readings $\geq 95^{\text{th}}$ percentile after multiple measurements and over time.

Screening Recommendations

Begin measurement (if no risk factors) at age 3, repeat annually if child is healthy

BP to be checked at [all health care encounters](#) if child is:

- obese,
- taking meds known to elevate BP (such as stimulants),
- has renal disease,
- has hx of aortic arch obstruction or coarctation,
- or diabetes

Children younger than 3 years to have BP checked if risk factors present*

TABLE 4 BP Levels for Boys by Age and Height Percentile

Age (y)	BP Percentile	SBP (mm Hg)					DBP (mm Hg)								
		5%	10%	25%	50%	75%	80%	85%	90%	95%					
1	Height (in)	30.4	30.8	31.8	32.4	33.3	34.1	34.6	34.1	33.3	32.4	31.8	31.5	30.8	30.4
	Height (cm)	77.2	78.3	80.2	82.4	84.6	86.7	87.9	86.7	84.6	82.4	80.2	80.2	78.3	77.2
	50th	85	85	88	88	87	88	88	88	88	88	88	88	88	88
	90th	88	89	89	100	100	101	101	101	101	101	101	101	101	101
	95th	102	102	103	103	104	105	105	105	105	105	105	105	105	105
2	95th + 12 mm Hg	114	114	115	115	116	117	117	117	117	117	117	117	117	117
	Height (in)	33.9	34.4	35.3	36.3	37.3	38.2	38.8	38.2	37.3	36.3	35.3	35.3	34.4	33.9
	Height (cm)	86.1	87.4	89.6	92.1	94.7	97.1	98.5	97.1	94.7	92.1	89.6	89.6	87.4	86.1
	50th	87	87	88	89	89	90	91	90	89	89	89	89	89	89
	90th	100	100	101	102	103	103	104	104	104	104	104	104	104	104
3	95th + 12 mm Hg	116	117	117	118	119	119	120	119	119	119	119	119	119	119
	Height (in)	36.4	37	37.9	39	40.1	41.1	41.7	41.1	40.1	39	37.9	37.9	37	36.4
	Height (cm)	92.5	93.9	96.3	99	101.8	104.3	105.8	104.3	101.8	99	96.3	96.3	93.9	92.5
	50th	88	88	89	90	91	92	92	92	92	92	92	92	92	92
	90th	101	102	102	103	104	105	105	105	105	105	105	105	105	105
4	95th + 12 mm Hg	108	108	107	107	108	108	109	108	108	108	108	108	108	108
	Height (in)	118	118	119	119	120	121	121	121	121	121	121	121	121	121
	Height (cm)	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8
	50th	80	80	81	82	83	84	84	84	84	84	84	84	84	84
	90th	102	103	104	105	105	106	107	107	107	107	107	107	107	107
5	95th + 12 mm Hg	107	107	108	108	109	110	110	110	110	110	110	110	110	110
	Height (in)	41.1	41.8	43.0	44.3	45.5	46.7	47.4	46.7	45.5	44.3	43.0	43.0	41.8	41.1
	Height (cm)	104.4	106.2	108.1	112.4	115.7	118.8	120.3	118.8	115.7	112.4	108.1	108.1	106.2	104.4
	50th	81	82	83	84	85	86	86	86	86	86	86	86	86	86
	90th	103	104	105	106	107	108	108	108	108	108	108	108	108	108
6	95th + 12 mm Hg	107	108	108	109	110	111	112	111	111	111	111	111	111	111
	Height (in)	119	120	121	121	122	123	124	123	123	123	123	123	123	123
	Height (cm)	30.4	30.8	31.8	32.4	33.3	34.1	34.6	34.1	33.3	32.4	31.8	31.8	30.8	30.4
	50th	81	82	83	84	85	86	86	86	86	86	86	86	86	86
	90th	103	104	105	106	107	108	108	108	108	108	108	108	108	108
7	95th + 12 mm Hg	106	107	108	108	109	110	111	110	110	110	110	110	110	110
	Height (in)	118.1	118	121.4	125.1	128.9	132.4	134.5	132.4	128.9	125.1	121.4	121.4	118	118.1
	Height (cm)	30.4	30.8	31.8	32.4	33.3	34.1	34.6	34.1	33.3	32.4	31.8	31.8	30.8	30.4
	50th	84	84	85	86	87	88	88	88	88	88	88	88	88	88
	90th	106	107	108	109	110	111	111	111	111	111	111	111	111	111

