Perinatal Indicators Report

for Washington State

2018 Data

Washington State Department of Health

DOH 950-153 published December 2020

The *Perinatal Indicators Report* (PIR) provides key information on the health of women and babies before, during, and after birth to help guide decision-making by the Washington State Department of Health (DOH) and the Health Care Authority Medicaid Program. Updates for this report provide data for ongoing needs assessment and program evaluation. This report is a collaborative project conducted by the Statewide Perinatal Advisory Committee, the First Steps Database staff from the Department of Social and Health Services Division of Research and Data Analysis, and the DOH Office of Family and Community Health Improvement.

Highlights of the Report:

- The number of births was 86,047 in 2018. This represented a 4.7% drop from 2016's record 90,489 births.
- Women who reported more than one race/ethnicity were the fastest growing racial/ethnic group in 2018.
- Medicaid continued to be a major source of coverage for pregnant women in Washington, funding nearly half (47.4%) of all deliveries in 2018.
- Birth rates and pregnancy rates among teens 15-19 declined, with a 62% decline in all births to teenagers (15-19) and a 70% decrease among births to 15-17 year olds since 2008.
- Singleton Low Birth Weight births increased very gradually since 2008.
- The preterm birth rate was 8.3 per 100 live births in 2018. This was an 8% decline from 9.0 per 100 live births in 2008.
- Sudden Unexpected Infant Death (SUID) rates were down since 2008. This edition of the PIR switches from reporting on SIDS to the more comprehensive measure of SUID, which includes deaths to infants less than 1 year old without a clear cause of death before investigation.
- Approximately 82% of mothers reported putting their baby to sleep most often on their back in 2018.
- In 2018, 74.2% of women received prenatal care in the first trimester, and 6.5% received late or no prenatal care.
- In 2018, 12% of women reported smoking in the three months before pregnancy, down from 22.5% in 2009.
- Approximately 97% of new mothers reported ever breastfeeding in 2018. At two months postpartum approximately 83% reported continuing breastfeeding.

Areas of concern include:

- Many indicators showed stark racial and ethnic disparities, especially among Native American, Pacific Islander and African American women and infants.
- Although Cesarean deliveries have declined since 2008, the rate remains high at 28.4% of deliveries in 2018.
- Low Birth Weight (LBW) for singleton births increased 13% since 2008, driving an increase in the overall Low Birth Weight rate.
- Rates of pre-pregnancy and gestational diabetes increased 43% and 79% respectively over the past 10 years.
- While rates of gestational hypertension were higher than established hypertension, both have increased at a similar rate over the past 10 years.
- Over 50% of women were either overweight or obese prior to pregnancy in 2018. Approximately 51% of all women gained more weight than recommended during pregnancy.
- Women receiving Medicaid experienced statistically significantly worse outcomes on a range of indicators, highlighting the socio-economic inequalities for lower income mothers.
- Smoking rates during pregnancy were over 4 times higher for women receiving Medicaid than for women who did not receive Medicaid.
- Eleven percent of new mothers reported symptoms of postpartum depression.
- Approximately 49% of women reported not taking a multivitamin at all in the month prior to pregnancy.
- An estimated 35% of pregnancies were unintended.

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All rates and percentages were calculated after excluding records with unknown data. In some instances, where the amount of unknown data was substantial, the percent of unknown data was shown.

Summaries of the data were based on trend analysis of data across years where data were available.

A NOTE ON TRENDS: Changes in rates over time as presented in this report are based on statistical analysis of data from 2008 to 2018. These analyses account for variability in the data. For this reason, statements may not always reflect year to year fluctuations seen over a shorter time period. Statistically signigficant trends are noted with an arrow up (↑) to indicate an increasing trend, an arrow down (↓) to indicate a decreasing trend, or a neutral arrow (→) to indicate no trend. An asterisk (*) indicates a more complicated trend, explained in more detail in an accompanying note. The absence of a symbol indicates that no trend analysis was conducted.

Livebirths and Deliveries	2008		2014		2015		2016		2017		2018		% change since 2008	
Total Livebirths (# of liveborn infants)	90,270		88,561		89,000		90,489		87,508		86,047		-4.7%	
Livebirths By Mother's Race/Ethnicity[1]														
Non-Hispanic White	56,462	62.8%	54,446	61.8%	53,809	61.2%	53,552	60.0%	50,480	59.1%	48,646	58.1%	-8%	↓
Non-Hispanic African American	3,504	3.9%	3,811	4.3%	3,839	4.4%	4,061	4.5%	4,157	4.9%	4,126	4.9%	26%	↑
Non-Hispanic Native American	1,469	1.6%	1,317	1.5%	1,232	1.4%	1,351	1.5%	1,143	1.3%	1,198	1.4%	-13%	↓
Non-Hispanic Asian	7,485	8.3%	8,136	9.2%	8,429	9.6%	8,998	10.1%	8,937	10.5%	8,806	10.5%	26%	↑
Non-Hispanic Pacific Islander	949	1.1%	1,090	1.2%	1,120	1.3%	1,206	1.4%	1,203	1.4%	1,191	1.4%	34%	↑
Non-Hispanic Multiple Race	2,746	3.1%	3,533	4.0%	3,473	3.9%	3,641	4.1%	3,613	4.2%	3,727	4.5%	45%	↑
Hispanic Origin	17,340	19.3%	15,764	17.9%	16,035	18.2%	16,481	18.5%	15,894	18.6%	16,013	19.1%	-1%	*
Unknown	315	0.3%	464	0.5%	1,063	1.2%	1,199	1.3%	2,081	2.4%	2,340	2.8%	698%	
Livebirths By Mother's Age														
<20 Years	7,460	8.3%	4,128	4.7%	3,803	4.3%	3,617	4.0%	3,210	3.7%	2,777	3.2%	-61%	
20-24 Years	21,283	23.6%	17,160	19.4%	16,273	18.3%	15,606	17.2%	14,819	16.9%	14,116	16.4%	-31%	
25-29 Years	26,334	29.2%	26,108	29.5%	26,039	29.3%	26,456	29.2%	25,103	28.7%	24,405	28.4%	-3%	
30-34 Years	21,433	23.7%	25,943	29.3%	26,805	30.1%	28,051	31.0%	26,964	30.8%	26,992	31.4%	32%	
35-39 Years	11,077	12.3%	12,432	14.0%	13,133	14.8%	13,716	15.2%	14,281	16.3%	14,549	16.9%	37%	
40+ Years	2,672	2.9%	2,779	3.1%	2,939	3.3%	3,027	3.3%	3,073	3.5%	3,194	3.7%	27%	
Total Deliveries (# of women who delivered livebirths or fetal deaths) [2]	88,800		86,325		86,643		88,194		85,127		83,735			
Medicaid-Funded Maternity Care [3]	42,629	48.0%	42,133	48.8%	42,586	49.2%	43,398	49.2%	41,463	48.7%	39,695	47.4%	-1%	→
Multiple Gestation Deliveries [4]	1,500	1.7%	1,335	1.5%	1,401	1.6%	1,334	1.5%	1,326	1.6%	1,330	1.6%	-7%	→

Highlights

In 2018 there were 86,047 births to Washington State resident women. This was down 4.7% since 2008.

Native Hawaiian or Pacific Islander mothers and mothers who identify as more than one race were the two fastest growing birthing populations in the state.

Number of births to American Indian/Alaska Native and White women declined from 2008-2018. Births to Hispanic women, after a brief decline, increased to near-2008 levels.

The proportion of births to women under age 24 decreased through 2018, while the proportion to women over 30 increased.

Medicaid funded just under half (47.4%) of all deliveries in 2018.

The proportion of multiple gestation births has remained stable at around 1.6%.

Data from the First Steps Database excludes approximately 500 births per year that are unavailable for matching to Medical Assistance data.

* Trend notes: Hispanic rates decreased from 2007-2014. Since then the rates have increased to almost where they were in 2008.

