

Childhood Immunization Coverage for Washington State 1995-2002

A Report of the National Immunization
Survey and Other Data Sources



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for
Washington State**

1995 – 2002

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and Other Data Sources**

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CHILD Profile

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Background

Since April 1994, the CDC (Centers for Disease Control and Prevention) has been conducting a National Immunization Survey (NIS) to estimate immunization coverage rates for children 19-35 months of age. This survey is administered in all 50 states and 28 urban areas in the United States and is conducted by random digit dialed telephone methodology. Vaccine information given by parents is verified by the providers identified by the parents.

While demographic, child, parent and provider characteristics are included as variables in the dataset, no geographic identifiers are available other than state and Immunization Action Plan (IAP) areas (King County). No other county or other small area information is available.

In order to identify segments of the child population in Washington State at increased risk for underimmunization ('pockets-of-need'), the Department of Health's Immunization Program and Maternal and Child Health Assessment Section conducted an analysis of the NIS public-use dataset using calendar years 1995-2002. This analysis focused on eight variables (child's race/ethnicity, age and firstborn status, maternal age, education and marital status, poverty status of the family, and number of immunization providers identified for the child). We also conducted trend analyses of coverage rates for individual antigens and two vaccination series.

The results of these analyses comprise the main section of this report. Since multivariate analyses of the eight selected variables did not result in any consistent findings on which to base strategic decisions on underimmunized populations, these findings are not included in the report.

Additional sections include reports on The CHILD Profile Immunization Registry and Health Promotion System as well as a six year comparison of school entry and 6th Grade coverage rates from school status reports submitted annually by all schools in the state.

We hope in the future to add chapters on findings from analyses of vaccine distribution and administration data, overall results of AFIX (Assessment, Feedback, Incentive and eXchange) assessments conducted in provider offices as well as immunization coverage information from the major health plans in Washington.

1+ MMR Vaccination

Table 1a: Characteristics of 19-35 month old children with 1+ MMR vaccinations, Washington State from NIS* 2000-2002

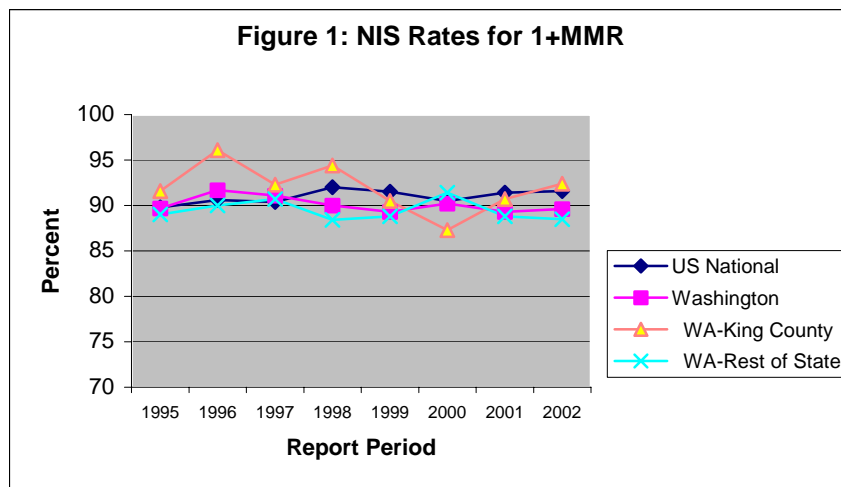
Characteristic	Total (N=1710)	Number 1+ MMR (n=1544)	1+ MMR (%=89.7)	95% CI** (87.9-91.3)
Child's Race/Ethnicity				
White, non-Hispanic	1170	1058	89.4	(87.0-91.3)
Black, non-Hispanic	75	64	85.0	(72.4-92.5)
Hispanic	275	255	93.3	(89.5-95.8)
Other	190	167	87.8	(81.0-92.4)
Child's Age				
19-23 months	513	455	88.9	(85.3-91.8)
24-29 months	592	538	90.3	(87.1-92.8)
30-35 months	605	551	89.9	(86.5-92.5)
Maternal Age				
≤19 years	34	29	84.8	(66.9-93.9)
20-29 years	638	564	87.7	(84.3-90.4)
30+ years	1038	952	91.7	(89.6-93.4)
Maternal Education				
<12 years	196	172	88.8	(83.0-92.8)
12 years	425	382	88.9	(84.9-92.0)
>12 years	307	272	88.8	(84.2-92.2)
college	782	718	91.3	(88.8-93.3)
Mother's Marital Status				
married	1348	1126	90.7	(88.8-92.4)
widowed/divorced	115	97	83.6	(74.1-90.1)
never married	246	220	88.1	(82.2-92.2)
deceased	1	1	100.0	--
Poverty Status				
at/above poverty	1291	1178	90.7	(88.6-92.4)
below poverty	264	232	87.7	(82.2-91.6)
unknown	155	134	87.0	(79.5-92.0)
Firstborn Status of Child				
Yes	967	672	90.9	(88.3-93.0)
No	743	872	88.8	(86.1-91.0)
Number of Providers				
0	2	0	0	--
1	1169	1066	89.4	(87.0-91.4)
2	442	389	90.3	(87.0-92.8)
3+	97	89	92.1	(83.9-96.3)

* National Immunization Survey

** 95% Confidence Interval

Table 1b: NIS Rates for 1+ MMR Vaccinations

	US National		Washington		WA-King County		WA-Rest of State	
1995	89.8	+/-0.9	89.7	+/-3.7	91.6	+/-3.9	89.0	+/-4.9
1996	90.6	+/-0.7	91.7	+/-3.4	96.1	+/-2.3	90.0	+/-4.6
1997	90.4	+/-0.7	91.1	+/-2.7	92.3	+/-3.4	90.7	+/-3.5
1998	92.0	+/-0.6	90.0	+/-3.1	94.4	+/-3.2	88.4	+/-4.1
1999	91.5	+/-0.6	89.3	+/-2.8	90.5	+/-3.7	88.8	+/-3.6
2000	90.5	+/-0.6	90.2	+/-2.6	87.3	+/-4.2	91.4	+/-3.2
2001	91.4	+/-0.6	89.3	+/-3.2	90.7	+/-3.8	88.8	+/-4.3
2002	91.6	+/-0.7	89.6	+/-3.1	92.4	+/-3.3	88.5	+/-4.1



Summary:

- Washington State children 19-35 months of age who had received at least one MMR vaccination did not differ significantly by their race/ethnicity, age or firstborn status or by the age, educational level or marital status of their mothers, poverty status or number of providers identified.
- Washington's coverage rates for 1+ MMR vaccination did not change significantly from 1995 to 2002.
- Washington's rates for MMR vaccination coverage are similar to the national rates.

3+ Polio Vaccinations

**Table 2a: Characteristics of 19-35 month old children with 3+ polio vaccinations
Washington State from NIS* 2000-2002**

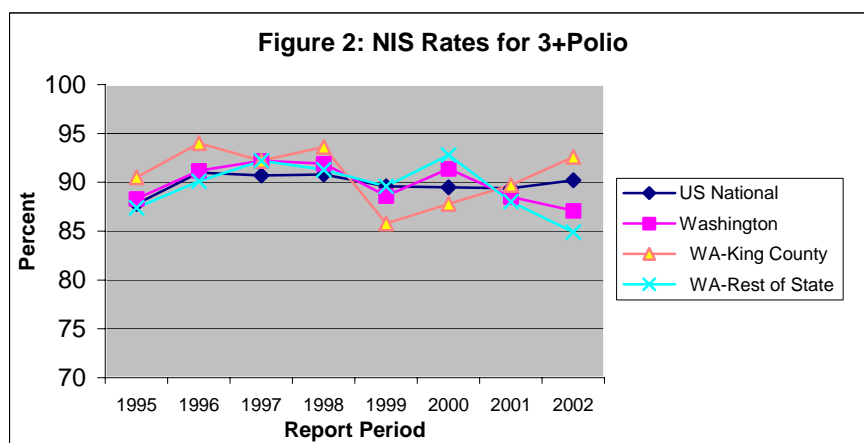
Characteristic	Total (N=1710)	Number 3+ polio (n=1539)	3+ polio (%=89.0)	95% CI** (87.0-90.7)
Child's Race/Ethnicity				
White, non-Hispanic	1170	1050	88.6	(86.2-90.7)
Black, non-Hispanic	75	59	78.5	(64.5-88.1)
Hispanic	275	257	93.5	(89.3-96.2)
Other	190	173	87.8	(79.9-92.9)
Child's Age				
19-23 months	513	450	87.1	(83.1-90.3)
24-29 months	592	534	88.9	(85.5-91.6)
30-35 months	605	555	90.7	(87.5-93.2)
Maternal Age				
≤19 years	34	31	88.4	(69.3-96.2)
20-29 years	638	554	85.4	(81.8-88.4)
30+ years	1038	954	92.0	(89.9-93.7)
Maternal Education				
<12 years	196	179	90.4	(84.0-94.4)
12 years	425	379	88.2	(84.0-91.3)
>12 years	307	269	87.7	(83.0-91.2)
college	782	712	89.8	(86.9-92.1)
Mother's Marital Status				
married	1348	1231	90.6	(88.5-92.3)
widowed/divorced	115	96	83.6	(74.0-90.1)
never married	246	211	84.2	(77.8-89.0)
deceased	1	1	100.0	--
Poverty Status				
at/above poverty	1291	1173	90.1	(87.9-91.9)
below poverty	264	230	86.5	(80.9-90.7)
unknown	155	136	86.0	(77.7-91.5)
Firstborn Status of Child				
Yes	967	674	89.6	(86.6-91.9)
No	743	865	88.5	(85.8-90.8)
Number of Providers				
0	2	0	0	--
1	1169	1056	88.5	(86.0-90.6)
2	442	394	90.2	(86.7-92.9)
3+	97	89	90.1	(80.5-95.2)

