

## Pediatric Tuberculosis in the United States, 1993–2017

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Pediatric Tuberculosis in the United States, 1993–2017

Surveillance, Epidemiology, and Outbreak Investigations Branch  
Division of Tuberculosis Elimination  
Centers for Disease Control and Prevention (CDC)

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Background: Pediatric Tuberculosis

- Definition of pediatric tuberculosis (TB):
  - TB disease in a person <15 years old
- In 2017,
  - 9,105 TB cases were reported among all age groups
  - 429 (4.7%) were pediatric
    - 53 (0.6%) in ages 0–1
    - 175 (1.9%) in ages 1-4
    - 93 (1.0%) in ages 5-9
    - 108 (1.2%) in ages 10-14

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U.S. TB Cases, All Ages, by Age Group, 1993–2017

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<15 years	1660	1659	1536	1356	1251	1077	1038	964	929	944	911	952	851	803	777	784	647	636	578	487	483	458	440	387	429
15-24 years	1821	1832	1697	1637	1674	1543	1518	1618	1597	1498	1573	1603	1540	1532	1580	1443	1279	1186	1029	1019	979	961	936	937	847
25-44 years	9589	9043	8200	7564	6884	6335	6062	5576	5610	5288	5074	4940	4737	4689	4311	4238	3885	3651	3364	3117	2964	2821	2858	2827	2758
45-64 years	6195	6126	5960	5572	5278	4954	4860	4635	4515	4182	4283	4192	4126	4039	4037	3928	3420	3415	3289	3113	2954	2956	3023	2844	2758
65+ years	5820	5540	5328	5076	4663	4377	4019	3515	3293	3142	2994	2811	2811	2663	2574	2496	2283	2212	2244	2198	2181	2202	2290	2254	2305

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U.S. TB Case Rates\*, All Ages, by Age Group, 1993–2017

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<15 years	2.9	2.9	2.7	2.3	2.2	1.9	1.8	1.6	1.5	1.6	1.5	1.6	1.4	1.3	1.3	1.3	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.6	0.7
15-24 years	5.0	5.1	4.7	4.5	4.6	4.1	4.0	4.1	4.0	3.7	3.8	3.8	3.6	3.6	3.7	3.3	2.9	2.7	2.3	2.3	2.2	2.2	2.1	2.2	2.0
25-44 years	11.6	10.9	9.8	9.0	8.2	7.6	7.3	6.6	6.6	6.3	6.1	5.9	5.7	5.7	5.2	5.1	4.7	4.4	4.1	3.8	3.6	3.4	3.4	3.3	3.2
45-64 years	12.5	12.0	11.4	10.4	9.5	8.7	8.2	7.4	7.0	6.3	6.2	5.9	5.6	5.4	5.2	5.0	4.3	4.2	4.0	3.8	3.6	3.5	3.6	3.4	3.3
65+ years	17.7	16.7	15.8	14.9	13.6	12.7	11.6	10.0	9.3	8.8	8.3	7.8	7.7	7.2	6.8	6.4	5.8	5.5	5.4	5.1	4.9	4.8	4.8	4.6	4.5

\*Rates are per 100,000 persons

Note: Rates presented on a logarithmic scale

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U.S. Pediatric TB Cases by Age Group, 1993–2017

N=22,037

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Age <1 year	156	139	118	102	111	103	96	91	97	101	95	81	80	91	115	116	93	76	72	59	66	46	54	48	53
Age 1–4 years	858	856	776	668	623	535	506	453	446	455	452	468	394	391	352	379	310	289	279	202	229	217	190	176	175
Age 5–9 years	358	395	393	368	305	243	250	222	208	196	195	203	195	159	159	141	140	139	96	109	92	99	88	71	93
Age 10–14 years	288	269	249	218	212	196	186	198	178	192	169	200	182	162	151	148	104	132	131	117	96	96	108	92	108

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U.S. Pediatric TB Case Rates\* by Age Group, 1993–2017