1. Throughout this report Hispanic is treated as as separate racial category exclusive of all other racial categories. Multi race women are non-Hispanic women who identified as more than one race on the Birth Certficate.
2. "Total deliveries" includes women who delivered a livebirth or fetal death (stillbirth) greater than 20 weeks gestation. Each woman is counted only once regardless of the plurality of her pregnancy. These data come from the First Steps Database
3. "Medicaid-funded deliveries" includes women who delivered a livebirth or fetal death (stillbirth) greater than 20 weeks gestation whose deliveries were covered by Medicaid. Each woman is counted only once regardless of the plurality of her pregnancy. A delivery is considered covered by Medicaid if the mother received Medicaid-paid prenatal or delivery services or if she was enrolled in Medicaid managed care for at least 3 of the 6 months prior to delivery. Data from First Steps Database.
4. "Multiple gestation deliveries" includes women who delivered livebirths or fetal deaths (stillbirths) greater than 20 weeks gestation that were twins, triplets or quadruplets. Data from the First Steps Database

Birth Rate (Live births per 1,000 women)[5]	**2008**	**2014**	**2015**	**2016**	**2017**	**2018**	**% change since 2008**		**WA Rank (2017)[6]**
All Ages[7]	**66.5**	**64.5**	**64.4**	**64.4**	**61.3**	**59.3**	**-11%**	↓	**20**
15-19 years	32.4	18.9	17.3	16.2	14.3	12.3	**-62%**	↓	12
15-17 years	**15.6**	**8.3**	**7.3**	**6.5**	**5.5**	**4.7**	**-70%**	↓	11
18-19 years	**57.5**	**34.4**	**32.1**	**30.7**	**27.3**	**23.3**	**-59%**	↓	17
20-24 years	91.8	73.8	69.5	66.1	62.3	59.0	**-36%**	↓	18
25-29 years	113.5	112.8	111.3	110.1	100.8	95.0	**-16%**	*	10
30-34 years	102.4	107.5	110.1	113.7	108.6	107.7	**5%**	**	31
35-39 years	48.7	56.0	57.7	58.2	58.7	58.2	**20%**	***	41
40-44 years	10.8	11.4	13.1	12.7	12.8	13.1	**21%**	↑	42

Pregnancy Rate [(Live births + fetal deaths ≥ 20 weeks + abortions) per 1,000 women] [5]	**2008**	**2014**	**2015**	**2016**	**2017**	**2018**	**% change since 2008**		**HP 2020**
All Ages[7]	**84.8**	**77.4**	**77.2**	**77.0**	**73.6**	**71.3**	**-16%**	↓	
15-19 years	51.5	27.8	26.1	24.4	21.9	20.0	-61%	↓	
15-17 years	**26.9**	**13.3**	**11.9**	**10.8**	**9.2**	**8.9**	**-67%**	↓	**36.2**
18-19 years	**88.2**	**49.2**	**47.3**	**44.7**	**40.5**	**36.2**	**-59%**	↓	**105.9**
20-24 years	126.6	98.1	91.7	87.0	82.6	78.7	-38%	↓	
25-29 years	138.5	133.2	131.1	130.3	120.1	113.6	-18%	*	
30-34 years	118.4	120.7	123.5	127.3	122.5	121.3	2%	**	
35-39 years	58.7	64.3	66.0	66.2	67.2	66.6	13%	↑	
40-44 years	14.2	14.1	16.1	15.7	15.7	16.1	13%	↑	

Highlights

The overall birth rate for all women declined from a high of 66.5 in 2008 to 59.3 in 2018.

Changes in birth and pregnancy rates were driven by distinct age-specific trends. Women 35 years of age and older saw moderate rate increases, while women 29 years of age and younger experienced rate declines from 2008 to 2018.

Birth and pregnancy rates among teenagers (15-19) were at historic lows in 2018, 12.3 and 20.0 respectively. Birth and pregnancy rates among adolescents (15-17) decreased 70% and 67% respectively from 2008 to 2018.

Washington State met the HP 2020 target birth rates among 15-17 and 18-19 year old age groups, with rates of 8.9 (HP 2020 goal: 36.2) and 36.2 (HP 2020 goal: 105.9) live births per thousand women.

Women 20-24 years of age had significant declines in birth and pregnancy rates that mirrored trends in teen pregnancy and birth rates. Pregnancy and birth rates among this group dropped 36% and 38% respectively from 2008 to 2018.

Among women 25-29 years of age, pregnancy and birth rates declined more modestly, 18% and 16% respectively since 2008. For the first time the birthrate in this age group dropped below 100 births per 1,000 women.

From 2008-2017 women 30-39 years of age saw a steady increase in birth and pregnancy rates. In the year from 2017 to 2018 both rates decreased slightly, just under 1% each.

*Trend Notes: Birth and pregnancy rates were stable from 2008-2016, since 2016 rates have decreased.

**Trend Notes: Birth and pregnancy rates increased from 2008-2016 since 2016 both have shown a non-significant decrease, possibly suggesting the beginning of a decrease in the rates.

***Trend Notes: From 2008-2016 rate increased at 2.5% per year, since 2016 rate stabailized.

5. Age-specific rates equal the number of births or pregnancies occurring to women in a specific age group per 1,000 female population in that age group.

6. The WA State Rank is the ranking of Washington among the 50 states based on the 2017 National Center for Health Statistics data, with 1 being the lowest and 50 the highest. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. In 2015, the birth rates for women 15-17 years ranged from 2.9 to 14.2 livebirths per 1000 women and for women 18-19 years from 13.1 to 73.5 livebirths per 1000 women. The birth rates for women 15-19 ranged from 8.1 to 32.8 livebirths per 1000 women and for women 15-44 years ranged from 49.7 to 76.4 livebirths per 1000 women. Ranges for other age groups are available on request.

7. "All Ages" rates are the total births or pregnancies per 1,000 women 15-44 years.

Livebirth Delivery Services (All Births Occurring in WA)	**2008**		**2014**		**2015^**		**2016**		**2017**		**2018**		**% change since 2008**	
Births Occurring in Washington State (includes residents and non-residents†)	90,318		88,428		88,930		90,310		86,161		84,648			
Birth Facility														
Hospital (includes Military Hospitals)	88,205	97.7%	85,344	96.5%	85,776	96.5%	83,781	92.8%	84,000	97.5%	81,439	96.2%	-2%	↓
Birth Center	947	1.0%	1,195	1.4%	1,357	1.5%	1,419	1.6%	1,322	1.5%	1,270	1.5%	50%	
Home	1,111	1.2%	1,777	2.0%	1,695	1.9%	1,935	2.1%	1,886	2.2%	1,819	2.1%	79%	↑
Other (includes Born on Arrival, Other)	55	0.1%	111	0.1%	98	0.1%	167	0.2%	128	0.1%	110	0.1%	30%	
Unknown	0		1	0.0%	4	0.0%	4	0.0%	13	0.0%	10	0.0%		
Birth Attendant[8]														
OB/GYN/MD/DO	79,027	87.5%	76,153	86.1%	75,934	85.4%	75,555	83.7%	72,673	84.3%	69,439	82.0%	-6%	*
Certified Midwife[9]	8,230	9.1%	8,650	9.8%	7,463	8.4%	5,982	6.6%	6,583	7.6%	7,666	9.1%	0%	→
Licensed Midwife	1,896	2.1%	2,699	3.1%	2,734	3.1%	2,638	2.9%	2,674	3.1%	2,515	3.0%	42%	**
Nurse	155	0.2%	442	0.5%	2,169	2.4%	5,478	6.1%	4,634	5.4%	4,413	5.2%	2938%	***
Other (includes Other Midwife, Father, Hospital Administrator, and Other)	987	1.1%	410	0.5%	575	0.6%	636	0.7%	568	0.7%	540	0.6%	-42%	
Unknown	23	0.0%	74	0.1%	55	0.1%	21	0.0%	28	0.0%	9	0.0%	-58%	

Highlights

96.2% of births occurred in hospitals in 2018, a significant decrease from 2008, 97.7%.

MDs or DOs were listed as the birth attendant in approximately 82% of births in 2018. The percentage of MDs or DOs listed as the birth attendant gradually descreased from 2008 to 2018.

The percent of births occurring in birth centers increased 50% from 2008 to 2018.

The percent of home births increased by 79% from 2008 to 2018.

The percent of births delivered by licensed midwives increased by 42% from 2008 to 2018.

*Trend Note: From 2008 to 2013 there was no change in the rate, since 2013 the rate decreased around 1% per year on average

**Trend Note: From 2008 to 2013 deliveries by licensed midwives increased at 8% per year, since 2013 that rate has flattened and did not increase.

***Trend Note: Following the change in the data system adopted by Department of Health in 2015 accurate trends for this provider category are not available

† Note: In 2018 data on non-resident women who gave birth in WA were not included in the years' birth file. 2018 data only included WA resident women who gave birth in Washington State.

^ Note: In 2015, the Department of Health converted over to a new data system; this system caused errors in reporting of birth attendant. The error was primarily limited to incorrectly-reporting certified midwives and nurses, and was at the time of this report in the process of being fixed.

8. In 2003, Washington introduced a new electronic birth reporting system. To improve reporting, pre-set drop down boxes for completing the birth attendant field were added. Provider qualifications were pre-determined and may have influenced changes observed in the reporting of licensed midwives and nurses as birth attendants.