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%	85%	90%	95%	98%	5%	10%	25%	50%	75%	85%	90%	95%	98%		
8	Height (m)	47.8	48.6	50	51.8	53.2	55.5	54.8	57.8	58.5	47.8	48.6	50	51.8	53.2	55.5	54.8	57.8	58.5		
	Height (cm)	121.4	125.5	127	131	135.1	141	138.8	141	141	121.4	123.5	127	131	135.1	141	138.8	141	141		
	50th	95	98	97	98	99	100	98	98	98	57	57	58	58	59	59	59	60	60		
	90th	107	108	108	110	111	112	112	112	112	69	70	70	71	71	72	72	72	73		
	95th	111	112	112	114	115	117	118	118	118	72	73	73	74	74	75	75	75	75		
9	95th + 12 mm Hg	123	124	124	128	127	128	128	128	128	84	85	85	86	86	86	87	87	87		
	Height (m)	49.6	50.5	52	53.7	55.4	57.9	56.9	59.8	59.8	49.6	50.5	52	53.7	55.4	57.9	56.9	59.8	59.8		
	Height (cm)	128	128.3	132.1	136.3	140.7	147.1	144.7	144.7	149.7	128	128.3	132.1	136.3	140.7	147.1	144.7	149.7	149.7		
	50th	96	97	98	99	100	101	101	101	101	57	58	59	60	61	61	62	62	62		
	90th	107	108	109	110	112	114	113	113	114	70	71	72	73	74	74	74	74	74		
10	95th + 12 mm Hg	112	112	113	115	116	118	118	118	118	74	74	75	76	76	76	77	77	77		
	Height (m)	124	124	125	127	128	131	130	130	131	86	86	87	88	88	88	89	89	89		
	Height (cm)	130.2	132.7	135.8	141.3	145.9	152.7	150.1	150.1	152.7	51.3	52.2	53.8	55.8	57.4	57.4	58.1	58.1	60.1		
	50th	97	98	99	100	101	103	102	102	103	59	60	61	62	62	63	63	63	64		
	90th	108	108	111	112	113	116	115	115	116	72	73	74	74	75	75	75	75	76		
11	95th + 12 mm Hg	112	113	114	118	118	121	120	121	121	76	76	77	77	78	78	78	78	78		
	Height (m)	124	125	126	128	130	133	132	133	88	88	88	88	88	88	88	88	88	88		
	Height (cm)	134.7	137.3	141.5	146.4	151.3	158.6	155.8	155.8	162.4	53	54	55.7	57.6	58.6	58.6	58.6	61.3	62.4		
	50th	99	99	101	102	103	106	104	104	106	61	61	62	63	63	63	63	63	63		
	90th	110	111	112	114	116	118	117	117	118	74	74	75	75	75	75	75	75	76		
12	95th + 12 mm Hg	114	114	116	118	120	124	123	124	124	77	78	78	78	78	78	78	78	78		
	Height (m)	126	126	128	130	132	136	135	136	136	89	89	89	89	89	89	89	89	89		
	Height (cm)	140.3	143	147.5	152.7	157.8	165.5	162.8	162.8	168.5	55.2	56.3	58.1	60.1	62.2	62.2	64	64	65.2		
	50th	101	101	102	104	106	108	108	108	108	61	62	62	62	62	62	62	62	62		
	90th	113	114	115	117	118	122	121	121	122	75	75	75	75	75	75	75	75	76		
13	95th + 12 mm Hg	116	117	118	121	124	128	126	128	128	78	78	78	78	78	78	78	78	78		
	Height (m)	128	129	130	133	136	140	138	138	140	90	90	90	90	90	90	90	90	90		
	Height (cm)	147	150	154.8	160.3	165.7	173.4	170.5	170.5	173.4	57.9	59.1	61.8	63.1	65.2	65.2	67.1	67.1	68.3		
	50th	103	104	105	108	110	112	111	111	112	61	61	61	61	61	61	61	61	61		
	90th	115	116	118	121	124	128	126	126	128	78	78	78	78	78	78	78	78	78		
14	95th + 12 mm Hg	118	120	122	125	128	131	130	131	131	80	80	80	80	80	80	80	80	80		
	Height (m)	131	132	134	137	140	143	142	143	143	90	90	90	90	90	90	90	90	90		
	Height (cm)	153.8	156.9	162	167.5	172.7	180.1	177.4	177.4	180.1	60.8	61.8	63.8	65.8	68.0	68.0	69.8	69.8	70.9		
	50th	105	106	108	111	112	115	113	113	115	60	60	62	64	65	65	66	66	67		
	90th	119	120	123	126	127	128	128	128	128	74	74	75	75	75	75	75	75	75		
14	95th + 12 mm Hg	123	125	127	130	132	134	133	134	134	77	78	78	78	78	78	78	78	78		
	Height (m)	135	137	139	142	144	146	145	146	146	88	89	89	89	89	89	89	89	89		