N=22,037

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Age <1 year	4.0	3.6	3.1	2.7	2.9	2.7	2.5	2.4	2.4	2.6	2.4	2.0	2.0	2.3	2.8	2.8	2.3	1.9	1.8	1.5	1.7	1.2	1.4	1.2	1.3
Age 1–4 years	5.4	5.4	4.9	4.3	4.1	3.5	3.3	3.0	2.9	2.9	2.9	3.0	2.5	2.5	2.2	2.3	1.9	1.8	1.7	1.3	1.4	1.4	1.2	1.1	1.1
Age 5–9 years	1.9	2.1	2.1	1.9	1.5	1.2	1.3	1.1	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.4	0.5	0.4	0.3	0.5
Age 10–14 years	1.6	1.4	1.3	1.1	1.1	1.0	1.0	1.0	0.8	0.9	0.8	0.9	0.9	0.8	0.7	0.7	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.5

\*Rates are per 100,000 persons

Note: Rates presented on a logarithmic scale.

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Number of U.S. Pediatric TB Cases among U.S.-Born and Non-U.S.-Born Children, 1993–2017  
 N= 22,037

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Non-U.S.-Born</b>	413	389	354	314	287	254	270	258	273	251	269	283	244	203	210	206	147	156	122	137	100	110	99	101	94
<b>U.S.-Born</b>	1231	1249	1180	1039	960	817	757	704	655	688	642	668	606	600	566	578	500	480	456	349	383	348	341	286	334

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U.S.-Born Pediatric TB Cases by Race/Ethnicity, 1994–2017  
 N=15,186

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>White, non-Hispanic</b>	207	164	141	103	104	100	84	67	82	63	54	52	49	55	38	39	36	41	31	39	32	26	20	13
<b>Black, non-Hispanic</b>	517	477	470	427	334	289	269	238	264	210	202	191	184	155	155	110	113	115	82	90	73	77	78	74
<b>Hispanic</b>	416	440	346	319	303	296	259	289	277	296	342	291	307	285	308	277	257	224	171	164	171	156	132	157
<b>American Indian/ Alaska Native</b>	30	34	36	29	15	15	27	8	13	13	13	12	9	8	10	4	13	12	14	11	4	16	10	11
<b>Asian</b>	66	42	30	50	44	45	45	42	42	59	53	52	49	59	65	65	57	59	42	74	58	62	45	71

Note: Multiple race/ethnicity and unknown not shown; Native Hawaiian and Other Pacific Islander combined with Asian.  
 Graph begins in 1994 to match availability of population data

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U.S.-Born Pediatric TB Case Rates\* by Race/Ethnicity, 1994–2017  
 N=15,186

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>White, non-Hispanic</b>	0.53	0.42	0.37	0.27	0.28	0.27	0.23	0.18	0.22	0.18	0.15	0.15	0.14	0.16	0.11	0.12	0.11	0.12	0.10	0.12	0.10	0.08	0.07	0.04
<b>Black, non-Hispanic</b>	5.55	5.07	5.00	4.62	3.64	3.13	2.91	2.57	2.89	2.35	2.26	2.17	2.12	1.78	1.79	1.30	1.33	1.37	0.99	1.08	0.89	0.94	0.96	0.92
<b>Hispanic</b>	5.67	5.67	4.29	3.92	3.54	3.35	2.84	3.04	2.87	2.91	3.24	2.67	2.73	2.44	2.53	2.17	1.91	1.61	1.26	1.20	1.25	1.12	0.92	1.12
<b>American Indian/ Alaska Native</b>	7.32	12.06	5.86	4.71	2.75	2.47	4.14	1.16	1.87	3.30	3.08	2.74	2.42	2.11	2.76	1.13	2.88	2.75	2.77	1.92	0.69	3.46	2.13	1.95
<b>Asian</b>	5.94	4.85	1.58	2.55	2.08	2.08	2.14	1.93	1.92	2.96	2.78	2.62	2.31	2.68	2.93	2.89	2.33	2.33	1.66	2.84	2.15	2.33	1.68	2.48

\*Rates are per 100,000 persons

Note: Rates presented on a logarithmic scale

Graph begins in 1994 to match availability of population data

Multiple race and American Indian/Alaska Native not shown because of small denominators; Native Hawaiian and Other Pacific Islander combined with Asian

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### Non-U.S.–Born TB Cases by Race-Ethnicity, 1994–2017 N=5,131