9. Based on a review of the data, the category "Certified Midwife" refers to Certified Nurse Midwives.

Livebirth Delivery Services (cont'd)	**2008**		**2014**		**2015**		**2016**		**2017**		**2018**		**% change since 2008**		
Method of Delivery from birth certificate information															
Births Occurring in Washington State	90,318		88,428		88,930		90,310		86,161		84,648				
Total Vaginal Births	63,793	70.6%	63,897	72.3%	64,435	72.5%	65,411	72.4%	62,966	73.1%	61,961	73.2%	4%	↑	**WA Rank[10]**
Vaginal Birth After C-Section (VBAC)	1,153	1.3%	2,236	2.5%	2,397	2.7%	2,548	2.8%	2,424	2.8%	2,393	2.8%	117%		**Total C-sections**
Total C-Section	26,523	29.4%	24,531	27.7%	24,495	27.5%	24,765	27.4%	24,132	28.0%	24,074	28.4%	-3%	↓	14 (2018)
Primary C-Section	18,066	20.0%	14,695	16.6%	14,561	16.4%	14,880	16.5%	14,536	16.9%	14,428	17.0%	-15%		
Repeat C-Section	8,457	9.4%	9,836	11.1%	9,934	11.2%	9,885	10.9%	9,596	11.1%	9,646	11.4%	21%		
Primary C-Section per 100 livebirths w/o history of c-section	22.4		19.2		19.0		19.1		19.6		19.9		-11%		**WA Rank[10]**
VBAC per 100 livebirths w/ history of c-section	12.0		18.5		19.4		20.5		20.2		19.9		66%		**NTSV C-sections**
															16 (2018)
Total Births Occurring in Washington, excluding military facilities	86,953		85,143		85,955		87,308		84,695		82,131				**HP 2020**
Total Nulliparous Term Singleton Vertex livebirths (NTSV)[11]	30,409	35.0%	28,483	33.5%	28,204	32.8%	29,666	34.0%	28,632	33.8%	27,776	33.8%	-3%		**NTSV C-Sections**
Total NTSV C-sections	7,954	26.2%	6,581	23.1%	6,486	23.0%	7,348	24.8%	7,316	25.6%	7,139	25.7%	-2%		24.7%
Total Previous C-Section (among vaginal and cesarean births)	9,603		12,067		12,309		12,392		11,989		11,670				
One prior C-Section	7,130	74.4%	8,626	71.5%	8,814	71.8%	8,870	71.9%	8,661	73.1%	8,435	72.3%	-3%		
Two prior C-Section	1,946	20.3%	2,557	21.2%	2,584	21.0%	2,580	20.9%	2,409	20.3%	2,372	20.3%	0%		
Three or more prior C-Section	507	5.3%	884	7.3%	911	7.4%	942	7.6%	919	7.8%	853	7.3%	38%		
Don't know number of prior C-Section	20		5		26		54		134		0				

Highlights

Rates of vaginal births increased slightly since 2008, with 73.2% in 2018. At the same time the overall C-section rate decreased slightly to 28.4% in 2018.

The repeat C-section percent, 11.4% in 2018, slightly increased since 2008 at a rate of 1.5% per year on average.

Nulliparous, term, singleton, vertex (NTSV) deliveries, generally considered to be low risk, comprised 33.8% of deliveries in 2018. The cesarean section rate among these deliveries was 25.7% in 2018.

10. The WA State Rank is the ranking of Washington among the other 50 states based on the National Center for Health Statistics data, with 1 being the lowest and 50 the highest rate. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. The total cesarean sections rate ranged from 22.4% to 38.3% and from 16.87% to 31.2% for low risk cesarean sections according to data from all states in 2018.

11. NTSV refers to nulliparous, term, singleton, vertex deliveries. This information is from birth certificate and is limited to birth occurring in Washington. Deliveries at military hospitals were excluded.

Maternal Morbidity[12]	2008	2014	2015	2016	2017	2018	% change since 2008	
Maternal Morbidity								
Total Diabetes per 100 livebirths	6.0	8.4	9.1	9.4	10.1	10.5	75%	↑
Prepregnancy Diabetes	0.7	0.8	0.9	0.9	1.0	1.0	43%	↑
Gestational Diabetes	5.3	7.6	8.2	8.5	9.0	9.5	79%	↑
Total Hypertension per 100 livebirths	6.4	7.5	7.9	7.9	9.1	9.8	53%	↑
Prepregnancy Hypertension	1.3	1.4	1.6	1.6	1.9	2.0	54%	↑
Gestational Hypertension	5.1	6.0	6.3	6.4	7.1	7.8	53%	↑
Group B Strep Culture Positive per 100 livebirths	17.3	18.7	19.7	19.6	17.8	20.0	16%	↑

Highlights

The total rate of diabetes among pregnant women, inccluding pre-exisiting and gestational, increased by 75% from 2008-2018.

Hypertension among pregnant women increased by 53%, increasing steadily over the past decade.

More women experienced both pre-pregnancy and gestational hypertension in 2018 than in 2008.

12. In many of the rates presented in this section, single year data are subject to fluctuation due to small numbers.

Maternal Morbidity (cont'd)	2008	2014	2015	2016	2017	2018	% change since 2008	
Prepregnancy Body Mass Index (BMI) per 100 livebirths[13]								
Underweight (BMI < 18.5)	3.1	2.6	2.8	3.1	3.0	2.9	-6%	→
Appropriate Weight (BMI 18.5-24.9)	47.3	45.3	45.9	46.9	46.1	45.2	-5%	↓
Overweight (BMI 25.0-29.9)	26.2	26.7	26.0	25.5	25.7	25.9	-1%	→
Obese (BMI ≥30)	23.3	25.4	25.1	24.6	25.2	26.1	12%	↑
Morbidly Obese (BMI 40+)	4.1	4.7	4.7	4.5	4.8	4.8	16%	↑
Unknown BMI (percent of all pregnant women)	8.5%	5.7%	4.9%	3.3%	4.2%	4.6%		
Weight Gain per 100 livebirths[14]								
Recommended Weight Gain	30.9	31.4	30.5	29.5	29.2	29.2	-6%	↓
Less than Recommended Weight Gain	19.3	21.7	21.3	19.9	20.0	20.0	3%	*
Greater than Recommended Weight Gain	49.7	46.9	48.2	50.6	50.8	50.9	2%	**

Highlights

In 2018, over 50% of women began pregnancy either overweight or obese, including almost 5% of women who were morbidly obese.

The proportion of pregnant women who were morbidly obese prior to pregnancy increased 16% from 2008-2018.

In 2018, a little over 50% of women gained more weight during pregnancy than the amount recommended by the 2009 Institute of Medicine Report on Weight Gain in Pregnancy.

*Trend Notes: From 2008 through 2013 the rate increased at 3% per year, since 2013 the rate decreased by 2% per year on average.

**Trend Notes: From 2008 through 2013 the rate decreased at 1.3% per year, since 2013 the rate increased by 2% per year on average.

13. Prepregnancy body mass index is calculated as prepregnancy weight in pounds divided by the square of height in inches. As a reference, a women who is 5'5" tall is underweight if she weighs less than 111 pounds before pregnancy, is normal weight if she weighs 111-149, is overweight if she weighs 150-179 pounds, is obese if she weighs 180 pounds or more, and is morbidly obese if she weighs over 240 pounds.

14. Weight gain is calculated as weight at delivery less prepregnancy weight. Categories of weight gain are based on the 2009 Institute of Medicine recommendations for weight gain in pregnancy and take prepregnancy BMI into account. The recommended pregnancy weight gain by prepregnancy BMI status is underweight (28-40 pounds), normal weight (25-35 pounds), overweight (15-25 pounds) and obese (11-20 pounds).

Infant Mortality	2008	2014	2015	2016	2017	2018	HP 2020		WA Rank[15]
Fetal deaths per 1,000 livebirths[16]	6.0	6.1	5.7	5.5	5.8	5.6	5.6	→	
Perinatal deaths per 1,000 livebirths[17]	4.9	4.7	4.8	4.5	4.3	4.5	n/a	↓	
Infant deaths per 1,000 livebirths (period)[18]	5.4	4.5	4.8	4.3	4.1	4.7	6.0	→	8 (2018)
Neonatal deaths per 1,000 livebirths (period) [19]	3.3	3.0	3.2	2.8	2.5	3.1	4.1	→	
Post Neonatal deaths per 1,000 livebirths (period) [20]	2.1	1.6	1.6	1.5	1.6	1.5	2.0	↑	
SUID deaths per 1,000 livebirths (period) [21]	0.8	0.7	0.8	0.7	0.8	0.6	0.8	↓	

Highlights

In 2018 Washington State's infant mortality rate was 4.7 per 1000 live births, among the lowest in the United States.

The infant mortality rate declined 13% in the past decade, dropping approximately 1.5% per year.

There was no decrease in the neonatal mortality rate in the past decade.

SUID rates decreased over the past decade by 3.5% per year.

Washington State met the HP 2020 goal for infant mortality rate.