TABLE 4 Continued

Age (y)	BP Percentile	SBP (mm Hg)										DBP (mm Hg)										
		Height Percentile or Measured Height					Height Percentile or Measured Height					Height Percentile or Measured Height					Height Percentile or Measured Height					
		5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%	5%	10%	25%	50%	75%	90%	95%
15	Height (in)	62.8	63.8	65.7	67.8	69.8	71.5	72.5	62.6	63.6	65.7	67.8	69.8	71.5	72.5	62.6	63.6	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	159	166.9	172.2	177.2	181.6	184.2	159	159	166.9	172.2	177.2	181.6	184.2
	50th	106	110	112	113	114	114	114	61	61	64	66	68	67	68	68	68	68	68	68	67	68
	90th	123	124	128	128	129	130	130	75	76	78	79	80	81	81	81	80	80	80	80	81	81
	95th	127	128	131	132	134	135	135	78	79	81	83	84	85	85	84	84	85	85	84	85	85
16	95th + 12 mm Hg	139	141	143	144	146	147	147	90	91	93	95	98	97	97	90	91	93	95	98	97	97
	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	63.8	64.9	66.8	68.8	70.7	72.4	73.4
	Height (cm)	162.1	165	169.6	174.8	179.5	183.8	186.4	162.1	165	169.6	174.8	179.5	183.8	186.4	162.1	165	169.6	174.8	179.5	183.8	186.4
	50th	111	112	114	115	115	116	116	63	64	66	67	68	68	69	68	68	68	67	68	68	69
	90th	126	127	128	129	131	131	132	77	78	79	80	81	82	82	77	78	79	80	81	82	82
17	95th	130	131	133	134	135	136	137	80	81	83	84	85	86	86	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	92	93	95	96	97	98	98
	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	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	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	65	66	67	68	69	70	70
18	90th	128	129	130	131	132	133	134	78	79	80	81	82	82	83	78	79	80	81	82	82	83
	95th	132	133	134	135	137	138	138	81	82	84	85	86	86	87	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	93	94	96	97	98	98	99

Use percentile values to stage BP readings according to the scheme in Table 3 (elevated BP: ≥80th percentile; stage 1 HTN: ≥95th percentile; and stage 2 HTN: ≥98th 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

TABLE 5 BP Levels for Girls by Age and Height Percentile

Age (y)	BP Percentile	SBP (mmHg)										DBP (mmHg)									
		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	83	84.9	86.1	75.4	76.6	78.6	80.8	83	84.9	86.1						
	50th	84	85	86	86	87	88	88	41	42	42	43	44	45	46						
	90th	88	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 mmHg	113	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	96	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	108	107	108	109	62	63	63	64	65	66	66						
	95th + 12 mmHg	118	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	97.8	100.5	103.1	104.6	91	92.4	94.9	97.8	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	108	106	107	108	109	110	110	64	65	65	66	67	68	68						
	95th + 12 mmHg	118	118	118	120	121	122	122	76	77	77	78	79	80	81						
	Height (in)	38.5	38.9	39.9	41.1	42.4	43.5	44.2	38.5	38.9	39.9	41.1	42.4	43.5	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	53	54	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	68	67	68	69	70	70	71						
	95th + 12 mmHg	119	120	121	121	122	123	124	78	79	80	81	82	82	83						
	Height (in)	40.8	41.5	42.6	43.8	45.2	46.5	47.3	40.8	41.5	42.6	43.8	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	80	81	82	83	84	85	85	52	52	53	55	56	57	57						
	90th	104	105	106	107	108	109	110	64	65	66	67	68	69	70						
	95th	108	109	108	110	111	112	113	68	69	70	71	72	73	73						
	95th + 12 mmHg	120	121	121	122	123	124	125	80	81	82	83	84	85	85						
7	Height (in)	43.3	44	45.2	46.6	48.1	49.4	50.3	43.3	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	82	82	83	84	86	87	87	54	54	55	56	57	58	58						
	90th	105	106	107	108	109	110	111	67	67	68	69	70	71	71						
	95th	108	109	110	111	112	113	114	70	71	72	73	74	74	74						
8	95th + 12 mmHg	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	82	83	84	85	87	88	89	55	55	56	57	58	59	60						
	90th	106	108	107	108	110	111	112	68	68	69	70	71	72	72						
9	95th	108	110	111	112	113	114	115	72	72	73	74	74	75	75						
	95th + 12 mmHg	121	122	123	124	125	126	127	84	84	85	85	86	86	87						

