

76th OREGON LEGISLATIVE ASSEMBLY--2011 Regular Session

**Enrolled  
House Bill 3311**

Sponsored by Representatives KOTEK, FREDERICK, Senator SHIELDS; Representatives CANNON, DOHERTY, HOYLE, NATHANSON, TOMEL, Senator MONNES ANDERSON

CHAPTER .....

AN ACT

Relating to birth outcomes; and declaring an emergency.

**Be It Enacted by the People of the State of Oregon:**

**SECTION 1.** (1) As used in this section, “doula” means a birth companion who provides personal, nonmedical support to women and families throughout a woman’s pregnancy, childbirth and post-partum experience.

(2) The Oregon Health Authority, including the Office of Multicultural Health and Services, shall explore options for providing or utilizing doulas in the state medical assistance program to improve birth outcomes for women who face a disproportionately greater risk of poor birth outcomes.

(3) The authority shall report to the House committee on health care and any other appropriate legislative committee in February 2012:

(a) Its findings under subsection (2) of this section; and

(b) All of the options for providing or utilizing services in the medical assistance program that improve birth outcomes for women who face a disproportionately greater risk of poor birth outcomes.

**SECTION 2.** This 2011 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2011 Act takes effect on its passage.

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# APPENDIX B: House Bill 3311 Implementation Committee Charter

## Oregon Health Authority HB 3311 Implementation Committee

### I. Authority

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The HB 3311 Committee is established by House Bill 3311, Section 2, which states that the Oregon Health Authority, including the Office of Multicultural Health and Services, shall explore options for providing or utilizing doulas in the state medical assistance program to improve birth outcomes for women who face a disproportionately greater risk of poor birth outcomes. This charter defines the objectives, responsibilities and scope of activities of the Health Care Workforce Committee.

This charter will be terminated when the Oregon Health Authority reports to the House committee on health care and any other appropriate legislative committee in February 2012.

The Oregon Health Authority:

- Must report options for providing or utilizing doulas in the state medical assistance program to improve birth outcomes for women who face a disproportionately greater risk of poor birth outcomes.

### II. Deliverables

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The HB 3311 Implementation Committee is chartered to deliver to the Legislature a report describing:

- women who face a disproportionately greater risk of poor birth outcomes
- promising models for providing or utilizing doulas
- possible approaches to integrate doula models into state medical assistance program.

### III. Time Line

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- The HB 3311 Implementation Committee shall convene by **September 30, 2011**
- Data identifying women in Oregon who face a disproportionate risk of poor birth outcomes must be completed by **October 2011**.
- Research on doula models must be completed by **November 2011**
- Research on doula reimbursement models must be completed by **December 2011**
- The draft report on options for providing or utilizing doulas in the state medical assistance program to improve birth outcomes for women who face a disproportionately greater risk of poor birth outcomes will be completed by **January 2012** by OMHS with input from PH, DMAP and OHPB Workforce Committee participants
- The final report will be delivered to the Legislature in **February 2011**

### IV. Dependencies

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The HB 3311 Implementation Committee will seek information from and collaborate with a wide range of partners including:

- a. The Oregon Healthcare Workforce Institute
- b. Health care employers and providers
- c. The Oregon Health Policy Board Workforce Committee
- d. Health care professional licensure and certification boards
- e. Community based Organizations

### V. Staff Resources

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The Office of Multicultural Health and Services will provide staff support to Committee leadership.

Committee Lead: Tricia Tillman

Committee Assistant: Rachel Gilmer

## **APPENDIX C: House Bill 3311 Implementation Committee Membership**

### **Committee Co-Chairs:**

Shafia Monroe, International Center for Traditional Childbearing  
Amelia Psmythe, Oregon Nursing Mothers Counsel

### **Committee Members:**

Rita Aparicio, Doula Caribe  
Lani Doser, PDX Doulas  
Sadie Eck, Birthingway Midwifery College  
LM Alaiyo Foster, Cascade Aids Project  
Maryanne Harmer, Regence Blue Cross  
Denise Johnson, Care Oregon  
Jennie Leslie, Oregon Health & Science University  
Ericka Matteson, PDX Doulas  
Charlene McGee, Kaiser Permanente Northwest  
Ellen Tilden, Oregon Health & Science University

### **Committee Staff:**

Committee Lead: Tricia Tillman, Office of Equity and Inclusion, OHA  
Committee Assistant: Rachel Gilmer, Office of Equity and Inclusion, OHA