* National Immunization Survey

** 95% Confidence Interval

Table 2b: NIS Rates for 3+ Polio Vaccinations

	US		Washington		WA-King County		WA-Rest of State	
1995	87.8	+/-0.9	88.3	+/-3.9	90.5	+/-4.1	87.4	+/-5.2
1996	90.1	+/-0.6	91.2	+/-3.1	94.0	+/-3.1	90.1	+/-4.1
1997	90.7	+/-0.6	92.2	+/-2.8	92.2	+/-3.6	92.2	+/-3.6
1998	90.8	+/-0.7	91.9	+/-2.8	93.6	+/-3.2	91.3	+/-3.6
1999	89.6	+/-0.6	88.6	+/-2.10	85.8	+/-4.8	89.6	+/-3.7
2000	89.5	+/-0.6	91.4	+/-2.6	87.8	+/-4.2	92.8	+/-3.2
2001	89.4	+/-0.7	88.5	+/-3.4	89.7	+/-4.3	88.0	+/-4.4
2002	90.2	+/-0.7	87.1	+/-3.6	92.6	+/-3.4	84.9	+/-4.8



Summary:

- A lower percentage of Black, non-Hispanic children ages 19-35 months have received 3 or more polio vaccinations than children who are white non-Hispanic or Hispanic.
- Children 19-35 months of age who had received 3 or more polio vaccinations did not differ significantly by their age or firstborn status, the age, marital status or educational level of their mother, poverty status or number of providers.
- There was a slight trend toward lower coverage with 3+ polio vaccinations from 1995 to 2002 in Washington State although this was not statistically significant. This slight dip in polio coverage was not seen for the Seattle-King County urban area or for the United States as a whole.
- Washington's rates for polio vaccination coverage are similar to the national rates.

3+ Hib Vaccinations

**Table 3a: Characteristics of 19-35 month old children with 3+ Hib vaccinations
Washington State from NIS* 2000-2002**

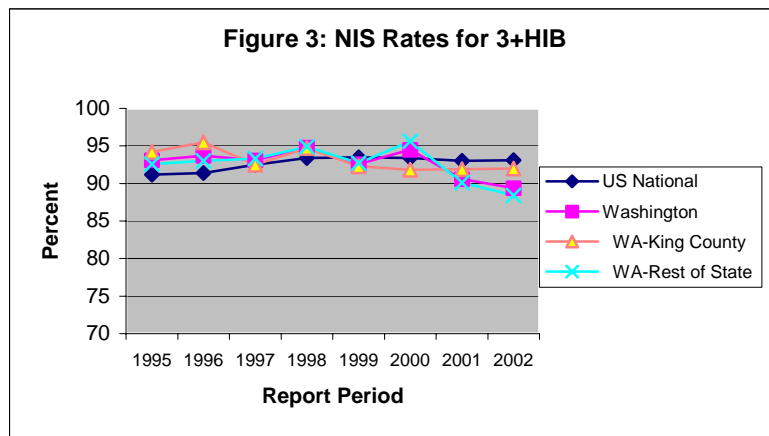
Characteristic	Total (N=1710)	Number 3+ hib (n=1590)	3+ hib (%=91.5)	95% CI** (89.6-93.1)
Child's Race/Ethnicity				
White, non-Hispanic	1170	1093	91.2	(88.6-93.2)
Black, non-Hispanic	75	64	88.3	(78.4-94.0)
Hispanic	275	262	95.3	(91.3-97.5)
Other	190	171	88.6	(81.4-93.2)
Child's Age				
19-23 months	513	477	91.6	(87.7-94.4)
24-29 months	592	554	92.8	(89.8-95.0)
30-35 months	605	559	90.1	(86.3-92.9)
Maternal Age				
≤19 years	34	32	90.4	(73.1-97.0)
20-29 years	638	570	87.6	(83.9-90.5)
30+ years	1038	989	94.9	(92.8-96.4)
Maternal Education				
<12 years	196	180	88.6	(80.6-93.6)
12 years	425	389	90.5	(86.4-93.5)
>12 years college	307	284	92.0	(87.8-94.8)
Mother's Marital Status				
married	1348	995	74.0	(71.1-76.6)
widowed/divorced	115	69	58.5	(48.0-68.4)
never married	246	160	63.5	(56.0-70.4)
deceased	1	1	100	--
Poverty Status				
at/above poverty	1291	1220	93.8	(91.4-95.2)
below poverty	264	230	85.0	(78.3-89.9)
unknown	155	140	87.9	(79.4-93.2)
Firstborn Status of Child				
Yes	967	698	93.0	(90.4-95.0)
No	743	892	90.4	(87.5-92.7)
Number of Providers				
0	2	0	0	--
1	1169	1093	91.7	(89.4-93.6)
2	442	404	91.2	(87.1-94.1)
3+	97	93	91.8	(75.9-97.6)

* National Immunization Survey

** 95% Confidence Interval

Table 3b: NIS Rates for 3+ Hib Vaccinations

	US National		Washington		WA-King County		WA-Rest of State	
1995	91.2	+/-0.8	93.1	+/-3.1	94.2	+/-3.3	92.6	+/-4.2
1996	91.4	+/-0.7	93.7	+/-2.6	95.5	+/-2.6	93.0	+/-3.5
1997	92.5	+/-0.6	93.1	+/-2.6	92.5	+/-3.6	93.3	+/-3.4
1998	93.4	+/-0.6	94.8	+/-2.2	94.7	+/-2.9	94.9	+/-2.8
1999	93.5	+/-0.5	92.6	+/-2.7	92.3	+/-3.9	92.7	+/-3.5
2000	93.4	+/-0.5	94.5	+/-2.2	91.8	+/-3.5	95.6	+/-2.7
2001	93.0	+/-0.6	90.6	+/-3.1	91.9	+/-4	90.1	+/-4.1
2002	93.1	+/-0.6	89.4	+/-3.6	92.0	+/-3.9	88.4	+/-4.7



Summary:

- Children 19-35 months of age whose mothers were married or over 30 years of age were significantly more likely to have received 3+ Hib vaccinations than children whose mothers were 20-29 years of age or whose mothers were widowed, divorced or never married.
- Washington State children 19-35 months of age were significantly less likely to have received 3+ Hib vaccinations if they were below the poverty level than children at or above the poverty level.
- Washington children who had received 3+ Hib vaccinations did not differ significantly by race/ethnicity, age or firstborn status or by the educational level of their mothers or number of providers identified.
- Although Washington's coverage rates for 3+ Hib vaccinations declined slightly between 2000 and 2002, this change was not statistically significant.
- Washington's coverage rates for 3+ Hib vaccinations for 19-35 month old children are similar to the national rates.