TABLE 5. Continued

Age (y)	BP Percentile	SBP (mm Hg)										DBP (mm Hg)														
		Height Percentile or Measured Height					Height Percentile or Measured Height					Height Percentile or Measured Height					Height Percentile or Measured Height									
		5%	10%	25%	50%	75%	80%	85%	95%	5%	10%	25%	50%	75%	80%	85%	95%	5%	10%	25%	50%	75%	80%	85%	95%	
8	Height (in)	47.6	48.4	48.8	51.4	55	54.5	55.5	55.5	47.6	48.4	48.8	51.4	55	54.5	55.5	55.5	47.6	48.4	48.8	51.4	55	54.5	55.5	55.5	
	Height (cm)	121	123	123.5	130.6	134.7	138.5	140.8	140.8	121	123	123.5	130.6	134.7	138.5	140.8	140.8	121	123	123.5	130.6	134.7	138.5	140.8	140.8	
	50th	83	84	85	87	88	88	88	88	56	56	57	58	58	58	58	58	56	56	57	58	58	58	58	58	
	80th	107	107	108	110	111	112	113	113	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
	95th	110	111	112	113	115	116	117	117	117	117	117	118	118	118	118	118	118	117	117	117	117	117	117	117	117
9	95th + 12 mm Hg	122	123	124	125	127	128	129	129	84	85	86	86	86	86	86	86	84	85	86	86	86	86	86	86	
	Height (in)	49.3	50.2	51.7	53.4	55.1	56.7	57.7	57.7	49.3	50.2	51.7	53.4	55.1	56.7	57.7	57.7	49.3	50.2	51.7	53.4	55.1	56.7	57.7	57.7	
	Height (cm)	125.3	127.6	131.3	135.6	140.1	144.1	146.6	146.6	125.3	127.6	131.3	135.6	140.1	144.1	146.6	146.6	125.3	127.6	131.3	135.6	140.1	144.1	146.6	146.6	
	50th	85	85	87	88	89	89	89	89	57	58	58	58	58	58	58	58	57	58	58	58	58	58	58	58	
	80th	108	108	109	111	112	113	114	114	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	
10	95th + 12 mm Hg	112	112	113	114	116	117	118	118	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	Height (in)	51.1	52	53.7	55.5	57.4	58.1	60.2	60.2	51.1	52	53.7	55.5	57.4	58.1	60.2	60.2	51.1	52	53.7	55.5	57.4	58.1	60.2	60.2	
	Height (cm)	129.7	132.2	136.3	141	145.8	150.2	152.8	152.8	129.7	132.2	136.3	141	145.8	150.2	152.8	152.8	129.7	132.2	136.3	141	145.8	150.2	152.8	152.8	
	50th	86	87	88	88	89	89	89	89	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
	80th	109	110	111	112	113	114	115	115	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	
11	95th + 12 mm Hg	113	114	114	116	117	118	120	120	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	
	Height (in)	53.4	54.5	56.2	58.2	60.2	61.9	63	63	53.4	54.5	56.2	58.2	60.2	61.9	63	63	53.4	54.5	56.2	58.2	60.2	61.9	63	63	
	Height (cm)	135.6	138.3	142.8	147.8	152.8	157.3	160	160	135.6	138.3	142.8	147.8	152.8	157.3	160	160	135.6	138.3	142.8	147.8	152.8	157.3	160	160	
	50th	88	88	89	89	90	90	90	90	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
	80th	111	112	113	114	116	118	120	120	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
12	95th + 12 mm Hg	115	116	117	118	120	123	124	124	76	77	77	77	77	77	77	77	76	77	77	77	77	77	77	77	
	Height (in)	56.2	57.3	59	60.9	62.8	64.5	65.5	65.5	56.2	57.3	59	60.9	62.8	64.5	65.5	65.5	56.2	57.3	59	60.9	62.8	64.5	65.5	65.5	
	Height (cm)	142.8	145.5	149.9	154.8	159.6	163.8	166.4	166.4	142.8	145.5	149.9	154.8	159.6	163.8	166.4	166.4	142.8	145.5	149.9	154.8	159.6	163.8	166.4	166.4	
	50th	102	102	104	105	107	108	108	108	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	
	80th	114	115	116	118	120	122	122	122	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	
13	95th + 12 mm Hg	118	119	120	122	124	125	126	126	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	
	Height (in)	58.3	59.3	60.9	62.7	64.5	66.1	67	67	58.3	59.3	60.9	62.7	64.5	66.1	67	67	58.3	59.3	60.9	62.7	64.5	66.1	67	67	
	Height (cm)	148.1	150.6	154.7	159.2	163.7	167.8	170.2	170.2	148.1	150.6	154.7	159.2	163.7	167.8	170.2	170.2	148.1	150.6	154.7	159.2	163.7	167.8	170.2	170.2	
	50th	104	105	106	107	108	108	108	108	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	
	80th	116	117	119	121	122	123	123	123	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	
14	95th + 12 mm Hg	121	122	123	124	126	126	127	127	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	
	Height (in)	59.3	60.2	61.8	63.5	65.2	66.8	67.7	67.7	59.3	60.2	61.8	63.5	65.2	66.8	67.7	67.7	59.3	60.2	61.8	63.5	65.2	66.8	67.7	67.7	
	Height (cm)	150.8	153	156.9	161.3	165.7	169.7	172.1	172.1	150.8	153	156.9	161.3	165.7	169.7	172.1	172.1	150.8	153	156.9	161.3	165.7	169.7	172.1	172.1	
	50th	105	106	107	108	109	109	109	109	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	
	80th	118	118	120	122	123	123	123	123	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	