15. The WA State Rank is the ranking of Washington among the other 50 states for infant mortality, with 1 being the best and 50 the worst. In 2018, individual state infant mortality rates ranged from 3.5 to 8.4 per 1000 livebirths.
16. Fetal death reporting in Washington is required when the fetus is 20 weeks gestation or more.
17. Perinatal deaths refer to fetal deaths of 28 weeks gestation or more as well as deaths to infants less than 7 days old.
18. Infant deaths refer to deaths to infants from birth through 364 days of age. These are crude infant mortality rates which use infant deaths in a given year as the numerator and infant births in the same year as the denominator. These are also known as period infant mortality rates.
19. Neonatal deaths refer to deaths to infants birth through 27 days of age.
20. Post neonatal deaths refer to deaths to infants from 28 through 364 days of age.
21. In 2019 the measure was changed from Sudden Infant Death Syndrome (SIDS) to Sudden Unexpected Infant Death (SUID). SUID is defined as a death attributable to ICD-10 codes W75, R95 or R99.

Mortality (cont'd)[22]	2008	2014	2015	2016	2017	2018	% change since 2008		WA Rank[22]
Race/ethnic-specific Infant deaths per 1,000 livebirths (period)									
Non-Hispanic White	4.8	3.9	4.6	4.1	3.3	3.8	-21%	↓	10 (2015-2017)
Non-Hispanic African American	8.3	9.4	7.3	6.9	9.1	9.7	17%	→	2 of 40 (2015-2017)
Non-Hispanic Native American	7.5	6.8	8.1	11.8	4.4**	6.7	-11%	→	4 of 13 (2015-2017)
Non-Hispanic Asian	3.9	3.3	3.4	3.2	3.0	3.3	-15%	→	6 of 34 (2015-2017)
Non-Hispanic Pacific Islander	8.4	6.4	7.1	2.5	6.7**	7.6	-10%	→	
Hispanic Origin	6.3	4.9	4.6	4.2	3.6	4.9	-22%	→	1 of 41 (2015-2017)
Infant deaths per 1,000 livebirths (cohort)[23]									
Total	5.5	4.4	4.8	4.3	n/a	n/a			
Medicaid	7.0	5.6	6.1	5.3	n/a	n/a			
Non-Medicaid	4.2	3.3	3.5	3.4	n/a	n/a			
Singleton	4.9	4.0	4.4	4.0	n/a	n/a			
Twins	22.8	19.0	15.4	16.2	n/a	n/a			
Triplets	11.0	13.3	49.2	17.5	n/a	n/a			

Highlights

In 2018, the African American infant mortality rate (IMR) was 9.7 per 1,000 births, exceeding the IMR of all other racial/ethnic groups.

Pacific Islander and Native American IMRs fluctuated over the past decade, partly due to small numbers.

Washington State ranked among states with the lowest non-White IMR. Washington State had the lowest Hispanic IMR and the second lowest African American IMR in the U.S. from 2015-2017.

In 2016, the mortality rate of infants whose mothers received Medicaid funded maternity care was 5.3 per 1,000. This is much higher than the mortality rate of infants whose mothers did not receive Medicaid funded maternity care, 3.4 per 1,000 births.

In 2016, the mortality of twins and triplets, 16.2 and 17.5 per 1,000 respectively, greatly exceeded the rate of singleton infants, 4.0 per 1,000 births.

**NOTE: Relative Standard Error (RSE) above 30%, and estimates are unstable.

22. In many of the rates presented in this table, single year data are subject to fluctuation due to small numbers. For comparison, we provide the rankings of race-specific rates from the National Center for Health Statistics (NCHS) for 2015-2017, with 1 being the best and 50 the worst. The NCHS race categories are classified differently, so rates presented here are not directly comparable. However, the rankings are based on NCHS published rates for WA. For whites, the range was 2.94 to 7.16 per 1000 livebirths. For African Americans, the range was 7.56 to 15.03 per 1000 livebirths.

23. These are cohort infant mortality rates. Cohort mortality rates describe the experience of a birth cohort. The denominator includes all births in a specified year (cohort) and the deaths before 365 days of age among those infants in the numerator. The deaths may occur in the cohort year or the subsequent year. These data come from the First Steps Database.

Birth Weight - Low Birth Weight Births [24]	2008	2014	2015	2016	2017	2018	% change since 2008		HP 2020 Low Birth Weight
									7.8%
Low birth weight (LBW) births per 100 livebirths	6.3	6.4	6.4	6.4	6.6	6.6	5%	↑	
Singleton	4.7	5.0	5.0	5.0	5.2	5.3	13%	↑	**WA Rank[25] Low Birth Weight**
Multiple Births	53.1	52.3	50.5	51.1	51.5	50.7	-5%	→	
Singleton LBW births per 100 singleton livebirths									2(2017)
Non-Hispanic White	4.2	4.4	4.2	4.3	4.3	4.3	2%	→	4 (2017)
Non-Hispanic African American	7.9	8.1	7.8	8.2	8.1	8.0	1%	→	9 of 47 (2017)
Non-Hispanic Native American	7.1	7.0	7.9	6.7	6.1	6.7	-6%	→	
Non-Hispanic Asian	6.2	6.5	7.0	6.7	7.1	6.8	10%	↑	
Non-Hispanic Pacific Islander	4.2	6.3	6.3	5.6	6.7	7.3	74%	↑	
Hispanic Origin	4.8	5.1	5.0	5.4	5.3	5.5	15%	↑	4 of 49 (2017)
Medicaid[26]	5.4	5.8	5.9	5.8	6.0	6.1	13%	↑	
Non-Medicaid[26]	4.1	4.1	4.1	4.1	4.3	4.4	7%	*	

Highlights

Low Birth Weight (LBW) for singleton births increased 13% since 2008, driving an increase in the overall Low Birth Weight rate.

In 2018, African Americans experienced the highest singleton LBW rate of 8.0%, followed by Pacific Islanders, 7.3%.

Rates of singleton LBW among Asian, Pacific Islander, and Hispanic births increased since 2008.

In 2018 the Medicaid singleton low birth weight rate was 6.1%, exceeding the non-Medicaid singleton rate of 4.4%.

Both Medicaid and non-Medicaid populations had an increase in the rate of Low Birth Weight.

*Trend Notes: From 2008 to 2011 there was a non-significant decrease in the rate, non-Medicaid infants experienced a rise of 1.8% per year since 2011.

24. Low birth weight is defined as less than 2,500 grams (5 lbs. 8 oz.).

25. The 2017 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. 2017 data show total LBW rates in the US ranged from 6.2 per 100 livebirths to 11.6 per 100 livebirths.

26. These data come from the First Steps Database.

Birth Weight (cont'd) - Very Low Birth Weight Births[29]	2008	2014	2015	2016	2017	2018	% change since 2008		HP 2020 Very Low Birth Weight
									1.4%
Very low birth weight (VLBW) births per 100 livebirths	1.1	1.0	1.1	1.0	1.0	1.0	-9%	→	
									WA Rank[30] Very Low Birth Weight
Singleton VLBW births per 100 singleton livebirths									
Total	0.8	0.8	0.8	0.8	0.8	0.8	0%	→	2 (2017)
Non-Hispanic White	0.7	0.6	0.7	0.6	0.6	0.6	-14%	→	3 (2017)
Non-Hispanic African American	1.5	1.7	1.8	2.0	1.7	1.9	27%	→	9 of 47 (2017)
Non-Hispanic Native American	1.5	0.9	1.7	1.0	1.2	1.1	-27%	→	
Non-Hispanic Asian	0.8	0.9	1.0	0.8	0.8	0.8	0%	→	
Non-Hispanic Pacific Islander	0.5	1.5	1.2	0.9	0.8	1.9	280%	↑	
Hispanic Origin	0.8	1.0	0.9	0.9	0.9	0.9	13%	→	9 of 49 (2017)
Medicaid [31]	0.9	0.9	1.0	0.9	0.9	0.9	0%	→	**HP 2020 VLBW births at Level 3 facilities**
Non-Medicaid[31]	0.6	0.6	0.6	0.6	0.6	0.6	0%	→	
VLBW births at facilities with Level III or IV perinatal services[32]	82.4%	90.5%	89.7%	90.2%	89.4%	87.3%			83.7%
Births < 1000 g at facilities with Level III or IV perinatal services[32]	79.9%	87.6%	88.5%	88.2%	87.2%	88.2%			

Highlights

The Very Low Birth Weight (VLBW) rate did not significantly change either overall or among sub-populations in the past decade, with one exception. Since 2008, the VLBW rate among singleton Pacific Islander births increased almost 8% per year on average. Due to small numbers, the Pacific Islander VLBW rate varied widely by year.

In 2018, the singleton VLBW rate among African American births was 1.9%, more than three times the rate among White births.

The effectiveness of perinatal regionalization is often evaluated by the percent of VLBW births occurring at facilities with Level III perinatal services. Approximately 87.3% of VLBW infants were born at facilities with Level III or higher perinatal services in 2018, meeting the HP 2020 goal of 83.7%.