3+ HepB Vaccinations

**Table 4a: Characteristics of 19-35 month old children with 3+ HepB vaccinations
Washington State from NIS* 2000-2002**

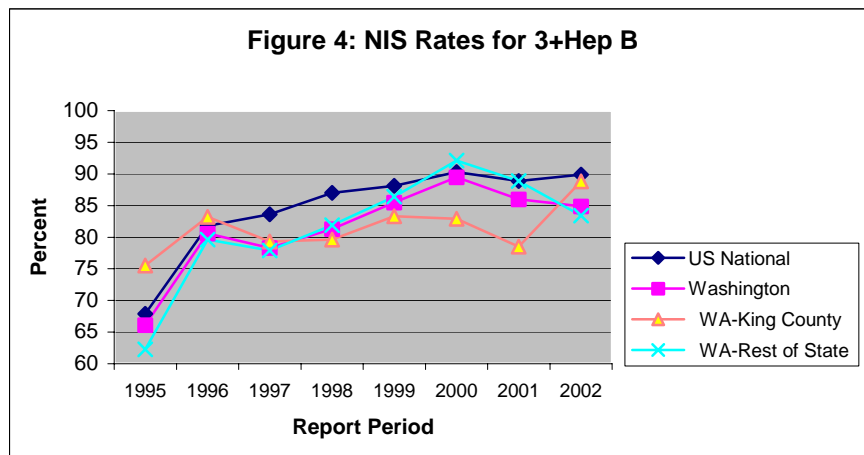
Characteristic	Total (N=1710)	Number 3+HepB (n=1495)	3+ HepB (%=86.8)	95% CI** (84.7-88.7)
Child's Race/Ethnicity				
White, non-Hispanic	1170	1020	86.0	(83.2-88.3)
Black, non-Hispanic	75	63	84.3	(72.3-91.7)
Hispanic	275	251	92.8	89.1-95.4)
Other	190	161	83.4	75.8-89.1)
Child's Age				
19-23 months	513	443	86.3	(82.2-89.6)
24-29 months	592	524	88.3	(84.8-91.0)
30-35 months	605	528	85.9	(82.0-89.1)
Maternal Age				
≤19 years	34	30	85.8	(66.9-94.7)
20-29 years	638	557	85.9	(82.2-88.9)
30+ years	1038	908	87.7	(85.0-89.9)
Maternal Education				
<12 years	196	175	88.0	((80.7-92.8)
12 years	425	376	87.0	(82.6-90.5)
>12 years	307	260	85.2	(80.4-89.0)
college	782	684	86.9	(83.9-89.5)
Mother's Marital Status				
married	1348	1192	88.2	(86.0-90.2)
widowed/divorced	115	95	80.4	(70.3-87.6)
never married	246	207	83.6	(76.9-88.6)
deceased	1	1	100	--
Poverty Status				
at/above poverty	1291	1134	87.9	(85.6-89.8)
below poverty	264	228	83.6	(76.8-88.7)
unknown	155	133	85.6	(77.5-91.1)
Firstborn Status of Child				
Yes	967	668	89.2	(86.3-91.6)
No	743	827	85.0	(82.0-87.7)
Number of Providers				
0	2	0	0	--
1	1169	1016	86.5	(84.0-88.7)
2	442	388	87.0	(82.5-90.4)
3+	97	91	91.2	(76.0-97.1)

* National Immunization Survey

** 95% Confidence Interval

Table 4b: NIS Rates for 3+ HepB Vaccinations

	US National		Washington		WA-King County		WA-Rest of State	
1995	67.9	+/-1.3	66.1	+/-5.4	75.5	+/-5.7	62.3	+/-7.1
1996	81.8	+/-0.9	80.6	+/-4.1	83.2	+/-4.8	79.6	+/-5.3
1997	83.6	+/-0.8	78.3	+/-3.9	79.3	+/-5.0	77.9	+/-5.1
1998	87.0	+/-0.7	81.3	+/-3.7	79.6	+/-5.3	81.9	+/-4.6
1999	88.1	+/-0.7	85.5	+/-3.4	83.3	+/-4.8	86.4	+/-4.3
2000	90.3	+/-0.6	89.5	+/-2.8	82.9	+/-5.1	92.1	+/-3.3
2001	88.9	+/-0.7	86.0	+/-3.4	78.5	+/-5.5	88.9	+/-4.2
2002	89.9	+/-0.7	84.9	+/-4.0	88.8	+/-4.3	83.4	+/-5.2



Summary:

- Hispanic children 19-35 months of age were significantly more likely to have received 3+ hepatitis B vaccinations than children who were white, non-Hispanic.
- Washington’s children 19-35 months of age who had received 3+ hepatitis B vaccinations did not differ significantly by age, or firstborn status or by their mothers’ age, educational level or marital status or by poverty status or the number of providers identified.
- Washington’s coverage rates for 3+ hepatitis B vaccinations for 19-35 month old children have shown an increasing trend and were significantly higher in 1996-2002 than in 1995.
- Washington’s coverage rates for 3+ hepatitis B vaccinations for 19-35 month old children are similar to the national rates.

1+ Varicella Vaccinations

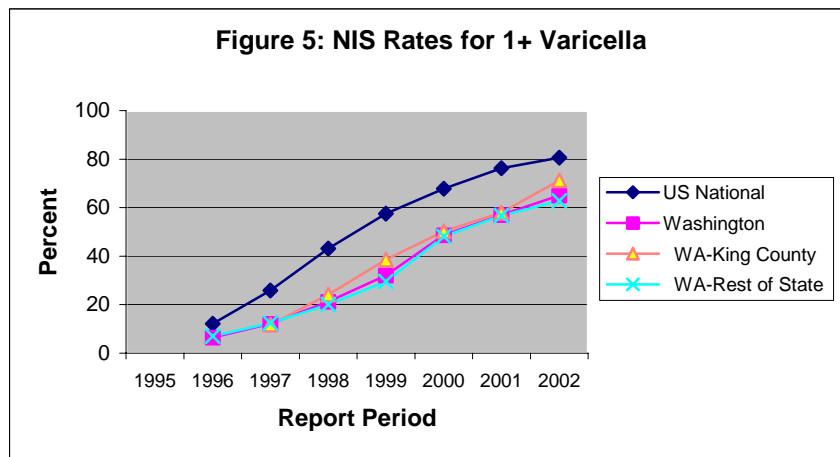
Table 5a: Characteristics of 19-35 month old children with 1+ varicella vaccinations, Washington State from NIS* 2000-2002				
Characteristic	Total (N=1710)	Number 1+ varicella (n=1015)	1+ varicella (%=57.0)	95% CI** (54.2-59.7)
Child's Race/Ethnicity				
White, non-Hispanic	1170	701	57.1	(53.7-60.5)
Black, non-Hispanic	75	42	49.0	(35.4-62.8)
Hispanic	275	153	55.5	(48.9-61.8)
Other	190	119	61.8	(53.3-69.7)
Child's Age				
19-23 months	513	297	54.0	(48.8-59.1)
24-29 months	592	363	59.9	(55.3-64.5)
30-35 months	605	355	56.7	(52.1-61.2)
Maternal Age				
≤19 years	34	22	70.0	(51.6-83.7)
20-29 years	638	334	50.7	(46.2-55.1)
30+ years	1038	659	61.6	(58.1-65.0)
Maternal Education				
<12 years	196	96	49.2	(41.2-57.2)
12 years	425	236	53.9	(48.4-59.2)
>12 years	307	173	56.1	(49.9-62.1)
college	782	510	63.5	(59.6-67.2)
Mother's Marital Status				
married	1348	823	58.2	(55.1-61.3)
widowed/divorced	115	58	48.6	(38.4-58.9)
never married	246	134	55.6	(48.3-62.7)
deceased	1	0	0	--
Poverty Status				
at/above poverty	1291	789	59.1	(55.9-62.2)
below poverty	264	133	48.7	(41.8-55.7)
unknown	155	93	57.4	(48.2-66.1)
Firstborn Status of Child				
Yes	967	476	62.0	(57.8-66.0)
No	743	539	53.2	(49.5-56.9)
Number of Providers				
0	2	0	0	--
1	1169	685	56.7	(53.4-60.0)
2	442	263	58.9	(53.5-64.1)
3+	97	57	52.3	(40.4-64.0)