Isabel Bickle, Division of Medical Assistance Programs, OHA  
Trevor S. Douglass, Division of Medical Assistance Programs, OHA

Katherine Bradley, Office of Family Health, OHA  
Cat Wilcox, Office of Family Health, OHA



Office of Family Health

# HB 3311 Data Request

Prepared by Maternal and Child Health  
Assessment, Evaluation and Informatics Unit

## Analysis of Data from:

- Oregon Vital Records 2008-2010
- Oregon Pregnancy Risk Assessment Monitoring System (PRAMS; 2009-2010 Births)

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January 2012

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**Table 1: Disparities in Birth Outcomes**

*Based on statistical significance compared to Non-Latino White.*

<b>Based on statistical significance compared to Non-Latino White</b>						
<b>Indicator</b>	<b>Hispanic/Latino</b>	<b>Non-Latino African American</b>	<b>Non-Latino American Indian</b>	<b>Non-Latino Asian</b>	<b>Non-Latino Pacific Islander</b>	<b>Non-Latino Multiple Race</b>
Premature Birth	○	▲	▲	○	▲	▲
Low Birthweight	○	▲	▲	▲	▲	▲
Cesarean Delivery	○	▲	○	▲	▲	▲
Apgar Score	○	▲	○	○	○	○
Medicaid/OHP Births <i>(principal payment source)</i>	▲	▲	▲	○	○	▲
Infant Mortality	▲	▲	▲	○	○	○
Breastfeeding Initiated	○	○	○	○	○	○
Postpartum Depression Symptoms	○	○	○	○	○	○

*Referent group is Non-Latino White*

*Underlying numbers are in Appendix I*

*Oregon Vital Records 2008-2010: Premature Births, Low Birthweight, Cesarean Delivery, Apgar Score and Medicaid Paid Births*

*PRAMS 2009-2010 Births: Breastfeeding Initiated, Postpartum Depression Symptoms*

*See Appendix III for explanation of multiple race variable*

<b>Symbols</b>	
No disparity/ Doing better	○
Disparity	▲
NP: Not provided due to small numbers	

**Table 2: Disparities in Birth Outcomes**  
*Among those with Medicaid paid births and those with births not paid by Medicaid*

<i>Based on statistical significance compared to Non-Latino White</i>												
Indicator	Hispanic/Latino		Non-Latino African American		Non-Latino American Indian		Non-Latino Asian		Non-Latino Pacific Islander		Non-Latino Multiple Race	
	Medicaid	Non-Medicaid	Medicaid	Non-Medicaid	Medicaid	Non-Medicaid	Medicaid	Non-Medicaid	Medicaid	Non-Medicaid	Medicaid	Non-Medicaid
Premature Birth	○	▲	▲	▲	○	○	○	○	○	○	▲	▲
Low Birthweight	○	▲	▲	▲	○	○	○	▲	○	○	○	▲
Cesarean Delivery	○	○	▲	▲	○	○	▲	▲	▲	▲	▲	○
Apgar Score	○	○	○	○	○	○	○	○	○	○	○	○
Infant Mortality	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Breastfeeding Initiated	○	○	○	○	○	○	○	○	○	○	○	○
Postpartum Depression Symptoms	○	○	○	○	○	○	○	○	○	○	○	○

Referent group is Non-Latino White

Oregon Vital Records 2008-2010: Premature Births, Low Birthweight, Cesarean Delivery, Apgar Score and Medicaid Paid Births

PRAMS 2009-2010 Births: Breastfeeding Initiated, Postpartum Depression Symptoms

See Appendix III for explanation of multiple race variable

Symbols	
No disparity/ Doing better	○
Disparity	▲
NP: Not provided due to small numbers	

**Table 3: Disparities in Birth Outcomes**  
*Among those who live in urban areas and those who live in rural areas*

<b>Based on statistical significance compared to Non-Latino White</b>												
Indicator	Hispanic/Latino		Non-Latino African American		Non-Latino American Indian		Non-Latino Asian		Non-Latino Pacific Islander		Non-Latino Multiple Race	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Premature Birth	○	○	▲	○	○	▲	○	○	▲	○	▲	○
Low Birthweight	▲	○	▲	○	▲	○	▲	○	▲	○	▲	○
Cesarean Delivery	○	▲	▲	○	○	▲	▲	▲	▲	○	▲	○
Apgar Score	○	○	▲	○	○	○	○	○	○	○	○	○
Medicaid/OHP Births ( <i>principal payment source</i> )	▲	▲	▲	▲	▲	▲	○	○	▲	○	▲	▲
Infant Mortality	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Breastfeeding Initiated	○	○	○	○	○	○	○	○	○	○	○	○
Postpartum depression/symptoms	○	○	○	○	○	○	○	○	○	○	○	○