The proportion of VLBW infants born at facilities with Level III or higher perinatal services remained stable at just under 90% over the last 5 years.

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29. Very low birth weight is defined as less than 1,500 grams (3 lbs. 4 oz.).

30. The 2017 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. 2015 data show total VLBW rates ranged from 0.9 per 100 livebirths to 2.1 per 100 livebirths.

31. These data come from the First Steps Database.

32. These data are limited to resident births that occurred in Washington State. Facilities with Level III perinatal services are as recommended by the Perinatal Advisory Committee Subgroup on Perinatal Level of Care.

Preterm Births and Gestational Age of Births[33]	2008	2014	2015	2016	2017	2018	% change since 2008		WA Rank[34]
Preterm births per 100 livebirths	9.0	8.1	8.2	8.2	8.4	8.3	-8%	↓	3 (2018)
Non-Hispanic White	8.8	7.7	7.7	7.7	7.8	7.6	-14%	↓	5 (2018)
Non-Hispanic African American	10.7	9.6	10.0	10.0	10.7	10.1	-6%	→	8 of 48 (2018)
Non-Hispanic Native American	14.3	15.1	14.5	12.7	12.9	13.1	-8%	→	
Non-Hispanic Asian	9.5	8.0	8.8	8.4	8.3	8.0	-16%	↓	
Non-Hispanic Pacific Islander	8.9	9.8	10.1	11.3	9.8	9.7	9%	→	
Hispanic Origin	8.4	8.2	8.0	8.4	8.5	8.7	4%	→	5 (2018)
Gestational Age per 100 livebirths									**HP 2020**
Less than 34 weeks	2.4	2.3	2.2	2.1	2.1	2.1	-13%	↓	**34-36 weeks gestation**
34 to 36 weeks	6.6	5.9	5.9	6.0	6.2	6.1	-8%	↓	6.8%
37 to 38 weeks	25.5	22.5	22.5	22.9	23.8	24.0	-6%	*	
39 to 41 weeks	64.7	68.5	68.6	68.2	67.0	66.9	3%	→	
42 or more weeks	0.7	0.8	0.8	0.7	0.8	0.8	14%	↑	
Singleton preterm births per 100 livebirths	7.1	6.6	6.6	6.7	6.8	6.9	-3%		
Non-Hispanic White	6.7	6.0	5.9	5.9	6.2	6.1	-9%	↓	
Non-Hispanic African American	9.2	8.0	7.9	8.5	8.8	8.7	-5%	→	
Non-Hispanic Native American	12.9	14.1	13.1	11.3	11.1	11.9	-8%	→	
Non-Hispanic Asian	7.6	6.9	7.3	7.2	7.2	6.7	-12%	→	
Non-Hispanic Pacific Islander	8.2	9.3	9.1	9.2	8.7	8.4	2%	→	
Hispanic Origin	7.2	7.2	6.8	7.2	7.2	7.5	4%	→	

Highlights

The overall preterm birth rate decreased since 2008, mirroring national trends.

Washington State's preterm birth rate of 8.3% met the Healthy People 2020 goal of less than 9.4%.

Post-term births (42 or more weeks) increased 1.5% per year since 2008.

Pre-term births were less common among non-Hispanic White births than all among births in all other racial ethnic groups.

*Trend Note: From 2008 to 2012 the rate decreased by 3.5% per year, since 2012 the rate increased by 1.4 % per year.

33. Gestational age is calculated using the obstetric estimation of gestational age, which was added to the 2003 revised standard birth certificate (http://www.cdc.gov/nchs/data/dvs/birth_edit_specifications.pdf).

34. The WA State Rank is the ranking of Washington among all 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. 2018 preterm birth rates ranged from 7.83 per 100 livebirths to 14.25 per 100 livebirths. 2018 late preterm birth rates ranged from 5.91 per 100 livebirths to 10.09 per 100 livebirths.

Initiation of Prenatal Care[35]	2008	2014	2015	2016	2017	2018	% change since 2008		HP 2020 1st Trimester PNC
First Trimester Prenatal Care per 100 pregnant women									84.8%
Total	68.6	72.9	73.7	73.4	74.4	74.2	8%	*	
Medicaid	56.4	63.3	65.2	65.3	66.7	66.1	17%	↑	
Non-Medicaid	80.1	82.1	81.9	81.3	81.8	88.4	10%	→	
Late/No Prenatal Care per 100 pregnant women[36]									
Total	7.0	6.5	6.8	7.0	6.8	6.5	-7%	→	
Medicaid	10.5	9.3	9.5	9.6	9.3	9.1	-13%	→	
Non-Medicaid	3.8	3.7	4.3	4.6	4.4	4.4	16%	→	
Unknown Prenatal Care (percent of all pregnant women)									
Total	7.1%	6.4%	5.7%	5.7%	6.8%	8.8%			
Medicaid	6.0%	7.0%	5.7%	5.4%	6.5%	7.6%			
Non-Medicaid	8.1%	5.9%	5.7%	6.1%	7.1%	9.8%			

Highlights

In 2018, prenatal care initiation in the first trimester was 74.2%. There was a significant disparity between Medicaid funded (66.1%) and non-Medicaid funded (88.4%) births, as seen in previous years.

From 2008 to 2018, the rate of first trimester prenatal care among women on Medicaid significantly increased, while the rate for non-Medicaid women remained stable.

Since 2008 the percentage of women with late or no prenatal care did not significantly change for either Medicaid nor non-Medicaid covered women.

In 2018, the overall rate of late or no prenatal care was 6.5%. This amounted to about 4,970 women, of whom approximately 654 received no prenatal care at all.

*Trend note: Increased from 2008-2011, since 2011 rate remained stable.

35. These data are from the First Steps Database and reflect prenatal care provided to women who delivered either a livebirth or fetal death. First trimester prenatal care and late/no prenatal care rates are calculated after excluding records missing month prenatal care began. "Unknown prenatal care" represents the proportion of all records missing month prenatal care began.

36. "Late/No prenatal care" refers to women who received prenatal care during their third trimester or received no prenatal care.

Medicaid Expenditures for Maternal & Infant Services [37, 38]	2008	2014	2015	2016	2017	2018	% change since 2008
Average costs per client for maternal services (prenatal through end of 2nd month post partum)	$8,675	$9,390	$9,691	$10,307	$10,215	$10,018	15%
Average costs per client for infant services (first year of life)	$7,449	$6,686	$6,997	$7,282	$7,571	$8,388	13%
Combined average costs for maternal/infant services	$16,124	$16,076	$16,688	$17,589	$17,786	$18,406	14%

Highlights

Average Medicaid expenditure per client for maternal services grew, increasing 15% from 2008-2018

Average Medicaid expenditure per client for infant services in the first year of life increased 13% from 2008-2018.

37. Dollars are the actual amounts paid for a given year and have not been adjusted for inflation. These data were reported by the First Steps Database in September 2019. Data are subject to change as claims are paid.

38. Maternity Support Services and Maternity Case Management costs are included in the prenatal and post partum costs.

Data Notes

Data for the perinatal indicators on this and previous pages come from Washington State birth, fetal death, and death certificate data as well as the First Steps Database. The following perinatal indicators come from the Pregnancy Risk Assessment Monitoring System (PRAMS), an ongoing population based surveillance system sponsored by the Centers for Disease Control and Prevention that surveys new mothers who are representative of all registered births to Washington State residents.

Pregnancy Risk Assessment Monitoring System

PRAMS was developed by the Centers for Disease Control and Prevention (CDC) in 1987. Washington PRAMS began to collect data in June of 1993. The The PRAMS survey asks about topics related to risk factors before and during pregnancy and infancy, access to prenatal and children's health care, and content of prenatal care.

Washington PRAMS collects data through a statewide mailing of the survey. The PRAMS survey is sent to new mothers two to six months after they deliver their babies. Telephone follow-up is done for those who do not respond to the mailing. The mail and telephone surveys are available in English and Spanish. Washington PRAMS' weighted response rate for 2018 was 62%.

In Washington, about 2,200 surveys are sent to participants each year. Approximately 206 mothers are drawn each month from birth certificate data using a random sample based on race and ethnicity. The sample includes the following racial/ethnic groups: White not Hispanic, African American not Hispanic, Asian/Pacific Islander not Hispanic, Native American not Hispanic, and Hispanic.

The PRAMS survey is conducted in Phases, and each Phase contains the same questions. A new Phase results in new questions and can impact trend assessment. PRAMS Phases are as follows: Phase 4 (2000-2003), Phase 5 (2004-2008), Phase 6 (2009-2011), Phase 7 (2012-2015), and Phase 8 (2016-2020).

For more information on PRAMS data, contact the PRAMS coordinator at 360-236-3576 or WAPRAMS@doh.wa.gov, or visit the website at http://www.doh.wa.gov/DataandStatisticalReports/HealthBehaviors/PregnancyRiskAssessmentMonitoringSystem.