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>White, non-Hispanic</b>	23	21	16	32	32	25	20	20	21	19	22	13	15	15	10	8	10	6	4	6	3	3	6	1
<b>Black, non-Hispanic</b>	40	40	44	41	38	53	65	72	64	47	87	72	67	69	73	48	64	42	44	33	32	33	34	34
<b>Hispanic</b>	223	182	166	119	116	132	114	124	123	135	115	104	80	68	48	33	26	31	17	19	17	20	29	27
<b>Asian, non-Hispanic</b>	98	107	82	90	63	56	57	56	43	64	59	53	40	57	74	56	55	42	71	40	55	40	31	32

Note: American Indian/Alaska Native, multiple race/ethnicity and unknown not shown because of small case counts; Native Hawaiian and Other Pacific Islander combined with Asian

Graph begins in 1994 to match availability of population data

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### Non-U.S.–Born Pediatric TB Case Rates\* by Race-Ethnicity, 1994–2017 N=5,131

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>White, non-Hispanic</b>	10.70	10.99	5.47	9.97	7.14	6.39	4.58	4.80	5.08	4.69	6.01	3.64	4.59	4.54	3.42	2.52	2.55	1.58	1.47	1.99	1.04	1.15	2.47	0.39
<b>Black, non-Hispanic</b>	37.14	50.54	50.23	42.66	26.47	45.79	48.13	57.54	42.78	30.92	52.31	44.22	38.79	42.00	34.69	25.98	48.93	27.07	32.58	20.84	13.03	12.30	13.04	13.11
<b>Hispanic</b>	23.26	21.05	18.83	12.50	12.99	13.72	11.55	13.03	10.91	12.73	11.25	10.09	7.02	6.29	4.70	3.60	2.92	4.47	2.24	2.97	2.62	3.51	6.03	3.84
<b>Asian, non-Hispanic</b>	30.39	40.28	16.25	19.91	14.02	13.78	12.05	12.96	9.88	14.70	13.62	12.54	9.30	14.14	15.72	12.46	11.19	9.22	14.97	9.09	12.83	7.90	2.09	5.88

\*Rates are per 100,000 persons

Note: Rates presented on a logarithmic scale

Graph begins in 1994 to match the availability of population data

American Indian/Alaska Native, multiple race/ethnicity and unknown not shown because of small denominators; Native Hawaiian and Other Pacific Islander combined with Asian

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### Pediatric TB Cases among U.S.-Born Children, by Age Group, 1994–2017

N= 15,186

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Age < 1 year	132	110	92	103	88	87	81	85	97	90	77	76	82	108	104	90	71	71	55	65	43	48	44	51
Age 1–4 years	715	657	574	526	453	416	372	359	373	356	371	325	327	287	326	261	252	246	162	197	182	162	147	155
Age 5–9 years	251	277	263	217	172	153	151	122	125	109	124	117	115	96	85	87	89	68	73	66	70	66	51	67
Age 10–14 years	151	136	110	114	104	101	100	89	93	87	96	88	76	75	63	62	68	71	59	55	53	65	44	61

Graph begins in 1994 to match the availability of population data

Note: Cases in U.S.-born children of non-U.S.–born parents are included in the U.S.-born counts

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### Pediatric TB Cases Rates\* among U.S.-Born Children, by Age Group, 1994–2017

N= 15,186

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Age < 1 year	3.3	2.8	2.4	2.7	2.3	2.3	2.1	2.2	2.6	2.6	2.2	1.9	2.1	2.6	2.5	2.1	1.7	1.8	1.4	1.7	1.1	1.3	1.2	1.3
Age 1–4 years	4.4	4.1	3.6	3.4	2.9	2.7	2.4	2.3	2.4	2.2	2.3	2.0	2.0	1.8	2.0	1.6	1.5	1.4	1.0	1.2	1.1	1.0	0.9	1.0
Age 5–9 years	1.3	1.4	1.3	1.1	0.9	0.8	0.8	0.6	0.6	0.6	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3
Age 10–14 years	0.8	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.3

\*Rates are per 100,000 persons

Rates presented on a logarithmic scale

Graph begins in 1994 to match the availability of population data

Note: Cases in U.S.-born children of non-U.S.–born parents are included in the U.S.-born counts