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%	5%	10%	25%	50%	75%	90%	95%	
15	Height (in)	50.7	60.6	82.2	83.9	85.8	87.2	88.1	58.7	60.6	82.2	83.9	85.9	87.2	88.1								
	Height (cm)	151.7	154	157.8	182.3	186.7	170.5	173	151.7	154	157.9	182.3	186.7	170.5	173								
	50th	105	108	107	108	108	108	108	109	64	64	64	65	66	67								
	90th	118	119	121	122	123	123	123	124	76	76	76	77	77	78								
	95th	124	124	125	128	127	127	127	128	80	80	80	81	82	82								
16	95th + 12 mm Hg	136	136	137	138	139	139	140	140	82	82	82	83	84									
	Height (in)	58.8	60.8	82.4	84.1	85.8	87.3	88.3	58.8	60.8	82.4	84.1	85.8	87.3	88.3								
	Height (cm)	152.1	154.5	158.4	182.8	167.1	171.1	173.4	152.1	154.5	158.4	182.8	167.1	171.1	173.4								
	50th	108	107	108	109	109	110	110	84	64	65	66	66	67	67								
	90th	119	120	122	123	124	124	124	124	76	76	76	77	78	78								
17	95th	124	125	125	127	127	128	128	80	80	80	81	82	82									
	95th + 12 mm Hg	136	137	137	139	139	140	140	82	82	82	83	84	84									
	Height (in)	60.0	60.9	82.5	84.2	85.9	87.4	88.4	60.0	60.9	82.5	84.2	85.9	87.4	88.4								
	Height (cm)	152.4	154.7	158.7	183.0	167.4	171.3	173.7	152.4	154.7	158.7	183.0	167.4	171.3	173.7								
	50th	107	108	108	110	110	110	111	64	64	65	66	66	67	67								
17	90th	120	121	123	124	124	125	125	76	76	77	77	78	78									
	95th	125	125	126	127	128	128	128	80	80	80	81	82	82									
	95th + 12 mm Hg	137	137	138	139	140	140	140	82	82	82	83	84	84									

Use percentile values to stage BP readings according to the scheme in Table 3 (elevated BP: ≥ 80 th percentile; stage 1 HTN: ≥ 90 th percentile; and stage 2 HTN: ≥ 95 th percentile). The 50th, 90th, and 95th percentiles were derived by using quantile regression on the basis of normal-weight children (BMI < 85 th percentile).⁷

BP Category and Stages	Recommended Intervention
Normal BP	Recheck in 1 year at next well child exam
Elevated BP	Repeat measurement in 6 months Recommend lifestyle modifications Consider nutrition and/or weight management referral
	If BP remains “elevated” 6 months later: Upper and lower extremity BP should be checked (right arm, left arm, and 1 leg) Lifestyle counseling repeated Repeat measurement in 6 months by auscultation
	If BP remains “elevated” after 12 months (after 3 auscultatory measurements): Ambulatory Blood Pressure Monitoring (ABPM) should be ordered if available Diagnostic evaluation should be conducted Consider subspecialty referral
Stage 1 HTN	If patient is asymptomatic: Repeat measurement in 1-2 weeks Recommend lifestyle modifications
	If BP reading remains at Stage 1 1-2 weeks later: Check BP in right arm, left arm, and 1 leg Consider nutrition and/or weight management referrals Recheck BP by auscultation in 3 months
	If BP remains at Stage 1 after 3 visits: Order ABPM Conduct diagnostic evaluation, Initiate treatment Consider subspecialty referral
Stage 2 HTN	Upper and Lower extremity BP should be checked (right arm, left arm, and 1 leg) Repeat BP measurement in 1 week Lifestyle recommendations OR Refer to subspecialty care within 1 week
	If still at Stage 2 when repeated: Diagnostic evaluation Order ABPM Initiate Treatment OR Refer to subspecialty within 1 week
	If reading still at Stage 2 and the patient is symptomatic or the BP > 30 mm Hg above the 95 th percentile (or > 180/120 mm Hg in an adolescent), refer to immediate source of care, such as an emergency department

*Risk Factors

- History of prematurity < 32 weeks gestation or small for gestational age, very low birth weight, or other neonatal complication requiring intensive care, umbilical artery line
- Congenital heart disease (repaired or unrepaired)
- Recurrent urinary tract infections, hematuria, or proteinuria
- Known kidney disease or urological malformations
- Family history of congenital kidney disease
- Solid-organ transplant
- Malignancy or bone marrow transplant
- Treatment with drugs known to raise blood pressure
- Other systemic illnesses associated with hypertension (eg, neurofibromatosis, tuberous sclerosis, sickle cell disease, etc)
- Evidence of increased elevated intracranial pressure

Reference:

Flynn, J., Kaelber, D., Baker-Smith, C., et al. (2017). Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. *Pediatrics*, 140(3). <http://pediatrics.aappublications.org/content/140/3>

Guidelines for Nurses & Medical Assistants—How to take a pediatric BP:

Measurements should be taken on the right arm of a seated, relaxed child using an appropriately sized cuff (length of bladder should encompass 80-100% of the arm circumference, width to cover 40% of arm).