Referent group is Non-Latino White

Oregon Vital Records 2008-2010: Premature Births, Low Birthweight, Cesarean Delivery, Apgar Score and Medicaid Paid Births

PRAMS 2009-2010 Births: Breastfeeding Initiated, Postpartum Depression Symptoms

See Appendix III for explanation of multiple race variable

Symbols	
No disparity/ Doing better	○
Disparity	▲
NP: Not provided due to small numbers	

## Figures 1-8: Disparities in Birth Outcomes

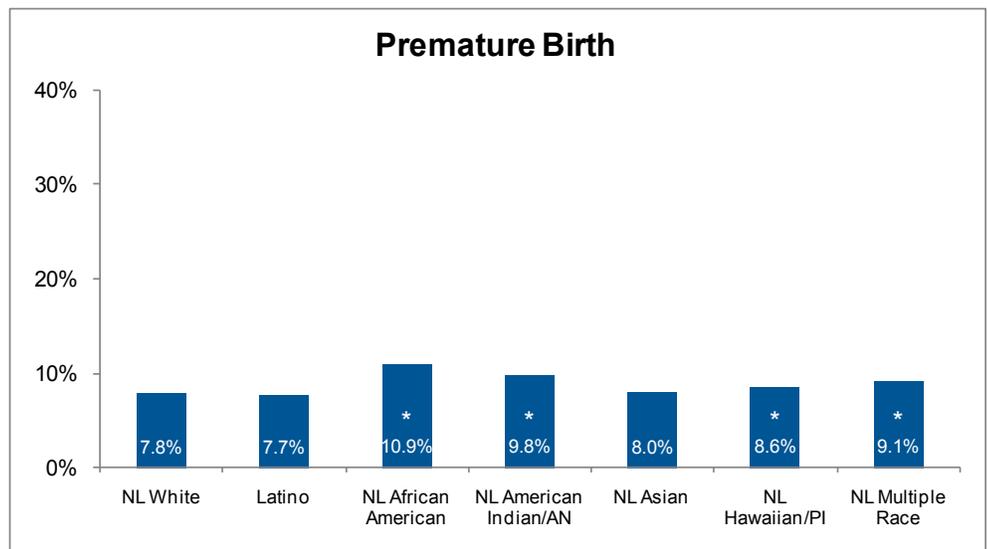
Reference for Table 1 (page 2)

Based on statistical significance compared to Non-Latino White.

See Appendix III for explanation of multiple race variable.

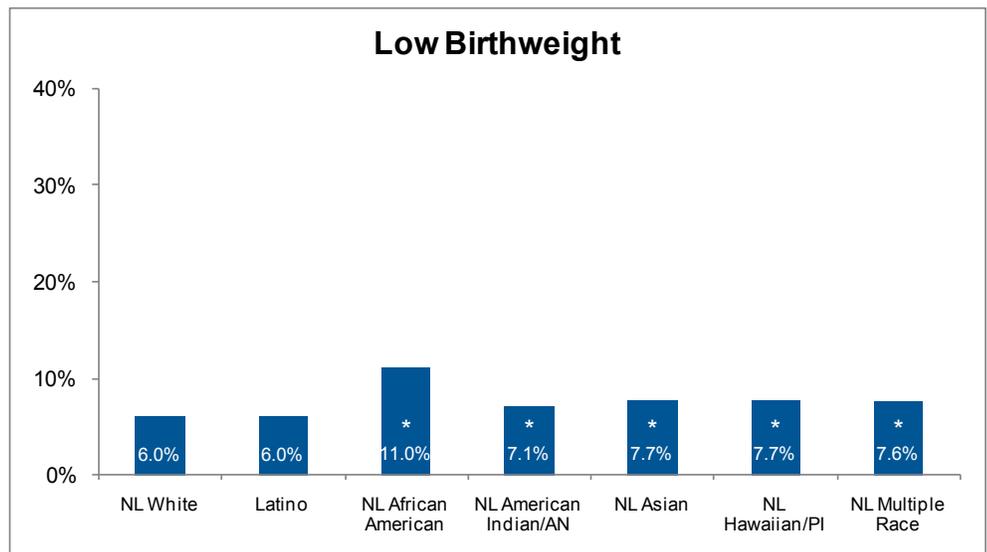
**Figure 1. Premature Births:**  
Estimated gestational age <37 weeks.