Pregnancy Smoking	PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015		Phase Change Only	PRAMS 2016		PRAMS 2017		PRAMS 2018		
	Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI	
Smoking in 3 months before pregnancy per 100 pregnant women																
Total	18	(15, 21)	17	(14, 20)	17	(14, 20)	16	(14. 19)		16	(13, 18)	16	(14, 19)	12	(9, 14)	↓
Medicaid	27	(22, 33)	26	(21, 31)	24	(20, 29)	25	(21, 30)		21	(17, 26)	23	(19, 28	18	(14, 23)	↓
Non-Medicaid	10	(7, 13)	9	(6, 13)	10	(7, 14)	8	(6, 11)		11	(7, 14)	9	(7, 13)	5	(3, 8)	↓
Smoking in last 3 months of pregnancy per 100 pregnant women																
Total	8	(6, 11)	7	(5, 9)	6	(4, 8)	7	(5, 9)		6	(4, 8)	6	(4, 8)	5	(3, 7)	↓
Medicaid	14	(10, 20)	12	(9,16)	10	(7, 14)	12	(9, 16)		9	(7, 13)	9	(7, 13)	9	(6, 13)	↓
Non-Medicaid	*3***	(2, 6)	*2***	*(1, 5)*	*1***	*(1, 3)*	*2***	*(1, 5)*		*2***	*(1,5)*	*2***	*(1,4)*	*1***	*(1, 3)*	↓
Smoking at post partum interview per 100 pregnant women[39]																
Total	12	(9, 14)	11	(8, 13)	8	(7, 11)	8	(7, 11)		9	(7, 11)	10	(7, 12)	7	(5, 9)	↓
Medicaid	20	(15, 25)	17	(14, 22)	14	(11, 18)	15	(11, 19)		14	(11, 19)	15	(12, 20)	11	(8, 15)	↓
Non-Medicaid	5	(3,7)	*4***	*(2, 7)*	*3***	*(2, 6)*	*3***	*(2, 6)*		4	(2, 7)	4	(3, 7)	*3***	*(1, 5)*	↓

Highlights

Women who had a Medicaid paid birth had higher rates of smoking before, during and after pregnancy in 2018.

In 2018, 12% of women reported smoking in the three months prior to pregnancy.

Of women who had a Medicaid paid birth and smoked before pregnancy, 55% stopped smoking by the last 3 months of their pregnancy. Among those who stopped, 41% resumed smoking by the time of the PRAMS survey (approximately 2 months after birth). (Data not shown)

Data on maternal smoking can be reported from PRAMS or the birth certificate. Historically there has been substantial underreporting of smoking on the birth certificate compared to PRAMS. This report uses data from PRAMS.

NOTES: Trends assessed from 2009 to 2018. Smoking related questions changed in 2009 so we are not able assess trends prior to 2009.

** Relative Standard Error (RSE) above 30, indicates unstable estimate due to small numbers.

39. The Pregnancy Risk Assessment Monitoring System is administered 2-6 months postpartum.

Perinatal Indicators Report for Washington State

Unintended Pregnancy	PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015			PRAMS 2016		PRAMS 2017		PRAMS 2018	
	Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI
Survey Question: Thinking back to just before you got pregnant, how did you feel about becoming pregnant?															
I wanted to be pregnant sooner															
Total	17	(14, 20)	19	(16, 22)	17	(15, 20)	18	(15, 20)		15	(13, 18)	16	(14, 19)	15	(13, 18)
Medicaid	13	(9, 17)	12	(9, 16)	11	((, 15)	14	(11, 17)		10	(7, 13)	10	(8, 14)	11	(8, 15)
Non-Medicaid	20	(17, 25)	25	(21, 30)	23	(19, 27)	21	(18, 26)		20	(16, 24)	22	(18, 26)	19	(16, 23)
I wanted to be pregnant later															
Total	23	(20, 27)	20	(17, 23)	17	(15, 20)	20	(18, 23)		15	(13,18)	17	(15, 20)	17	(15, 20)
Medicaid	31	(26, 37)	27	(22, 32)	23	(19, 28)	26	(22, 31)		20	(16, 24)	23	(19, 28)	22	(18, 26)
Non-Medicaid	17	(14, 22)	14	(11, 18)	12	(9, 16)	15	(12, 18)		12	(9, 15)	12	(9, 15)	13	(10, 17)
I wanted to be pregnant then															
Total	44	(40, 48)	47	(43, 51)	46	(42, 49)	42	(39, 46)		50	(46, 53)	48	(45, 52)	47	(43, 50)
Medicaid	35	(30, 41)	42	(37, 48)	38	(33, 43)	32	(28, 37)		45	(40, 51)	43	(38, 48)	39	(34, 44)
Non-Medicaid	51	(46, 56)	51	(46, 56)	53	(48, 58)	52	(47. 56)		54	(49, 58)	54	(49, 58)	53	(49, 58)
I didn't want to be pregnant then or at any time in the future															
Total	5	(3, 6)	2	(2, 4)	4	(3, 6)	5	(4, 7)		6	(4, 8)	4	(3, 6)	5	(4, 7)
Medicaid	5	(3, 8)	3	(2, 6)	6	(4, 9)	8	(5, 10)		7	(5, 10)	5	(3, 7)	7	(5, 10)
Non-Medicaid	4	(2, 7)	*2**	*(1, 4)*	*3**	*(2, 5)*	3	(2, 6)		4	(3, 7)	3	(2, 6)	3	(2, 6)
I wasn't sure what I wanted															
Total	11	(9, 14)	12	(10, 14)	15	(13, 18)	15	(12, 17)		14	(12, 17)	14	(12, 17)	16	(13, 19)
Medicaid	16	(12, 21)	16	(12, 20)	21	(18, 26)	21	(17, 25)		19	(15, 23)	19	(15, 23)	22	(17, 26)
Non-Medicaid	8	(5, 11)	8	(6, 11)	9	(7, 13)	9	(7, 13)		11	(8, 14)	10	(7, 13)	11	(8, 14)
Estimated births from unintended pregnancies [40]															
Total	28	(25, 32)	23	(20, 26)	22	(19, 25)	26	(23, 29)		21	(18, 24)	21	(18, 24)	22	(20, 25)
Medicaid	36	(31, 42)	30	(25, 35)	29	(25, 34)	34	(29, 39)		26	(22, 31)	28	(32, 32)	29	(24, 34)
Non-Medicaid	21	(17, 26)	16	(12, 20)	15	(12, 19)	18	(14, 22)		16	(13, 20)	15	(12, 19)	17	(13, 20)
Estimated pregnancies that were unintended [41]	41		36		35		38			34		34		35	

Phase Change Only

Highlights

Approximately 22% of births resulted from unplanned pregnancies in 2018. This rate was significantly higher for women receiving Medicaid coverage (29%) than for women not receiving Medicaid (17%).

The unintended pregnancy rate, which incorporates live birth and abortion data, was approximately 35% in 2018.

NOTES: * Relative Standard Error (RSE) above 30, indicates unstable estimate due to small numbers.

40. The estimate of unintended births is calculated by combining "I wanted to be pregnant later" and "I didn't want to be pregnant then or at any time in the future" response categories.

41. Estimated pregnancies that are unintended are calculated by taking the estimated births that were unintended from PRAMS and multiplying this by the number of livebirths. The number of abortions is added to this number, and then the sum is divided by the number of livebirths and abortions. This estimate assumes that all reported abortions are due to unintended pregnancies, though a small percentage might be medically indicated.