A complete copy of the publication can be found at:

<http://pediatrics.aappublications.org/content/140/3/e20171904>



CHDP Gateway

The State of California and the San Francisco Department of public health are committed to ensuring the health of our pediatric community. The CHDP GATEWAY process provides a safety net so that *all* children in San Francisco may receive well child exams and immunizations. It is therefore essential that ALL CHDP Providers are able to perform a Gateway transaction when needed.

As a reminder, ALL CHDP Providers may use the CHDP Gateway process to pre-enroll CHDP eligible children and youth into temporary fee-for-service, full-scope, Medi-Cal at the time of a scheduled CHDP health assessment visit. Eligibility is based on age, household size, and family income. Services can be rendered on the date eligibility is determined.

In order to prevent duplication of services with the Medi-Cal Managed Care plans, your local CHDP program will be prioritizing support and trainings for those providers who perform Gateway transactions, acting as a vital resource for our uninsured patients.

If you have any questions on CHDP Gateway, or are interested in a Gateway training, please contact your Provider Relations Nurse or the San Francisco CHDP Office.

Alicen Kershaw, Provider Relations Nurse 415-575-5707
Kathy Shumaker, Provider Relations Nurse 415-575-5736
CHDP Office 415-575-5712



Save the Date!

Audiometric Screening & Play Audiometry Training

Please save the date for the CHDP 2018 Audiometric Screening & Play Audiometry Training on **April 23-25th, 2018.**

Learn about new AAP Bright Futures Hearing Screening recommendations and proper techniques for screening young children!

New NEMS Pediatric Dental Clinic in Chinatown

728 Pacific Avenue, Suite 201 (Second Floor)
Call NEMS Stockton Dental for appointments: (415) 391-9686, #8180
Accepts age 6+ mos and up

San Francisco Dental Transformation Initiative

Local Dental Pilot Project - FAQs

What does SF DTI LDPP stand for?

SF DTI LDPP stands for San Francisco Dental Transformation Initiative Local Dental Pilot Project.

What is DTI LDPP?

Within the Medi-Cal 2020 Waiver, the Dental Transformation Initiative (DTI) represents a critical mechanism to improve dental health for Medi-Cal children by focusing on high-value care, improved access, and utilization of performance measures to drive delivery system reform. Local Dental Pilot Projects (LDPP) is part of [Domain 4](#) of DTI under the Medi-Cal 2020 Waiver. 15 LDPPs across the state of California were funded under Domain 4 to implement Local Dental Pilot Projects (LDPP) to improve dental health for Medi-Cal children by addressing goals of the [other 3 Domains](#) through alternative programs. San Francisco's proposal is one of the 15 LDPPs selected. The SF LDPP is based on, and aligned with the [SF Children's Oral Health Strategic Plan](#).

Who is the Lead Entity for the SF DTI LDPP?

San Francisco Department of Public Health serves as the lead entity of the SF DTI LDPP.

What is the duration of the SF DTI LDPP?

SF DTI LDPP is a four-year long project, and it will run from Jul 2017 through Dec 2020.

Who is the Target Population?

Our target population is the approximately 14,300 low-income San Francisco children ages 0 through 5 years who are Denti-Cal beneficiaries.

Why this Target Population?

Recent data from comprehensive screening of kindergarteners in the San Francisco Unified School District (SFUSD) and the [Community Health Assessment](#) conducted by SFDPH in 2016 has shown that untreated tooth decay rates and caries experience rates are increasing, from 32.1% in 2013 to 34.9% in 2015. Even more distressing, there are deep disparities in caries experience rates by race/ethnicity, with our children of color carrying the biggest burden of caries.

What is the DTI LDPP that will be implemented in San Francisco?

There are **five pilots under the SF DTI LDPP**. Through the implementation of the five pilots, SF DTI LDPP will seek to advance the oral health of children 0-5 years through increasing access to dental care for Denti-Cal beneficiaries; creation of culturally relevant health promotion messages; increasing interprofessional collaborative practice between primary care providers and dental service providers; and incentivizing dual users at Federally Qualified Health Centers (FQHC).

I am a primary care provider. How can I get involved?

As a primary care provider, or a staff at a primary care practice, you can participate in 2 ways:

Pilot 4: Interprofessional Collaborative Practice, to learn skills and knowledge to become an oral health champion for the patients you serve.

Pilot 2: Care Coordination, to get help case managing your 0-5 y.o. patients to get to a dentist.

I have more questions. Who can I contact for more information?