* National Immunization Survey

** 95% Confidence Interval

Table 5b: NIS Rates for 1+ Varicella Vaccinations

	US National		Washington		WA-King County		WA-Rest of State	
1995								
1996	12.2	+/-0.7	6.4	+/-2.2			7.0	+/-2.9
1997	25.8	+/-0.9	12.2	+/-3.0	11.7	+/-3.8	12.4	+/-3.8
1998	43.2	+/-1.0	21.2	+/-3.7	24.1	+/-5.5	20.0	+/-4.6
1999	57.5	+/-1.0	32.1	+/-4.3	38.5	+/-5.8	29.6	+/-5.6
2000	67.8	+/-0.9	48.7	+/-4.7	50.2	+/-6.4	48.1	+/-6.0
2001	76.3	+/-0.8	57.0	+/-4.8	57.9	+/-6.3	56.7	+/-6.2
2002	80.6	+/-0.9	65.1	+/-5.1	71.2	+/-5.8	62.8	+/-6.7



Summary:

- Washington’s children 19-35 months of age whose mothers were at least 30 years old or who had a college education were more likely to have received at least one varicella vaccination than children whose mothers were 20-29 years of age or who had 12 years or less of education.
- Washington’s children 19-35 months of age who were below poverty were less likely to have received at least one varicella vaccination than children who were at or above poverty level.
- Firstborn children 19-35 months of age in Washington were more likely to have received at least one varicella vaccination than children who were born later.
- Washington’s children 19-35 months of age who had received 1+ varicella vaccinations did not differ significantly by race/ethnicity or age, or by their mothers’ marital status or by the number of providers identified.
- Washington’s coverage rate for varicella vaccination has increased significantly and continuously from 1995 to 2002. However, as the coverage rose to above 50%, the rate of increase slowed.
- Since 1996, Washington’s coverage rate for 1+ varicella vaccinations has been below the national rate.

3+ DTaP Vaccinations

**Table 6a: Characteristics of 19-35 month old children with 3+ DTaP vaccinations
Washington State from NIS* 2000-2002**

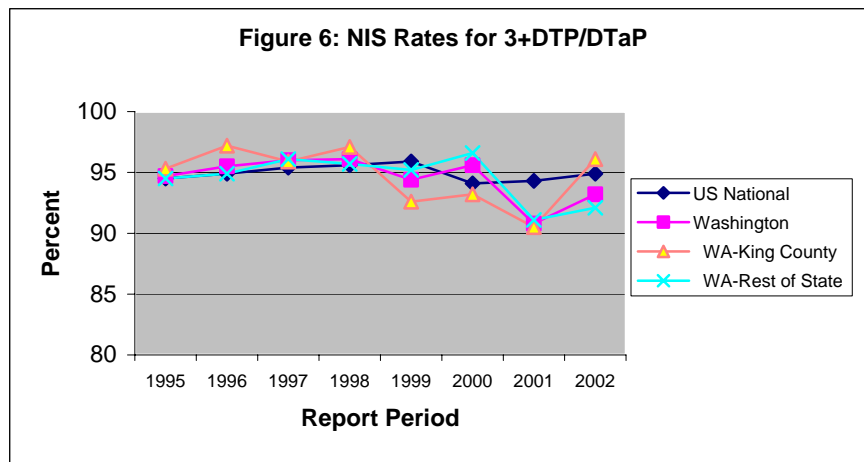
Characteristic	Total (N=1710)	Number 3+ DTaP (n=1602)	3+ DTaP (%=93.2)	95% CI** (91.6-94.5)
Child's Race/Ethnicity				
White, non-Hispanic	1170	1097	93.0	(91.0-94.6)
Black, non-Hispanic	75	67	91.1	(81.5-96.0)
Hispanic	275	259	94.8	(91.5-96.9)
Other	190	179	92.8	(86.1-96.4)
Child's Age				
19-23 months	513	471	92.4	(89.3-94.6)
24-29 months	592	563	93.9	(90.9-95.9)
30-35 months	605	568	93.4	(90.5-95.4)
Maternal Age				
≤19 years	34	32	92.6	(74.5-98.2)
20-29 years	638	589	91.5	(88.5-93.8)
30+ years	1038	981	94.7	(92.9-96.0)
Maternal Education				
<12 years	196	189	92.3	(87.1-95.5)
12 years	425	401	93.9	(90.5-96.1)
>12 years	307	286	91.9	(87.6-94.8)
college	782	735	93.6	(91.2-95.4)
Mother's Marital Status				
married	1348	1267	93.6	(91.8-95.0)
widowed/divorced	115	104	88.7	(79.5-94.1)
never married	246	230	93.6	(89.1-96.3)
deceased	1	1	100	--
Poverty Status				
at/above poverty	1291	1219	94.1	(92.3-95.4)
below poverty	264	246	93.2	(88.8-96.0)
unknown	155	137	88.0	(80.6-92.8)
Firstborn Status of Child				
Yes	967	700	93.4	(90.9-95.3)
No	743	902	93.1	(90.9-94.7)
Number of Providers				
0	2	0	0	--
1	1169	1099	92.8	(90.7-94.5)
2	442	410	94.0	(91.3-95.9)
3+	97	93	95.3	(87.6-98.3)

* National Immunization Survey

** 95% Confidence Interval

Table 6b: NIS Rates for 3+ DTP/DTaP Vaccinations

	US National		Washington		WA-King County		WA-Rest of State	
1995	94.5	+/-0.7	94.7	+/-2.9	95.3	+/-3.1	94.5	+/-3.8
1996	94.9	+/-0.5	95.5	+/-2.3	97.2	+/-2.0	94.9	+/-3.1
1997	95.4	+/-0.5	96.0	+/-2.2	95.9	+/-2.6	96.1	+/-2.9
1998	95.6	+/-0.5	96.1	+/-1.9	97.1	+/-2.4	95.7	+/-2.5
1999	95.9	+/-0.4	94.4	+/-2.2	92.6	+/-3.8	95.2	+/-2.7
2000	94.1	+/-0.5	95.6	+/-1.7	93.2	+/-3.1	96.6	+/-2.0
2001	94.3	+/-0.5	90.8	+/-3.1	90.5	+/-4.1	91.1	+/-3.9
2002	94.9	+/-0.6	93.2	+/-2.6	96.1	+/-2.4	92.1	+/-3.5



Summary:

- Washington’s children 19-35 months of age who had received 3+ DTaP vaccinations did not differ significantly by race/ethnicity, age, or firstborn status or by their mothers’ age, educational level or marital status or by poverty status or the number of providers identified.
- Although the overall trend from 1995 through 2002 is not statistically significant, there has been a slight decrease in coverage since 1998 driven by the low rate seen in 2001. Vaccine shortages may have contributed to this dip although a similar decrease was not noted nationally.
- In general, Washington’s coverage rates for 3+ DTP/DTaP are similar to the national rates.

4+ DTaP Vaccinations

**Table 7a: Characteristics of 19-35 month old children with 4+ DTaP vaccinations
Washington State from NIS* 2000-2002**

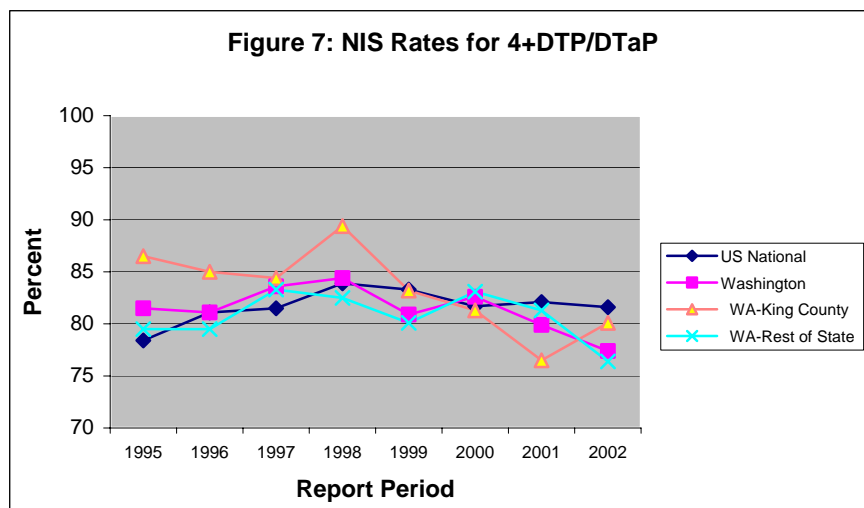
Characteristic	Total (N=1710)	Number 4+ DTaP (n=1384)	4+ DTaP (%=80.0)	95% CI** (77.6-82.2)
Child's Race/Ethnicity				
White, non-Hispanic	1170	951	80.5	(77.6-83.1)
Black, non-Hispanic	75	50	62.4	(47.7-75.1)
Hispanic	275	223	81.7	(76.2-86.2)
Other	190	160	80.7	(72.4-87.0)
Child's Age				
19-23 months	513	369	72.9	(68.2-77.2)
24-29 months	592	494	82.6	(78.6-86.0)
30-35 months	605	521	83.6	(79.5-87.0)
Maternal Age				
≤19 years	34	27	81.6	(63.7-91.8)
20-29 years	638	485	74.6	(70.4-78.4)
30+ years	1038	872	84.4	(81.7-86.7)
Maternal Education				
<12 years	196	155	77.9	(70.1-84.2)
12 years	425	341	79.6	(74.8-83.7)
>12 years	307	237	77.2	(71.4-82.0)
college	782	651	82.4	(79.1-85.3)
Mother's Marital Status				
married	1348	1120	83.0	(80.5-85.2)
widowed/divorced	115	81	69.9	(59.6-78.6)
never married	246	182	71.3	(63.8-77.8)
deceased	1	1	100	--
Poverty Status				
at/above poverty	1291	1067	82.0	(79.4-84.4)
below poverty	264	194	72.8	(66.0-78.7)
unknown	155	123	78.9	(70.4-85.5)
Firstborn Status of Child				
Yes	967	617	82.1	(78.6-85.2)
No	743	767	78.3	(75.1-81.3)
Number of Providers				
0	2	0	0	--
1	1169	966	81.1	(78.2-83.7)
2	442	338	77.4	(72.6-81.6)
3+	97	80	80.0	(67.1-88.7)