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### Pediatric TB Cases among Non-U.S.–Born\* Children, by Age Group, 1994–2017

N= 5,131

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Age < 1 year	6	8	10	7	14	8	10	12	4	5	4	4	9	7	12	3	5	1	4	1	3	6	4	2
Age 1–4 years	127	118	92	96	79	86	80	86	79	96	97	69	64	65	53	49	37	33	39	32	35	28	29	20
Age 5–9 years	139	115	105	86	70	94	70	86	70	86	78	77	44	63	56	53	50	28	36	26	29	22	20	26
Age 10–14 years	117	113	107	98	91	82	98	89	98	82	104	94	86	75	85	42	64	60	58	41	43	43	48	46

\*Non-U.S.–born refers to persons born outside the United States or its territories or not born to a U.S. citizen

Graph begins in 1994 to match the availability of population data

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### Pediatric TB Cases Rates\* among Non-U.S.-born\*\* Children, by Age Group, 1994–2017

N= 5,131

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Age < 1 year	23.3	106.3	45.1	177.6	46.8	55.7	53.7	69.7	9.3	25.4	9.4	16.2	217.8	32.4	52.8	11.8	33.4	5.6	22.4	16.8	11.3	30.6	28.8	13.6
Age 1–4 years	61.6	56.6	37.8	38.6	32.7	35.1	28.9	25.4	24.7	34.5	32.5	24.1	21.9	25.3	19.6	17.7	12.7	17.2	18.0	18.7	16.7	11.5	10.7	5.6
Age 5–9 years	22.9	22.7	16.6	13.2	10.2	15.4	11.3	15.6	9.8	12.1	11.2	11.3	6.0	9.5	8.2	9.0	7.7	4.6	7.1	5.4	5.4	4.0	3.8	4.3
Age 10–14 years	14.9	16.1	12.3	10.6	9.3	8.1	8.7	8.6	9.3	7.7	10.8	9.2	8.1	7.1	8.3	4.2	6.5	6.6	6.2	4.6	5.1	5.3	5.9	5.6

\*Rates are per 100,000 persons

\*\*Non-U.S.-born refers to persons born outside the United States or its territories or not born to a U.S. citizen

Rates presented on a logarithmic scale

Graph begins in 1994 to match the availability of population data

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### Top Six Countries of Birth for U.S. Pediatric TB Cases, 1993–2017

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Mexico	185	185	153	130	90	94	104	80	92	99	112	77	72	63	48	34	25	19	22	10	10	8	9	10	11
Philippines	39	28	40	25	36	17	15	21	17	14	22	21	14	6	15	16	17	11	7	12	7	11	6	3	4
Somalia	10	9	6	17	11	9	18	17	24	20	8	20	21	16	14	11	7	7	6	8	3	3	1	6	3
Vietnam	33	25	28	15	20	11	12	8	8	8	13	5	5	13	5	6	5	5	6	5	2	2	3	1	0
Ethiopia	9	3	5	6	8	6	6	3	11	4	4	10	7	10	19	16	15	18	10	9	11	11	6	9	4
Haiti	18	10	13	11	7	8	8	5	11	14	12	22	5	6	7	13	4	18	7	4	3	4	3	1	2

Note: cases in U.S.-born children of non-U.S.-born parents are included in U.S.-born counts and thus not displayed in this figure

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### Number of U.S. Pediatric TB Cases among U.S.-Born Children by Parent/Guardian Status, 2010–2017

	2010	2011	2012	2013	2014	2015	2016	2017
U.S. Born with U.S. Born Parents/Guardians	132	143	108	122	106	101	90	82
U.S. Born with Non U.S. born Parents/Guardians*	280	249	202	231	219	211	164	217
U.S. Born with Parents/Guardians with unknown origin	68	64	39	30	23	29	32	35

\*At least one parent/guardian was non-U.S.-born

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U.S. Pediatric TB Case Rates by State, 2013–2017