Christina Nip, DTI Program Coordinator christina.nip@sfdph.org (415) 575-5681

Margaret Fisher, CHDP Dental Hygienist margaret.fisher@sfdph.org (415) 575-5719



San Francisco
Health Network

SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

Welcoming
Caring
Connecting

Pilot 1 Access Collaborative

Provides quality improvement support and training for dental practices serving 0-5 years old Denti-Cal beneficiaries to create capacity for increased number of children served and preventive services provided

Pilot 2 Care Coordination

Improves care coordination through bilingual health workers trained in Motivational Interviewing techniques and culturally appropriate messaging to address caregiver barriers to increase utilization of preventive dental care

Pilot 3 Health Promotion Messaging

Develops targeted, culturally relevant health promotion messaging aimed at caregivers of Denti-Cal beneficiaries 0-5 years old to increase preventive dental care utilization

Pilot 4 Interprofessional Collaborative Practices

Increases interprofessional collaboration through training to primary care providers to increase their knowledge of dental care referral resources and caregivers barriers to increase utilization of preventive dental care

Pilot 5 Incentivizing FQHC Dual-users

Incentivizes FQHCs with co-located primary care and dental services to develop systems change to increase the percentage of dual-users receiving preventive dental care

SF DTI Update: Expanded Dental Care Coordination Project for Pediatric Patients

The SF Dental Transformation Initiative (DTI) Local Dental Pilot Project (LDPP) is a newly funded project based on the SF Children's Oral Health Strategic Plan (https://www.sfdph.org/dph/files/dentalSvcdocs/87_StrategicPlanWebLRes_1114_LH5.pdf), with 5 pilots (<https://sfdti.weebly.com/pilots.html>) to improve children's oral health in SF.

WHAT: Under Pilot 2, the SF DTI LDPP will offer expanded dental care coordination to **Managed Care Medi-Cal beneficiaries Ages 0 up to 6th birthday** in addition to CHDP's routine care coordination to link fee-for-service pediatric beneficiaries to dental care.

WHO: DTI Care coordination for Managed Care Medi-Cal beneficiaries Ages 0 up to 6th birthday will be provided by bilingual health workers at CHDP, and at the San Francisco Unified School District.

WHEN: Beginning January 2018

TO PARTICIPATE: Send SF CHDP office a completed Dental Referral on the brown Information Only PM160 forms within 5 days of service.

- **Both FQHC & non-FQHC Providers** should continue using brown Information Only PM160 forms, for referring both **Medi-Cal Managed Care** and **Fee-for-Service** beneficiaries.
- DTI/CHDP staff will meet with CHDP providers and their staff to explain how to refer to the expanded dental care coordination program.

REMINDER: CHDP will continue to provide care coordination for all fee-for-service beneficiaries referred to our office for both medical and dental referrals for children ages 0 through 20 years old.

SUBSCRIBE to the SF DTI newsletter: <http://tinyurl.com/yamk8oc7>

Please see DTI insert for more information.

Special Denti-Cal Bulletin: Full Restoration of Adult Dental Services in 2018

Effective January 1, 2018 formerly excluded dental benefits under Denti-Cal will be restored for adults. These restored dental treatments include the following: root canals, laboratory crowns for abutment teeth, both full and partial dentures, and deeper cleanings (scaling/root planing & periodontal maintenance).

Many parents put off taking care of their own poor oral health, due to the high cost of dental treatment. Restoring these benefits allows parents to not only model healthy habits for their children, but also protects their own systemic health!

Winter/Spring 2017-18 Updated SF CHDP Dental Directory is now online!

- ENGLISH https://www.sfdph.org/dph/files/dentalSvcdocs/CHDPDentalDir_062012_Eng.pdf
- CHINESE https://www.sfdph.org/dph/files/dentalSvcdocs/CHDPDentalDir_062012_Chinese.pdf
- SPANISH https://www.sfdph.org/dph/files/dentalSvcdocs/CHDPDentalDir_062012_Spanish.pdf



A full list of restored benefits can be found at: https://www.denti-cal.ca.gov/DC_documents/providers/provider_bulletins/Volume_33_Number_14.pdf

New Staff at CHDP



Margaret Suda, CHDP PHN

Margaret Suda, RN, PHN, MSN is a new CHDP nurse. She recently graduated from the USCF Family Nurse Practitioner program in 2017. She has worked as a camp nurse at Via Services (a camp for adults and kids with disabilities), HEDIS nurse with Chinese Community Health Plan, and Occupational Health RN case manager at Stanford. She is very excited to join the CHDP team to help make a positive impact in the health of families and children in SF!

Vanessa Soto is a new CHDP Health Worker and is bilingual in English and Spanish. She comes to us from the San Francisco Health Network's Centralized Call Center and has experience working with the DPH primary care clinics and assisting patients by providing general information, scheduling appointments, and generating electronic messages between patients and their providers. Vanessa also has experience as a Health Educator, providing services at a community health center in Solano County. She is excited to be joining the CHDP team and continuing to assist with improving the communities' health!



Vanessa Soto,
CHDP Health Worker

CHDP Provider Information Notices

<http://www.dhcs.ca.gov/services/chdp/Pages/CHDPPLPIN.aspx>

No new Provider Information Notices since PIN # 17-03 6-27-17.