* National Immunization Survey

** 95% Confidence Interval

Table 7b: NIS Rates for 4+ DTP/DTaP Vaccinations

	US National		Washington		WA-King County		WA-Rest of State	
1995	78.4	+/-1.2	81.5	+/-4.7	86.5	+/-4.6	79.5	+/-6.3
1996	81.1	+/-0.9	81.1	+/-4.3	85.0	+/-4.6	79.5	+/-5.6
1997	81.5	+/-0.9	83.6	+/-3.6	84.4	+/-4.8	83.3	+/-4.7
1998	83.9	+/-0.8	84.4	+/-3.5	89.4	+/-4.3	82.5	+/-4.6
1999	83.3	+/-0.8	80.9	+/-3.7	83.2	+/-4.9	80.1	+/-4.8
2000	81.7	+/-0.8	82.6	+/-3.6	81.3	+/-4.9	83.1	+/-4.6
2001	82.1	+/-0.8	79.9	+/-4.0	76.5	+/-5.8	81.3	+/-5.1
2002	81.6	+/-0.9	77.4	+/-4.6	80.1	+/-5.1	76.4	+/-6.1



Summary:

- A lower percentage of Black, non-Hispanic children ages 19-35 months have received 4 or more DTaP vaccinations than children who are Hispanic or white, non-Hispanic.
- A lower percentage of children ages 19-23 months have received 4 or more DTaP vaccinations than children who are older than 24 months.
- Children 19-35 months of age whose mothers are married are more likely to have received 4+ DTaP vaccinations than children whose mothers are widowed or divorced or who had never married.
- A higher percentage of children 19-35 months of age who are at or above the poverty level have received 4+ DTaP vaccinations than children below the poverty level.
- Children ages 19-35 months who had received 4 or more DTaP vaccinations did not differ by firstborn status, the age or educational level or their mother or by the number of providers identified.
- Overall, there has been a statistically significant trend towards lower coverage rates for 4+ DTP/DTaP vaccinations from 1995 through 2002.
- Washington's coverage rates for 4+ DTaP vaccinations are similar to the national rates.

4-3-1 (4DTaP, 3Polio, 1MMR) Vaccination Series

**Table 8a: Characteristics of 19-35 month old children with 4-3-1 vaccination series
Washington State from NIS* 2000-2002**

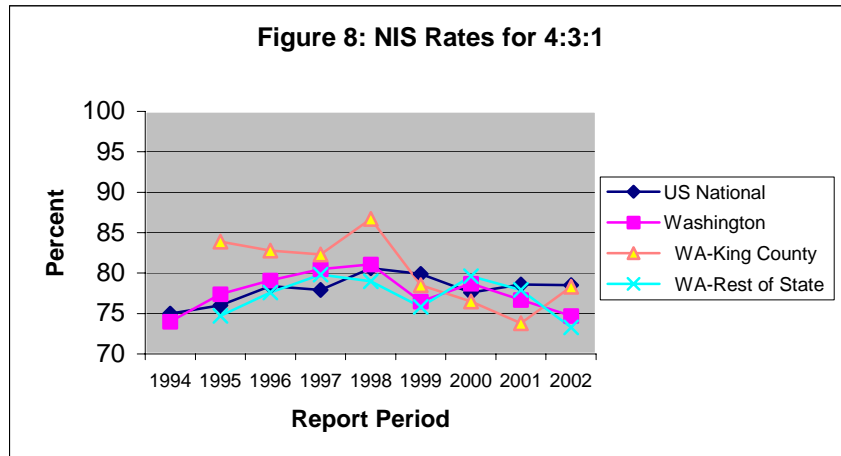
Characteristic	Total (N=1710)	Number 4-3-1 vaccination series (n=1325)	4-3-1 vaccination series (%=76.7)	95% CI** (74.2-79.0)
Child's Race/Ethnicity				
White, non-Hispanic	1170	912	77.2	(74.2-79.9)
Black, non-Hispanic	75	48	61.4	(46.7-74.2)
Hispanic	275	217	79.0	(73.2-83.8)
Other	190	148	75.9	(67.6-82.6)
Child's Age				
19-23 months	513	353	70.3	(65.5-74.8)
24-29 months	592	468	78.1	(73.9-81.8)
30-35 months	605	504	81.0	(76.8-84.6)
Maternal Age				
≤19 years	34	25	76.1	(57.6-88.2)
20-29 years	638	463	71.5	(67.1-75.4)
30+ years	1038	837	81.1	(78.3-83.7)
Maternal Education				
<12 years	196	147	74.9	(67.0-81.4)
12 years	425	327	76.6	(71.6-80.9)
>12 years	307	228	74.5	(68.6-79.6)
college	782	623	78.6	(75.1-81.7)
Mother's Marital Status				
married	1348	1072	79.5	(76.9-81.9)
widowed/divorced	115	78	67.5	(57.1-76.5)
never married	246	174	68.3	(60.8-74.9)
deceased	1	1	100	--
Poverty Status				
at/above poverty	1291	1019	78.3	(75.5-80.8)
below poverty	264	189	71.3	(64.4-77.3)
unknown	155	117	75.6	(66.9-82.5)
Firstborn Status of Child				
Yes	967	582	78.0	(74.2-81.3)
No	743	743	75.8	(72.4-78.9)
Number of Providers				
0	2	0	0	--
1	1169	919	77.4	(74.4-80.1)
2	442	328	75.4	(70.5-79.7)
3+	97	78	76.5	(63.4-85.9)

* National Immunization Survey

** 95% Confidence Interval

Table 8b: NIS Rates for 4-3-1 Vaccination Series

	US National		Washington		WA-King County		WA-Rest of State	
1994	75.0	+/-1.2	74.0	+/-4.9				
1995	76.0	+/-1.2	77.4	+/-5.0	83.9	+/-5.0	74.7	+/-6.6
1996	78.4	+/-0.9	79.1	+/-4.4	82.8	+/-4.8	77.6	+/-5.8
1997	77.9	+/-0.9	80.5	+/-3.8	82.3	+/-5.0	79.8	+/-4.9
1998	80.6	+/-0.9	81.1	+/-3.8	86.7	+/-4.6	79.0	+/-5.0
1999	79.9	+/-0.8	76.5	+/-3.9	78.5	+/-5.3	75.8	+/-5.0
2000	77.6	+/-0.9	78.7	+/-3.8	76.5	+/-5.4	79.6	+/-4.8
2001	78.6	+/-0.9	76.7	+/-4.2	73.8	+/-5.9	77.9	+/-5.3
2002	78.5	+/-1.0	74.7	+/-4.7	78.3	+/-5.3	73.3	+/-6.2



Summary:

- A lower percentage of children ages 19-23 months have received the 4-3-1 series of vaccinations than children who are older than 24 months.
- A higher percentage of children whose mothers are over 30 years of age or who are married have received the 4-3-1 series of vaccinations than children whose mothers are 20-29 years of age or who have been widowed or divorced or who had never married.
- Washington’s children ages 19-35 months of age who had received the 4-3-1 vaccination series did not differ significantly by race/ethnicity, firstborn status, poverty status, number of providers identified or by the educational level of their mother.
- Washington’s coverage rates of 19-35 month old children for the 4-3-1 series of vaccinations from 1995-2002 showed an apparent decline, particularly since 1998, although this trend is not statistically significant.
- Washington’s coverage rates for the 4-3-1 series of vaccinations for 19-35 month old children are similar to the national rates.