2013-2017			
States (0 - <0.25)	States 0.25 - < 0.50	States 0.50 - <1.00	States 1.00 +
Connecticut Michigan Montana New Mexico Pennsylvania South Dakota Vermont West Virginia Wisconsin Wyoming	Colorado Indiana Iowa Kansas Kentucky Mississippi Missouri Nebraska New Hampshire Ohio Oregon Rhode Island	Alabama Arizona California Delaware Florida Idaho Illinois Louisiana Maine Maryland Massachusetts New Jersey New York North Carolina North Dakota Oklahoma South Carolina Tennessee Utah Virginia Washington	Alaska Arkansas District of Columbia Georgia Hawaii Minnesota Nevada Texas

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### 2009 TB Case Verification Criteria

- Incident case of disease
- Case verification categories:
  1. Laboratory confirmed cases:
    - Positive result from culture or nucleic acid amplification test or
    - Acid-fast bacillus seen on sputum smear microscopy when culture not attainable
  2. Clinical case definition (all four criteria must be met)
    - Positive result from tuberculin skin test or interferon gamma release assay
    - Signs and symptoms of TB disease
    - Current treatment for TB disease
    - Completed diagnostic evaluation
  3. Provider diagnosis:
    - Diagnosed by health care provider
    - Does not meet all criteria for laboratory or clinical case definitions

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### U.S Pediatric TB Cases by Case Verification Criteria, 1993–2017

N=22,037

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Culture</b>	374	378	341	314	298	241	245	247	264	234	215	234	218	220	214	215	166	164	157	141	166	116	138	122	149
<b>NAA</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	13	9	8	7	9	7	10	10
<b>Smear</b>	16	13	12	11	8	9	14	6	3	6	6	3	8	4	5	2	6	4	5	2	3	2	2	1	2
<b>Clinical Case</b>	920	890	804	746	660	609	532	470	447	477	433	452	400	328	333	336	362	355	345	285	251	269	243	210	222
<b>Provider Diagnosis</b>	350	378	379	285	285	218	247	241	215	227	257	263	225	251	225	230	106	100	62	51	56	62	50	44	46



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U.S. Pediatric TB Cases by Case Verification Criteria and Age Group, Summed and Averaged Over 2013–2017

Age < 1 year, n=267

Laboratory Confirmed	Clinical Case	Provider Diagnosis
50%	29%	21%

Age 1–4 years, n=987

Laboratory Confirmed	Clinical Case	Provider Diagnosis
26%	62%	12%

Age 5–9 years, n=443

Laboratory Confirmed	Clinical Case	Provider Diagnosis
25%	64%	11%

Age 10–14 years, n=509

Laboratory Confirmed	Clinical Case	Provider Diagnosis
49%	45%	6%

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U.S. Pediatric TB Cases by Site of Disease, 1993–2017

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Pulmonary Only</b>	1230	1232	1143	986	900	757	733	690	636	661	622	657	555	505	541	548	440	440	397	333	340	313	285	256	274
<b>Extrapulmonary Only</b>	346	321	307	286	265	247	226	213	204	214	205	225	221	213	180	176	163	150	133	105	103	103	102	94	117
<b>Both Pulmonary and Extrapulmonary</b>	81	106	85	83	86	73	79	60	88	69	84	70	74	85	56	60	43	45	48	48	40	42	53	36	37

Note: Missing and unknown site of disease not included

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U.S. Pediatric TB Cases by Site of Disease and Age Group, Summed and Average Over 2013–2017

	<b>Pulmonary Only</b>	<b>Extrapulmonary Only</b>	<b>Both Pulmonary and Extrapulmonary</b>
<b>Age &lt;1</b>	203	30	34
<b>Age 1–4</b>	705	194	87
<b>Age 5–9</b>	270	137	35
<b>Age 10–14</b>	290	158	52

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Percentage of TB Cases in Children with Any Extrapulmonary Involvement\* by Age Group (Age &lt;5), Summed and Averaged Over 2013–2017

	<b>Lymphatic</b>	<b>Meningeal</b>	<b>Miliary</b>	<b>Bone &amp; Joint</b>	<b>Other</b>
<b>Age &lt;1</b>	7.5	11.2	1.5	0.7	3.0
<b>Age 1–4</b>	17.3	6.4	0.5	1.6	2.6

\*Includes cases that are extrapulmonary only and both, but not pulmonary only.