African Americans are at the greatest risk for premature birth. American Indian/Alaska Natives, multiple race mothers, and Hawaiian/Pacific Islanders are also at significantly higher risk than non-Latino Whites.



**Figure 2. Low Birthweight:**  
Birthweight is <2500 grams.

African Americans are at the greatest risk for delivering babies with low birth weight. Asian, Hawaiian/Pacific Islanders, multiple race mothers and American Indian/Alaska Natives are also at significantly higher risk than non-Latino Whites.



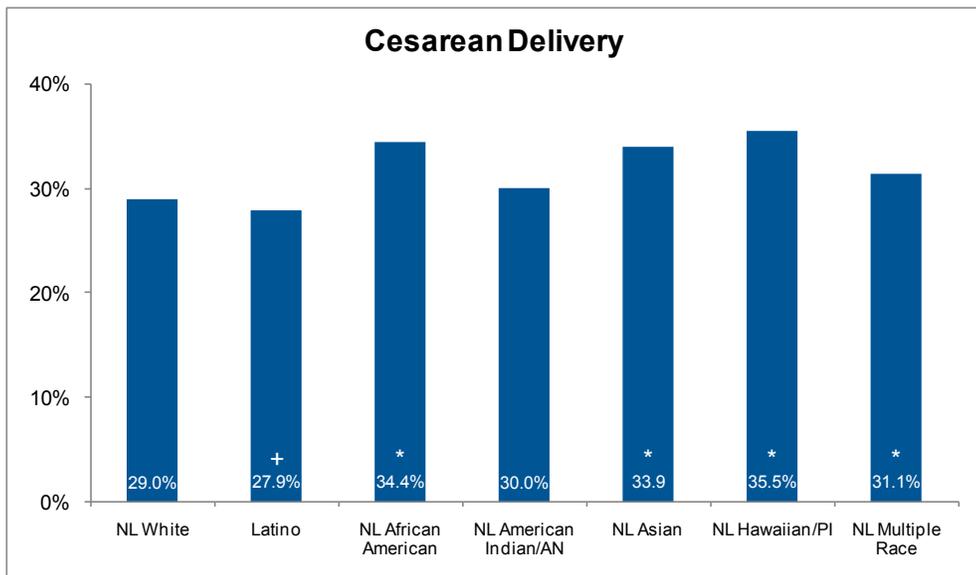
\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

Source: Oregon Vital Records 2008-2010; PRAMS 2009-2010 Births

**Figure 3. Cesarean Delivery:**  
Method of delivery: Cesarean delivery.

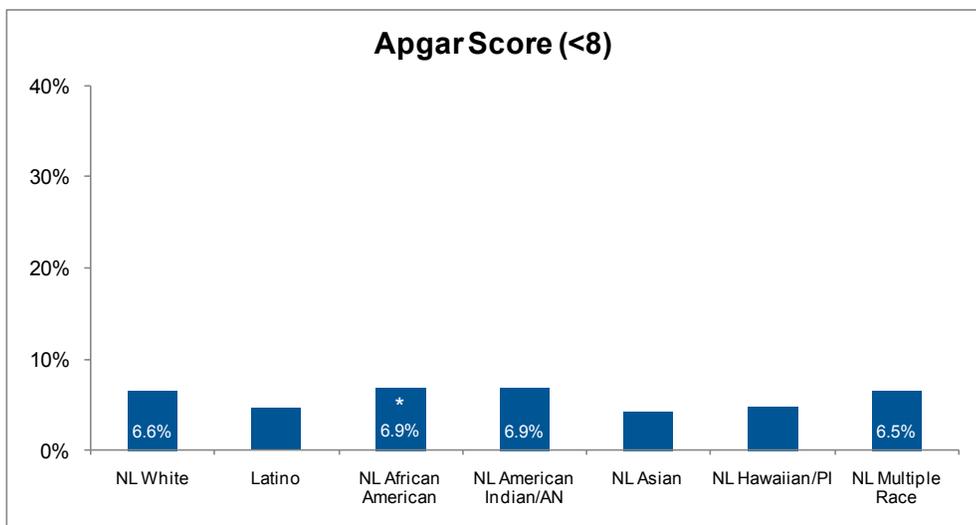
All population groups, with the exception of American Indian/Alaska Native and Latinas, are significantly more likely to have a Cesarean birth than non-Latino whites. Latina mothers have significantly less Cesarean births than non-Latino White mothers.