4-3-1-3-3 (4DTaP, 3Polio, 1MMR, 1HepB, 1Hib) Vaccination Series

Table 9a: Characteristics of 19-35 month old children with 4-3-1-3-3 vaccination series Washington State from NIS* 2000-2002

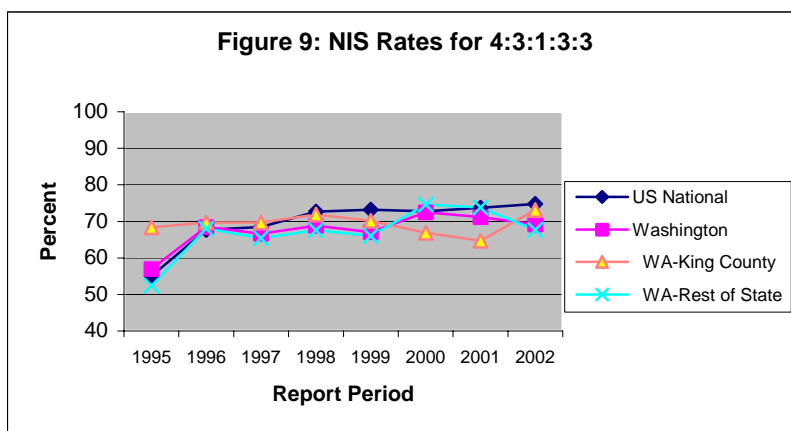
Characteristic	Total (N=1710)	Number 4-3-1-3-3 vaccination series (n=1539)	4-3-1-3-3 vaccination series (%=71.0)	95% CI** (68.3-73.5)
Child's Race/Ethnicity				
White, non-Hispanic	1170	846	71.2	(67.9-74.2)
Black, non-Hispanic	75	46	57.8	(43.4-71.0)
Hispanic	275	203	74.8	(68.9-80.0)
Other	190	130	68.4	(60.1-75.7)
Child's Age				
19-23 months	513	324	64.0	(58.9-68.8)
24-29 months	592	436	73.4	(69.0-77.3)
30-35 months	605	465	74.8	(70.4-78.8)
Maternal Age				
≤19 years	34	24	71.5	(52.4-85.1)
20-29 years	638	433	66.4	(61.9-70.5)
30+ years	1038	768	74.8	(71.6-77.7)
Maternal Education				
<12 years	196	137	68.5	(60.2-75.7)
12 years	425	308	71.2	(66.0-76.0)
>12 years	307	207	68.6	(62.5-74.0)
college	782	573	72.9	(69.2-76.3)
Mother's Marital Status				
married	1348	995	74.0	(71.1-76.6)
widowed/divorced	115	69	58.5	(48.0-68.4)
never married	246	160	63.5	(56.0-70.4)
deceased	1	1	100	--
Poverty Status				
at/above poverty	1291	934	72.1	(69.1-74.9)
below poverty	264	179	66.5	(59.4-73.0)
unknown	155	112	71.5	(62.5-79.1)
Firstborn Status of Child				
Yes	967	542	72.4	(68.5-76.1)
No	743	683	69.9	(66.3-73.2)
Number of Providers				
0	2	0	0	--
1	1169	844	71.5	(68.4-74.5)
2	442	304	68.6	(63.3-73.5)
3+	97	77	76.1	(63.1-85.5)

* National Immunization Survey

** 95% Confidence Interval

Table 9b: NIS Rates for 4-3-1-3-3 Vaccination Series

	US National		Washington		WA-King County		WA-Rest of State	
1995	55.1	+/-1.4	57.0	+/-5.5	68.4	+/-6.3	52.4	+/-7.2
1996	67.7	+/-1.0	68.5	+/-4.8	69.7	+/-5.9	68.0	+/-6.3
1997	68.5	+/-1.0	66.6	+/-4.4	69.7	+/-6.0	65.4	+/-5.7
1998	72.7	+/-1.0	68.8	+/-4.4	71.9	+/-5.9	67.6	+/-5.7
1999	73.2	+/-0.9	67.1	+/-4.4	70.1	+/-5.7	66.0	+/-5.6
2000	72.8	+/-0.9	72.5	+/-4.2	66.9	+/-6.1	74.6	+/-5.3
2001	73.7	+/-0.9	71.2	+/-4.4	64.7	+/-6.2	73.8	+/-5.6
2002	74.8	+/-1.0	69.2	+/-5.0	73.1	+/-5.6	67.7	+/-6.5



Summary:

- A lower percentage of children in Washington who were 19-23 months of age had received the 4-3-1-3-3 vaccination series than children who were 24-35 months of age.
- A higher percentage of children ages 19-35 months of age whose mothers were married had received the 4-3-1-3-3 vaccination series than children whose mothers had been widowed or divorced or who had never married.
- Children ages 19-35 months of age who had received the 4-3-1-3-3 vaccination series did not differ by race/ethnicity, firstborn status, poverty status, number of providers identified or by the educational level of their mothers.
- Washington's coverage rates for the 4-3-1-3-3 vaccination series for children 19-35 months of age have shown an apparent upward trend from 1996 to 2002 although the overall trend is not statistically significant.
- Washington's coverage rates 4-3-1-3-3 vaccination series for children 19-35 months of age are similar to the national rates with the exception of 1999 when they were slightly lower.

Washington State Data from the National Immunization Survey - 2002

Age (in Months) Doses Received, All Children

Vaccine/ Dose	Age in Months								
	1	3	5	7	13	16	19	25	35
DT/DTaP1	22.4%	90.5%	93.3%	94.4%	95.9%	96.4%	96.4%	96.5%	
DT/DTaP2	0.0%	16.9%	84.5%	90.3%	93.1%	93.7%	94.6%	95.0%	95.1%
DT/DTaP3	0.0%	0.1%	12.9%	77.7%	88.4%	89.9%	91.6%	92.9%	93.2%
DT/DTaP4	0.0%	0.0%	0.1%	0.6%	11.4%	45.3%	71.9%	78.8%	80.0%
Polio1	22.7%	92.1%	94.8%	95.9%	97.1%	97.4%	97.6%	97.8%	
Polio2	0.0%	16.5%	85.2%	91.2%	94.1%	94.8%	95.7%	96.1%	
Polio3	0.0%	0.1%	4.7%	28.5%	53.3%	69.8%	84.7%	88.1%	89.0%
MMR1	0.0%	0.1%	0.1%	0.1%	52.2%	79.5%	86.6%	89.1%	89.9%
Hib1	22.4%	91.0%	93.9%	94.9%	97.0%	97.2%	97.3%	97.5%	97.6%
Hib2	0.0%	16.6%	84.7%	90.4%	93.3%	94.1%	94.6%	94.9%	
Hib3		0.1%	10.8%	68.1%	81.3%	88.8%	90.8%	91.5%	91.5%
HepB1	74.4%	84.7%	88.9%	94.3%	97.1%	97.3%	97.6%	97.9%	98.1%
HepB2	24.8%	61.7%	74.4%	83.0%	92.8%	93.2%	93.9%	94.5%	94.7%
HepB3	0.2%	1.1%	6.5%	39.1%	71.4%	80.5%	84.3%	86.0%	86.8%
Varicella	0.0%	0.1%	0.1%	0.3%	35.6%	47.5%	53.8%	57.5%	58.4%

- This Table illustrates, with increasing age, the decline in percentage of children fully immunized with age appropriate vaccinations.
- The low percentage of two-year old children who have received 4 DTaP vaccinations is particularly striking.
- Yellow highlighted cells indicate the maximum age that the antigen dose is recommended plus a 1 month grace period.