Provider Screening	PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015			PRAMS 2016		PRAMS 2017		PRAMS 2018	
	Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI
Survey Question: During any of your prenatal care visits, did a doctor, nurse, or other health care worker ask you any of the things listed below?[42]															
a. Ask if you were smoking cigarettes															
Total	94	92, 96)	94	(92, 96)	93	(91, 95)	94	(92, 95)		96	(94, 97)	96	(94, 97)	97	(95, 98)
Medicaid	96	(92, 97)	97	(95, 98)	94	(90, 96)	95	(92, 97)		95	(93, 97)	94	(92, 96)	95	(93, 97)
Non-Medicaid	93	(90, 95)	92	(89, 94	93	(90, 95)	92	(89,94)		96	(94, 98)	97	(95, 98)	98	(96, 99)
b. Ask how much alcohol you were drinking															
Total	88	(85, 90)	90	(87, 92)	86	(84, 89)	88	(85, 90)		94	(92, 95)	95	(94, 97)	96	(94, 97)
Medicaid	87	(83, 91)	91	(87, 93	85	(81, 88)	88	(84, 91)		94	(92, 96)	94	(92, 96)	95	(92, 97)
Non-Medicaid	88	(84, 91)	89	(85, 92)	88	(84, 91)	87	(84, 90)		94	(91, 96)	96	(94, 98)	97	(94, 98)
c. Ask if someone was hurting you emotionally or physically															
Total	74	(70, 77)	76	(73, 79)	72	(69, 75)	73	(70, 76)		79	(76, 82)	83	(80, 85)	84	(81, 86)
Medicaid	84	(79, 88)	84	(80, 88)	82	(78, 86)	84	(80, 87)		87	(83, 90)	89	(86, 92)	89	(85, 92)
Non-Medicaid	66	(61, 71)	69	(64, 73)	63	(58, 68)	64	(59, 68)		73	(68, 77)	77	(73, 81)	79	(75, 83)
d. Ask if you were using illegal drugs (marijuana or hash, cocaine, crack, etc.)															
Total	81	(77, 83)	83	(80, 85)	78	(75, 81)	81	(79. 84)		81	(78, 83)	83	(80, 86)	86	(83, 88)
Medicaid	85	(81, 89)	89	(85, 92)	84	(80, 88)	86	(83, 90)		88	(84, 91)	86	(82, 89)	88	(84, 91)
Non-Medicaid	77	(72, 81)	77	(73, 81)	72	(68, 77)	77	(72, 80)		75	(70, 79)	81	(77, 84)	84	(80, 87)
e. Ask if you wanted to be tested for HIV (virus that causes AIDS)															
Total	77	(73, 80)	70	(67, 74)	70	(66, 73)	68	(65, 71)		64	(60, 67)	64	(61, 67)	60	(57, 69)
Medicaid	84	(79, 88)	74	(69, 78)	78	(74, 82)	71	(67, 76)		69	(64, 74)	69	(64, 73)	64	(59, 69)
Non-Medicaid	71	(66, 76)	67	(62, 72)	62	(57, 67)	65	(61, 70)		60	(55, 64)	60	(55, 64)	57	(52, 62)
f. Ask if you planned to use birth control after your baby was born															
Total	89	(86, 91)	91	(88, 93)	90	(87, 92)	91	(89, 93)		83	(80, 86)	85	(83, 88)	85	(83, 88)
Medicaid	92	(88, 94)	93	(90, 95)	91	(88, 94)	93	(90, 95)		87	(83, 91)	89	(85, 91)	90	(87, 93)
Non-Medicaid	87	(83, 90)	88	(85, 91)	88	(84, 91)	89	(86, 91)		79	(75, 83)	82	(79, 89)	81	(77, 84)

Phase and Question Change

Highlights

In 2018, new mothers reported provider screening rates of 96 % and 97% for alcohol use and smoking respectively, and 85% for postpartum birth control.

Women receiving Medicaid were significantly more likely than those not receiving Medicaid to be asked by a health care provider about domestic violence, illegal drug use, or HIV testing than women not receiving Medicaid.

42. Wording of this question changed from Phase 7 to Phase 8, trends are not available.

Provider Screening (continued)	PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015		Phase and Question Change	PRAMS 2016		PRAMS 2017		PRAMS 2018		
	Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI	
Survey Question: During any of your prenatal care visits, did a doctor, nurse, or other health care worker ask you any of the things listed below?																
b. Talk with you about diseases or birth defects that could run in your family or your partner's family																
Total	82	(79, 85)	84	(81, 87)	83	(80, 85)	84	(81, 86)		90	(87, 92)	91	(88, 92)	89	(86, 91)	
Medicaid	79	(73, 83)	81	(77, 85)	82	(78, 86)	84	(80, 87)		90	(87, 93)	89	(85, 92)	87	(83, 91)	
Non-Medicaid	85	(81, 88)	87	(83, 90)	83	(79, 86)	84	(80, 87)		90	(86, 92)	92	(90, 95)	90	(87, 93)	

Breastfeeding	PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015		Phase Change Only	PRAMS 2016		PRAMS 2017		PRAMS 2018		
	Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI	
Survey Question: Did you ever breastfeed or pump breast milk to feed to your new baby after delivery even for a short period of time?																
Percent of women who responded they ever breastfed																
Total	96	(94, 97)	95	(93, 96)	97	(95, 98)	96	(95, 97)		96	(94, 97)	95	(94, 96)	97	(96, 98)	↑
Medicaid	94	(91, 96)	92	(88, 94)	95	(92, 97)	95	(92, 97)		94	(91, 96)	92	(90, 94)	95	(93, 97)	→
Non-Medicaid	97	(95, 98)	98	(95, 99)	99	(97, 99)	98	(96, 99)		98	(96, 99)	98	(97, 99)	99	(98, 100)	↑
Percent of women who reported breastfeeding at two months post partum																
Total	81	(77, 84)	79	(75, 82)	84	(81, 86)	83	(80, 85)		82	(79, 84)	81	(79. 83)	83	(80, 85)	*
Medicaid	71	(66, 76)	69	(64, 74)	76	(72, 80)	77	(72, 81)		72	(67, 76)	71	(68, 75)	73	(68, 78)	*
Non-Medicaid	88	(84, 91)	88	(84, 91)	91	(97, 93)	88	(84, 90)		91	(88, 93)	89	(87, 91)	91	(88, 93)	↑

Highlights

Rates of breastfeeding initiation remained at or above 95% for all women.

Rates of breastfeeding at 2 months postpartum for all mothers increased from 2007-2014, and remained steady since then.

*Trend Note: From 2008 to 2014 both the overall trend and the trend for Medicaid women breast feeding at 2 months increased, since 2014 both rates stabilized.

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Folic Acid Use Prior to Pregnancy	PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015			PRAMS 2016		PRAMS 2017		PRAMS 2018		
	Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI	
Survey Question: In the month *before* you got pregnant with your new baby, how many times a week did you take a multivitamin, a prenatal vitamin or a folic acid vitamin?																
I didn't take a multivitamin at all																
Total	44	(40, 48)	50	(46, 54)	46	(43, 50)	50	(46, 53)	Phase Change Only	48	(45, 52)	47	(45, 49)	49	(45, 52)	↓
Medicaid	61	(55, 67)	69	(64, 74)	65	(60, 70)	66	(61, 70)		64	(59, 68)	62	(58, 65)	64	(59, 69)	↓
Non-Medicaid	29	(25, 34)	32	(28, 37)	29	(24, 33)	35	(30, 40)		35	(31, 40	34	(30, 37)	34	(30, 39)	→
Did take, not every day																
Total	18	(15, 21)	15	(12, 18)	19	(16, 22)	15	(13, 17)		15	(13, 18)	17	(15, 20)	15	(13, 18)	
Medicaid	16	(12, 21)	12	(9, 15)	11	(8, 15)	11	(9, 15)		15	(12, 19)	16	(13, 21)	12	(9, 16)	
Non-Medicaid	19	(15, 24)	18	(14, 22)	26	(22, 30)	18	(15, 22)		16	(13, 19)	19	(15, 22)	18	(15, 22)	
Every day of the week																
Total	39	(35, 43)	35	(32, 39)	35	(32, 39)	36	(32, 39)		36	(33, 40)	37	(34, 39)	36	(33, 40)	*
Medicaid	23	(18, 28)	20	(16, 24)	24	(20, 29)	23	(19, 27)		21	(18, 26)	22	(20, 28)	23	(19, 28)	↑
Non-Medicaid	52	(47, 57)	50	(45, 55)	46	(41, 51)	47	(42, 52)		49	(44, 54)	50	(46, 53)	48	(43, 53)	*

Highlights

In 2018, only about 36% of women reported taking a multivitamin every day of the week, while 49% of women reported not taking any multivitamin at all in the month prior to becoming pregnant.

Women receiving Medicaid reported less than half the daily vitamin use of women not receiving Medicaid.

Women receiving Medicaid were almost twice as likely as non-Medicaid women to take no vitamins at all.

*Trend Note: The overall rate of daily use of a prenatal vitamin increased from 2008 to 2012 and then leveled off. This was driven by a similar pattern seen in non-Medicaid women whose daily use declined in 2011, and remained stable since.