All CHDP providers are required to comply with the most recent AAP Bright Futures Guidelines and the AAP Bright Futures Recommendations for Preventive Pediatric Health Care (periodicity table). In addition, CHDP providers are also required to comply with any additional state regulatory requirements for risk assessments and testing as outlined in the CHDP HAG.

Medi-Cal NewsFlash <http://www.medi-cal.ca.gov/>

Claims Processing Issue for Local per Visit Code 03 – released October 25, 2017

This issue impacts FQHC, RHC and IHS for claims submitted between 10/1/17 and 10/12/17. The Department of Health Care Services (DHCS) has identified a claims processing issue causing claims billed with local per visit code 03 (dental services) to erroneously deny with Remittance Advice Details (RAD) code **9272: Revenue code invalid for date of service or provider type**. Claims erroneously denied with this RAD message will be reprocessed. Providers may continue to check the Medi-Cal website for further information.

January 2018 Medi-Cal Provider Training Webinars – released 11/03/17.

Beginning January 2, 2018 and the whole month of January, Medi-Cal providers may participate in provider training webinars which are held Tues, Wed and Thurs at 10 am and 2 pm. Hosted in real-time, it will cover basic, advanced and specialty classes. Access through the Provider Training <https://learn.medi-cal.ca.gov/Training/TrainingServices.aspx> web page of the Medi-Cal Learning Portal (MLP) or the Medi-Cal website's home page.

Providers must have internet access and a user profile in the MLP. Detailed instructions about the registration process and how to access webinar classes are available on the Outreach & Education <http://www.medi-cal.ca.gov/education.asp> web page of the Medi-Cal website.

FQHC Code Conversion Denials – released November 15, 2017. FQHC, RHC & IHS-MOA code conversion is effective for dates of service on or after October 1, 2017. The most common denials occur when providers bill incorrectly after the transition date. See the table below for the most frequent Remittance Advice Details (RAD) codes and tips that will help to minimize future claim denials. As usual, the denied claims should be corrected and resubmit in accordance with timeliness requirements.

RAD Code	RAD Message	Tips
0037	Health Care Plan enrollee, capitated service not billable to Medi-Cal.	Medi-Cal Managed Care Plan recipients must receive Medi-Cal benefits from plan providers & not from providers who bill through the fee-for-service program. Providers must contact the individual plan for billing instructions.
0049	Provider billing error. Claim line invalid. Verify line charge, procedure code & other line info.	Follow the informational line guidelines* to correctly submit claims. Informational lines that are completed incorrectly may result in a denial.
0334	Valid rate not on file for claim period of service. Contact the Telephone Service Center (TSC).	Claims submitted with dates of service before 10/1/17 will use local codes. Claims submitted with dates of service on or after 10/1/17 must use the HIPAA-compliant billing code sets found on the crosswalks.
9525	The quantity entered on the claim form is missing/invalid.	In order for an informational line to be valid the payable line must represent the quantity of the global visit, while the informational line must be left blank on paper claims; blank(s) (space[s]) or zero(s) are acceptable in the <i>Total Charges</i> field for Computer Media Claims (CMC).
9993	The service code combination is not valid for billing provider.	Verify crosswalk requirements for the HIPAA-compliant billing code set being used. Follow the HIPAA-compliant billing code set and informational line guidelines.*

*For HIPAA-compliant Billing Code Set Guidelines & Informational Line Guidelines, please access the Medi-Cal website and read the entire NewsFlash that was released on Nov 15, 2017 under FQHC Code Conversion Denials.

CHDP Bulletin highlights – for details, please use the following link. <http://www.medi-cal.ca.gov/>, click on Provider Bulletins, scroll to bottom. Click on CHDP Gateway to Health Coverage under Specialty Programs **Bulletin # 155 – September 2017: New Presumptive Eligibility Aid Code 8L**. Effective for dates of service on or after 8/1/17, new aid code 8L (accelerated enrollment) is added to the Medi-Cal eligibility verification system to provide immediate, temporary, fee-for-service, full-scope Medi-Cal benefits for adults ages 19 or older. 8L is valid for CHDP services for both a mother/aid code recipient and an infant using a mother's ID. Furthermore, aid code 8L does not have a Share of Cost (SOC).

Bulletin # 156 – October 2017: New Immunization and Vaccines Frequently Asked Questions (FAQs). New FAQs titled "Medi-Cal Coverage of Immunizations" and "Pharmacy-Administered Vaccines in California" have been published to the FAQs <http://files.medi-cal.ca.gov/pubsdoco/faq.asp> page of the Medi-Cal website.

Bulletin # 157 – November 2017: RTD Generation to be Discontinued in Multiple Phases

In an effort to both increase claims processing efficiency and reduce costs, the Department of Health Care Services (DHCS) will be phasing out the generation of *Resubmission Turnaround Documents* (RTDs) (Form 65-1) over the next 12 months. Providers are encouraged to check the Medi-Cal website for more information.

San Francisco CHDP Staff

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