Summary Table of NIS Analysis Results Demographic Variables and Trends

	<u>MMR</u>	<u>Polio</u>	<u>Hib</u>	<u>HepB</u>	<u>Varicella</u>	<u>3DTaP</u>	<u>4DTaP</u>	<u>431</u>	<u>43133</u>
Child Race	↔	Black ↓	↔	Hispanic ↑	↔	↔	Black ↓	↔	↔
Child Age	↔	↔	↔	↔	↔	↔	19-23 mo.s ↓	19-23 mo.s ↓	19-23 mo.s ↓
Maternal Age	↔	↔	30+yr ↑	↔	30+yr ↑	↔	↔	30+ yr ↑	30+yr ↑
Maternal Education	↔	↔	↔	↔	College ↑	↔	↔	↔	↔
Marital Status	↔	↔	Married ↑	↔	↔	↔	Married ↑	Married ↑	Married ↑
Poverty Status	↔	↔	<Poverty ↓	↔	<Poverty ↓	↔	<Poverty ↓	↔	↔
Firsborn Status	↔	↔	↔	↔	↑	↔	↔	↔	↔
Number of Providers	↔	↔	↔	↔	↔	↔	↔	↔	↔
National Comparison	↔	↔	↔	↔	↓	↔	↓	↔	↑ NS
Trend	↔	↓ NS*	↔	↑	↑	↓ NS	↔	↓ NS	↔

*Not statistically significant

- Although there are no consistent findings across antigens, there are some indications that 19-35 month old children whose mothers who are above 30 years of age and married are more likely to be vaccinated than children whose mothers are younger than 30 years or whose mothers had been widowed or divorced or who had never married.
- Children whose families live below the poverty level are less likely to have been immunized with Hib, Hepatitis B or varicella vaccines.
- In general, Washington's immunization coverage rates are similar to the national rates except for varicella and 4+DTaP for which they are lower and, conversely, higher for the 4-3-1-3-3 series.
- Washington State's coverage rates are increasing for Hepatitis B and varicella vaccinations while they appear to be decreasing for Polio, 3+DTaP and the 4-3-1 series of vaccinations. These decreases, however, are not statistically significant.

The CHILD Profile Immunization Registry and Health Promotion System

CHILD Profile is Washington State's health promotion and immunization registry system designed to help ensure Washington's children receive the preventive health care and immunizations they need. Two components meet this need: a state-wide immunization registry and a series of health promotion materials sent to parents of all children from birth to age six.

Immunization Registry

The immunization registry is a secure, web-based computer system that helps health care providers keep track of children's immunizations. It helps parents and providers ensure that immunizations are up-to-date and an accurate record is available in an emergency or when families move or change providers. The registry also helps physicians manage immunization reporting and respond to parent and school requests for immunization records. It is free to registered users.

Health Promotion Materials

All parents of children born in Washington receive free reminders to schedule well-child checkups and immunizations from CHILD Profile. The educational information is mailed to parents regularly from the time the child is born to age six and is designed to help parents make informed decisions about their child's health care. CHILD Profile educates parents, safeguards immunization records and benefits state and local public health by encouraging complete immunization. Additionally, CHILD Profile offers a wide range of services, which helps providers connect with patients on a regular basis through immunization and well child visit reminders in the CHILD Profile health promotion mailings.

HOW DOES THE REGISTRY BENEFIT IMMUNIZATION PRACTICE?

Physicians, clinics and public health agencies can use the registry to:

- Keep track of all immunizations a child has had and who gave them.
- Quickly and conveniently see what vaccines a child needs at each visit.
- Save time answering requests for immunization records from parents, schools and camps by printing out the record.
- Improve follow up and patient contact by creating recall lists and mailing labels of children overdue for immunizations.
- Reduce paper work by pre-loading lot numbers and easily creating monthly state vaccine usage reports.
- Document Vaccine for Children (VFC) eligibility and create benchmarking reports.
- View and print recommendations for needed immunizations.
- Generate and print vaccine accountability reports.
- Enter exemption data, generate and print exemption report.
- Receive lists of patients affected by vaccine lot recalls.
- Generate clinic assessment reports through user's Clinical Assessment Software Application (CASA).
- Generate population based reports of vaccination coverage.

HOW DOES THE REGISTRY HELP FAMILIES?

- Assures timely and complete immunizations.
- CHILD Profile's health promotion materials remind parents about needed immunizations and well-child checkups.
- Parents rest easier, knowing their child's immunization record is available when they need it: in an emergency, if they move or when they change providers.
- Helps parents identify developmental milestones.

WHAT DATA IS IN THE CHILD PROFILE SYSTEM NOW?

As of November 30, 2003:

- All children 0 to 6 years of age contain demographic information.
- 78% of children in the registry have at least one immunization included in the registry.
- 60% of children have two or more immunizations included in the registry,
- 24% of children ages 19 to 35 months in the registry are up to date for 4:3:1.
- Children ages 19 to 35 months up to date for 4:3:1:3:3 represent about 19.2% of children of that age range in the registry.

HOW DOES THE REGISTRY BENEFIT PUBLIC HEALTH:

State and local public health use of the Immunization Registry will support immunization promotion activities and effective resource allocation, raise immunization rates, and improve immunization practice.

Specifically state and local public health will use the Immunization Registry for:

1. Consultation regarding individual immunization needs
2. Clinic/community assessment
3. Disease outbreak investigation and control
4. Vaccine accountability
5. Estimation of population based immunization coverage rates

Recently, the state Immunization Program has used the Immunization Registry to support CASA (Clinic Assessment Software Application) assessments. CASA is CDC-created software designed for assessing clinic-based immunization practices and coverage rates. Local health jurisdictions and community and migrant health centers contracting with the Immunization Program are able to import Registry data into CASA for use in assessing private and public clinics. One major limitation of clinic/practice-level assessment is the lack of historical immunization data. The mobility of patients and the lack of communication among providers make it difficult to determine a child's true immunization coverage. Using the Registry data to do this type of assessment will help to identify when and where children are getting their immunizations, and also help to identify access problems, where families have to travel out of their residential areas for medical services.

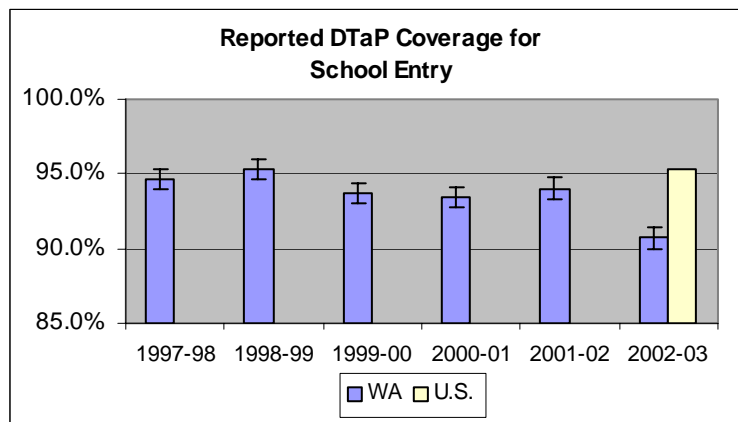
Vaccination Coverage Rates of School Age Children

Washington State law requires that children submit a Certificate of Immunization when they first enter school. Immunization records of all children entering school are reviewed each fall. School data is parent-reported and not provider verified. All states and territories are required to report coverage summaries to CDC. Vaccine requirements generally vary among states.

A six-year comparison of Washington State school immunization coverage rates shows a declining trend across school years 1997-98 through 2002-2003.

Diphtheria, Tetanus and Pertussis

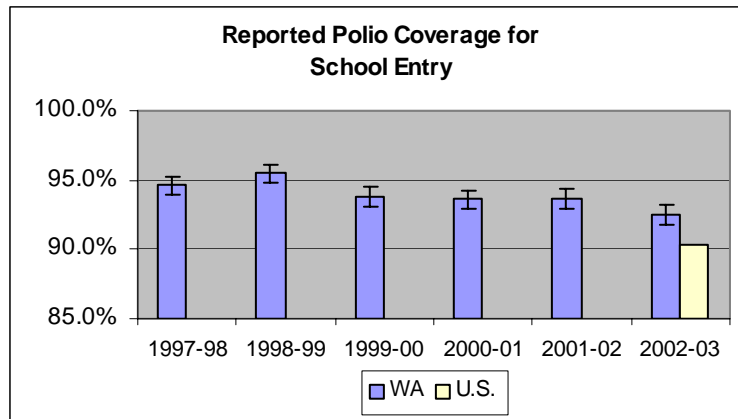
A significant drop in Washington State DTaP school entry coverage rates from 94% to 90.7% between SY 2001-02 and 2002-03 may reflect the vaccine shortage during that period. States' requirements for school entry DTaP range from 3 to 5 shots. Washington requires a series of four. For the states and territories reporting to CDC in SY 2002-2003 with a 4 DTaP completion requirement for school entry, the average coverage rate was 95.3%; the average rate for all states reporting DTaP coverage was 92.1%. In 2002-03, Washington's rate was significantly below the national rate for 4-DTaP.