Sleep Position	PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015		Phase Change Only	PRAMS 2016		PRAMS 2017		PRAMS 2018		
	Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI	
Survey Question: How do you *most often* lay your baby down to sleep now?																
On his or her side																
Total	12	(10, 15)	10	(8, 12)	11	(9, 13)	10	(8, 13)		10	(8, 12)	8	(7, 9)	10	(8, 12)	
Medicaid	17	(12, 22)	11	(8, 15)	14	(10, 17)	13	(10, 17)		12	(9, 15)	9	(7, 11)	12	(9, 16)	
Non-Medicaid	9	(6, 12)	8	(6, 11)	8	(6, 11)	8	(6, 11)		8	(6, 11)	7	(5, 9)	9	(6, 12)	
On his or her back																
Total	76	(73, 79)	82	(79, 85)	79	(76, 81)	83	(80, 85)		81	(78, 83)	83	(81, 85)	82	(79, 85)	↑
Medicaid	71	(65, 76)	80	(76, 84)	73	(68, 77)	77	(73, 81)		76	(71, 80)	78	(75, 81)	78	(73, 82)	→
Non-Medicaid	80	(76, 84)	84	(80, 87)	84	(80, 87)	88	(48, 90)		85	(81, 88)	87	(85, 89)	86	(83, 89)	↑
On his or her stomach																
Total	7	(5, 10)	6	(4, 8)	5	(4, 7)	3	(2, 4)		4	(3, 6)	4	(3,5)	4	(2, 5)	
Medicaid	5	(3, 9)	5	(3, 8)	4	(3, 7)	3	(2, 5)		5	(3, 8)	5	(4, 7)	4	(2, 6)	
Non-Medicaid	9	(6, 12)	6	(4, 10)	6	(5, 9)	3	(2, 5)		*2*	*(1, 4)*	4	(3,5)	4	(2, 6)	
Other[43]																
Total	5	(3, 7)	3	(2, 4)	5	(4, 6)	4	(3, 6)		5	(4, 7)	5	(3, 6)	4	(3, 6)	
Medicaid	7	(5, 11)	4	(2, 6)	9	(7, 12)	7	(5, 10)		8	(6, 12)	8	(6, 11)	7	(5, 10)	
Non-Medicaid	*2***	*(1, 4)*	*1***	*(0, 3)*	*2***	*(1, 3)*	*1***	*(1, 3)*		3	(2, 5)	2	(1, 3)	*2***	*(1, 3)*	

Highlights

In 2018 approximately 82% of mothers reported laying their newborns down to sleep most often on their backs. This was a statistically significant increase since 2008 (data not shown).

** NOTE: Relative Standard Error (RSE) above 30, and estimates are unstable.

43. "Other" included "side and back", "side and stomach," "back and stomach," and "all 3 positions."

Post Partum Depression [44]		PRAMS 2012		PRAMS 2013		PRAMS 2014		PRAMS 2015			PRAMS 2016		PRAMS 2017		PRAMS 2018	
		Percent	95% CI	Percent	95% CI	Percent	95% CI	Percent	95% CI		Percent	95% CI	Percent	95% CI	Percent	95% CI
Survey Question Part A: *Since your new baby was born* , how often have you felt down, depressed, or hopeless?																
Always or Often	**Total**	6	(4, 8)	6	(5, 8)	7	(5, 9)	6	(5, 8)		7	(5, 9)	5	(4, 7)	6	(4, 8)
	Medicaid	8	(5, 12)	8	(5,11)	10	(7, 13)	9	(7, 13)		7	(5, 10)	9	(6, 12)	7	(5, 10)
	Non-Medicaid	4	(2, 6)	5	(3, 8)	4	(3, 7)	3	(2, 5)		7	(5, 10)	*2*	*(1, 4)*	5	(3, 7)
Survey Question Part B: *Since your new baby was born,* how often have you had little interest or little pleasure in doing things?										Phase Change Only						
Always or Often	**Total**	7	(5, 9)	8	(6, 10)	9	(7, 11)	8	(6, 10)		8	(6, 10)	8	(7, 10)	9	(7, 10.8)
	Medicaid	10	(7, 14)	10	(7, 14)	13	(10, 217)	10	(8, 13)		9	(6, 12)	12	(9, 16)	10	(8, 14)
	Non-Medicaid	5	(3, 7)	6	(4, 9)	6	(4, 8)	6	(4, 7)		8	(5, 11)	5	(3, 7)	7	(5, 10)
Women who answered "Always" or "Often" to post partum depression screening questions Part A and Part B																
Total		10	(8, 13)	11	(9, 14)	13	(10, 15)	11	(9, 13)		12	(10, 14)	11	(9, 14)	11	(9, 14)
Medicaid		14	(10, 19)	15	(12, 19)	18	(14, 22)	15	(12, 19)		13	(10, 17)	16	(12, 20)	13	(9, 16)
Non-Medicaid		7	(5, 10)	7	(5, 11)	8	(5, 10)	8	(5,10)		11	(8, 14)	7	(5, 9)	10	(8, 14)

Highlights

Literature suggests that Part A and Part B together can identify women at high risk for post partum depression, which may indicate a need for further diagnostic evaluation (see note 45 below).

In 2018, 11% of women responded that they have experienced postpartum depression symptoms. When extrapolated to all births in 2018, this represents approximately 9,500 women statewide.

44. Questions related to postpartum depression changed with nearly every phase. In 2012, the questions returned to the Phase 5 (2004-2008) format. Because of the format changes, it was not possible to compare this question across Phases.

45. Prevalence of Self-Reported Postpartum Depressive Symptoms-17 States, 2004-2005. MMWR. 2008;57:361-366.

Data Sources for Perinatal Indicators Report for Washington State

Total Live births and Live births by Mother's Race and Ethnicity

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Total Deliveries, Medicaid Deliveries and Multiple Deliveries

Washington State Health Care Authority. Characteristics of Women who Gave Birth in Washington State Washington State Department of Social and Health Services, Research and Data Analysis. 1/9/2020

Multiple Deliveries

Washington State Health Care Authority,Plurality by Medicaid Status for All Washington Resident Births. Washington State Department of Social and Health Services, First Steps Database, 5/16/2019.

Birth and Pregnancy Rates

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Martin JA, Hamilton BE, Osterman MJK, et al. Births: Final data for 2015. National vital statistics reports; vol 66 no 1. Hyattsville, MD: National Center for Health Statistics. 2017.

Washington State Occurrent Births and Birth Facility

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Birth Attendant

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Method of Delivery

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Martin JA, Hamilton BE, Osterman MJK, Driscoll AK. Births: Final data for 2018. National vital statistics reports; vol 68 no 13. Hyattsville, MD: National Center for Health Statistics. 2019.

Maternal Morbidity

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Institute of Medicine. Weight Gain During Pregnancy: Reexamining the Guidelines. May 28, 2009.

Fetal, Perinatal, Neonatal, Post-Neonatal, and Infant Mortality (Period) Rates

Washington State Department of Health, Center for Health Statistics, Fetal Death Certificate Data, 2018, October 2019.

Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 2018, October 2019.

Ely DM, Driscoll AK. Infant mortality in the United States 2018: Data from the period linked birth/infant death file. National Vital Statistics Reports, vol 69 no 7. Hyattsville, MD: National Center for Health Statistics, 2020.

Sudden Unexpected Infant Death (SUID) Mortalit

Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 2018, October 2019.

Infant Mortality (Period) Rate by Mother's Race/Ethnicity

Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 2018, October 2019.

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Ely DM, Driscoll AK. Infant mortality in the United States 2017: Data from the period linked birth/infant death file. National Vital Statistics Reports, vol 68 no 10. Hyattsville, MD: National Center for Health Statistics, 2019.

Infant Mortality Rate by Medicaid Status

Washington State Health Care Authority, Plurality by Medicaid Status for All Washington Resident Births. Washington State Department of Social and Health Services, First Steps Database, 5/16/2019.

Infant Mortality Rate by Plurality

Washington State Health Care Authority, Plurality by Medicaid Status for All Washington Resident Births. Washington State Department of Social and Health Services, First Steps Database, 5/16/2019.

Birth Weight

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: Final data for 2017. National vital statistics reports; vol 67 no 8. Hyattsville, MD: National Center for Health Statistics. 2018.

Low Birth Weight by Medicaid Status

Washington State Health Care Authority, Low Birth Weight by Plurality and Medicaid Status for Liveborn Washington Resident Births. Washington State Department of Social and Health Services, First Steps Database, 5/16/2019.

Percent Very Low Birth Weight Births at Tertiary Level Facilities

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Preterm Births

Washington State Department of Health, Center for Health Statistics, Birth Certificate Data, 2018, October 2019.

Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: Final data for 2018. National vital statistics reports; vol 68 no 13. Hyattsville, MD: National Center for Health Statistics. 2019.

Prenatal Care

Plurality by Medicaid Status for All Washington Resident Births. Washington State Department of Social and Health Services, First Steps Database, 5/16/2019.

Medicaid Expenditures for Maternal and Infant Services

Washington State Health Care Authority. Medicaid Paid Maternal Services for Washington Births to Medicaid Mothers, 2011-2018 Washington State Department of Social and Health Services, Research and Data Analysis. 9/5/2019

Pregnancy Risk Assessment Monitoring System (PRAMS)

Washington State Department of Health, Prevention and Community Health Division, Office of Family and Community Health Improvement, Surveillance and Evaluation Section. Olympia 2020.

All analyses of Washinton State birth, fetal, death, linked infant death, and PRAMS data were conducted by Justin Weisser in Surveillance and Evaluation, Office of Family and Community Health Improvement, WA DOH, 2020.