Cases are counted in mutually exclusive categories if multiple extrapulmonary sites are affected

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Percentage of TB Cases in Children with Any Extrapulmonary Involvement\* by Age Group (Age 5–14), Summed and Averaged Over 2013–2017

	<b>Lymphatic</b>	<b>Meningeal</b>	<b>Miliary</b>	<b>Bone &amp; Joint</b>	<b>Other</b>
<b>Age 5–9</b>	27.5	2.9	0.5	2.3	5.6
<b>Age 10–14</b>	21.4	2.6	0.6	2.8	14.6

\*Includes cases that are extrapulmonary only and both, but not pulmonary only.

Cases are counted in mutually exclusive categories if multiple extrapulmonary sites are affected

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U.S. Pediatric TB Cases by Reason Evaluated, 2010\*–2017

	2010	2011	2012	2013	2014	2015	2016	2017
<b>Employee Testing</b>	4	1	2	4	1	2	3	4
<b>Incidental Laboratory Finding</b>	25	17	16	16	17	22	20	26
<b>Immigrant Exam</b>	19	23	29	24	27	17	17	9
<b>Abnormal Chest X-ray</b>	135	123	95	76	74	60	61	55
<b>TB Symptoms</b>	180	179	155	160	144	142	128	138
<b>Contact Investigation</b>	229	216	166	191	166	180	142	175

\*Reason evaluated was not collected by all reporting areas until 2010

Note: Excludes missing and unknown responses

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Percentage of U.S. Pediatric TB Cases by Reason Evaluated by Age Group (Age <5), Summed and Average Over 2010\*–2017

	<b>Employee Testing</b>	<b>Targeted Testing</b>	<b>Incidental Laboratory Finding</b>	<b>Immigrant Exam</b>	<b>Abnormal Chest X-Ray</b>	<b>TB Symptoms</b>	<b>Contact Investigation</b>
<b>Age &lt; 1</b>	0	0.8	3.2	1.1	16.2	31.4	46.4
<b>Ages 1–4</b>	0.3	3.2	2.9	2.9	19.6	26.0	44.5

\*Reason evaluated was not collected by all reporting areas until 2010

Note: Excludes missing and unknown responses

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Percentage of U.S. Pediatric TB Cases by Reason Evaluated by Age Group (Age 5–14), Summed and Average Over 2010\*–2017

	<b>Employee Testing</b>	<b>Targeted Testing</b>	<b>Incidental Laboratory Finding</b>	<b>Immigrant Exam</b>	<b>Abnormal Chest X-Ray</b>	<b>TB Symptoms</b>	<b>Contact Investigation</b>
<b>Ages 5–9</b>	1.7	3.8	4.2	7.0	15.6	28.1	38.4
<b>Ages 10–14</b>	0.3	5.7	6.8	6.3	15.2	45.4	18.3

\*Reason evaluated was not collected by all reporting areas until 2010

Note: Excludes missing and unknown responses

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Number of Culture-Confirmed U.S. Pediatric TB Cases with Drug Resistance, 1993–2016

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>INH-Only</b>	16	22	17	16	20	12	12	12	14	13	8	18	14	10	10	16	11	9	8	6	19	4	5	9
<b>RIF-Only</b>	1	4	2	1	2	0	0	2	1	0	1	0	2	1	0	3	1	2	0	1	0	0	1	0
<b>MDR</b>	6	6	4	6	4	6	5	1	3	4	3	1	5	4	4	5	3	2	3	3	2	1	0	0

MDR TB = resistance to at least isoniazid and rifampin

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Number of U.S. Pediatric TB Cases by Type of Therapy, 1993–2015

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>DOT* only</b>	366	445	628	639	691	627	585	594	574	608	576	626	548	523	494	534	428	415	386	331	324	318	311
<b>Self-Administered only</b>	1064	843	530	381	250	184	156	129	105	72	57	60	56	38	31	27	31	31	14	19	19	16	19
<b>DOT* and Self-Administered</b>	200	315	342	298	280	252	269	230	241	248	266	244	237	241	248	211	181	187	166	133	131	121	105

\*DOT refers to Directly Observed Therapy

Note: Alive at diagnosis and started on treatment

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For more information, contact CDC  
 1-800-CDC-INFO (232-4636)  
 TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.