95% confidence intervals represented by marker bars

Polio

School entry coverage rates for Polio dropped significantly between SY 1998-99 and SY 2002-03 from 95.5% to 92.5% which is the same as the national average. States' requirements for Polio range between 3 and 4 doses. Washington requires a series of three. For the states and territories reporting to CDC in SY 2002-2003 with a 3-Polio completion requirement for school entry, the average coverage rate was 88.4%; the average rate for all states reporting Polio coverage was 92.5%.



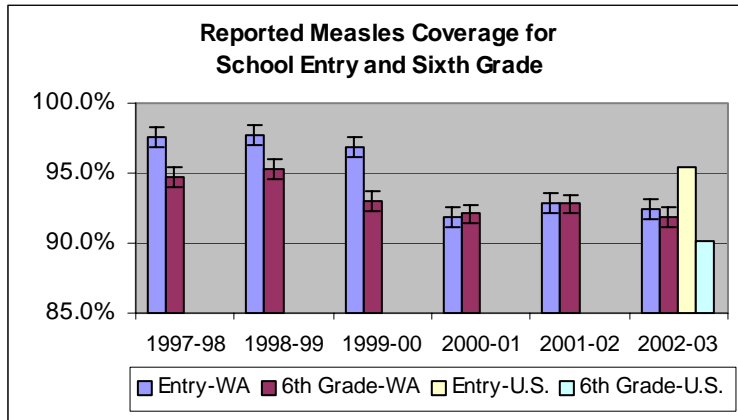
95% confidence intervals represented by marker bars

Measles, Mumps and Rubella

In school year 2002-2003, 28 out of the 39 Washington counties reported county-wide averages of school Measles rates below 95%, the standard threshold coverage rate for adequate herd immunity. Washington requires two Measles shots. For the states and territories reporting to CDC in SY 2002-2003 with a 2- Measles completion requirement, the average coverage rate was 95.2%; the average rate for all states reporting Measles coverage was 95.5%. Washington's statewide average rate of 92.4% is significantly lower than the average rate for all states.

The significant drop in MMR rates between SY 1999-2000 and SY 2000-01 reflects implementation of the 2nd MMR requirement. Between school years 1999-00 and 2000-01, there was a concurrent drop in both Mumps and Rubella rates which indicates fewer children receiving the first MMR shot.

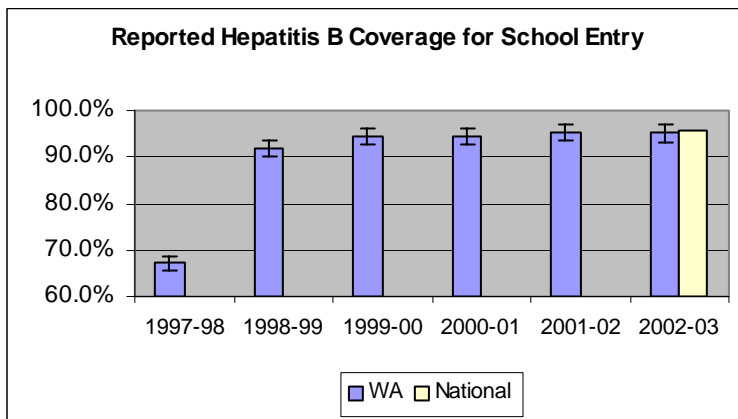
Measles coverage rates for 6th graders are also below the 90% threshold for herd immunity, reflecting the second Measles requirement. In SY 2002-03, the Measles coverage rate for 6th graders was 91.9% which does not differ statistically from the average rate of 90.2% for all states reporting Measles coverage for middle school.



95% confidence intervals represented by marker bars

Hepatitis B

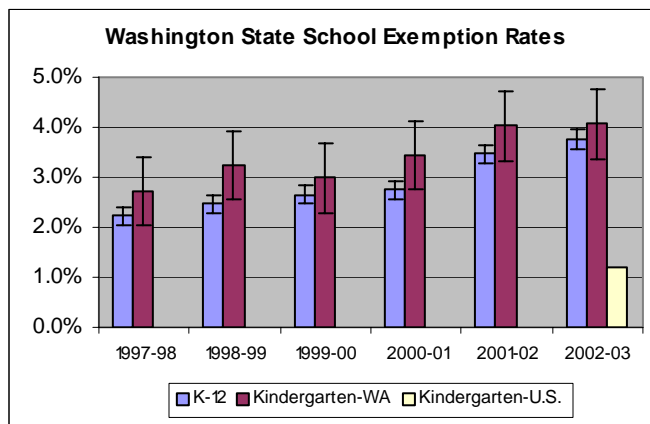
Since implementation of the Hepatitis B requirement in 1998-99, rates increased steadily from 67.1% in 1997-98 to 95.1% in 2001-02 and 2002-03. All states require 3 Hepatitis B shots with the exception of the District of Columbia which requires 2. For the states reporting a Hepatitis B requirement for school entry, the average coverage rate was 95.9%.



95% confidence intervals represented by marker bars

Immunization Exemption Rates

Nationally, about one percent of school children are exempt from immunizations. In Washington, the rate is much higher. Washington is one of about 19 states which allow personal/philosophical exemptions from immunizations in addition to medical or religious exemptions. Over the last six school year periods, exemption rates have increased significantly. This is believed to be due to a number of factors including the growing anti-immunization movement as well as the second measles requirement. For school year 2002-03, the statewide exemption rate for all enrolled students, K-12, was 3.7%; for school entry (kindergarten) the rate was 4%. Personal/philosophical exemptions represent about 95% of total statewide exemptions.



95% confidence intervals represented by marker bars

K-12 National Rate not available.

Data source: Washington State School and Childcare Assessment Database
 Prepared by the WA DOH Immunization Program, 2/04

Summary and Discussion

Overall, the analysis of demographic variables from the National Immunization Survey did not reveal any consistent findings to direct targeted immunization interventions or guide immunization policy in Washington State.

This analysis did reveal, however, some indications that 19-35 month old children whose mothers are younger than 30 years of age or not currently married and whose families fall below the poverty level are less likely to be fully immunized with age appropriate recommended vaccines. These findings suggest that it may be helpful for immunization providers to pay particular attention to the vaccination status of children whose families have these characteristics.

The table, Age (in Months) Doses Received, All Children, further illustrates the importance of children starting their vaccination series on time and receiving further doses on the recommended schedule since coverage with age appropriate doses declines with increasing age of the child. The 4th DT/DTaP vaccination is particularly problematic with the statistically significant trend toward lower coverage in Washington from 1995 through 2002. While vaccines shortages may play some part in this decline, the shortages were nation-wide and a similar decrease in coverage was not seen for the US as a whole over the same period of time.

Overall, trends in immunization coverage in Washington State are similar to those seen nationally with the exception of the previously mentioned 4th DT/DTaP and varicella. Varicella rates in Washington have been continuously and significantly increasing since 1995 although the 2002 rate of 65.1% ($\pm 5.1\%$) is still significantly lower than the 80.6% ($\pm 0.9\%$) seen for the nation.

Examination of data from the annual school status reports also highlights decreasing coverage of 4+ DT/DTaP in Washington for children at school entry. It also illustrates that, for the 2002-03 school year, Washington's DT/DTaP school entry coverage was significantly lower than the US rate. School entry coverage rates for 3+ polio and 1+ measles vaccinations also have decreased over the past six years.

Conversely, Washington State school exemption rates have increased significantly from the 1997-98 through the 2002-03 school years. The vast majority, approximately 95%, of claimed school exemptions are for personal/philosophical reasons. Furthermore, Washington's school entry exemption rates are the 4th highest in the nation.

This report highlights that continuing emphasis on childhood immunizations is necessary to maintain high coverage and thus, protection against vaccine-preventable diseases. In Washington, the decreasing rates of 4+ DT/DTaP coverage, the lower than national varicella coverage and the high and consistently increasing rates of personal/philosophical school immunization exemptions warrant specific targeted policies and interventions. The CHILD Profile Immunization Registry, as it is increasingly populated, will play an increasing role in improving immunization practice and estimation of population based vaccination coverage rates.