**Figure 4. Apgar Score:**

Apgar Score is <8. The Apgar score is determined by evaluating the newborn baby on five criteria (appearance, pulse, grimace, activity, and respiration) on a scale from zero to two, then summing up the five values thus obtained. The score ranges from 0-10.

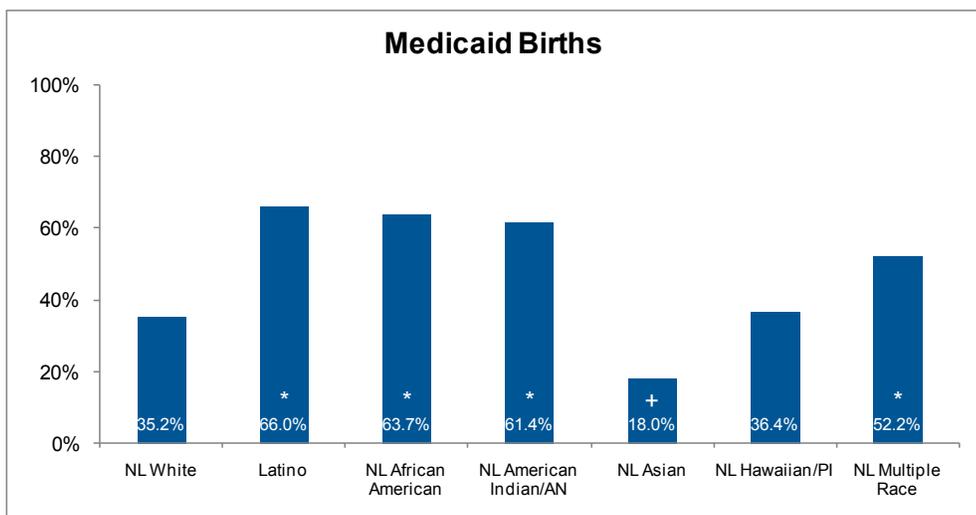
African American babies are at greater risk for having a low Apgar score. Latino, Asian and Hawaiian/Pacific Islander babies are significantly less likely than non-Latino Whites to have Apgar scores less than 8.



**Figure 5. Medicaid Births:**

Principal source of payment for the birth is Medicaid/Oregon Health Plan.

Latina, African American, American Indian/AN, and multiple race mothers have significantly more births paid by Medicaid than non-Latino Whites. Asians have significantly fewer Medicaid births than non-Latino Whites.



\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

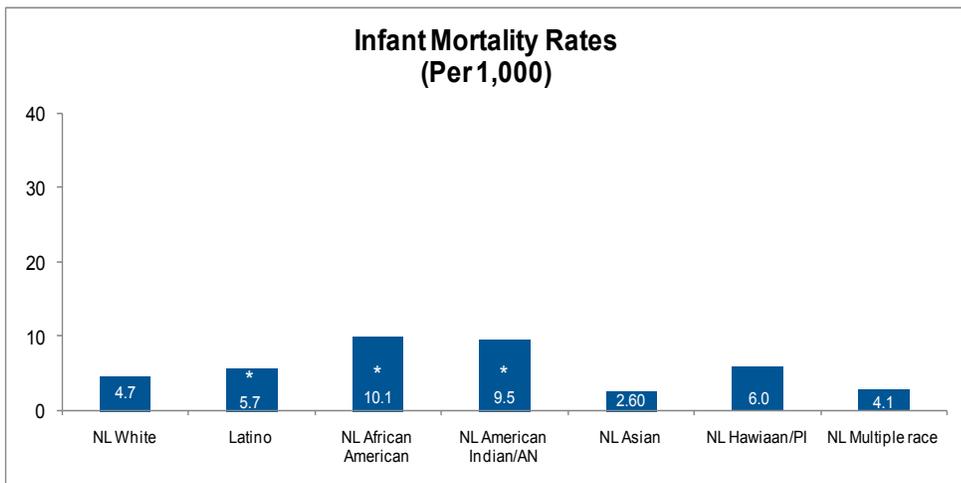
Source: Oregon Vital Records 2008-2010; PRAMS 2009-2010 Births

**Figure 6. Infant Mortality Rates:**

*Based on deaths that occurred in 2008-2009.*

African Americans, American Indian/Alaska Natives, and Latinos have a significantly higher rate of infant mortality compared with non-Latino Whites.

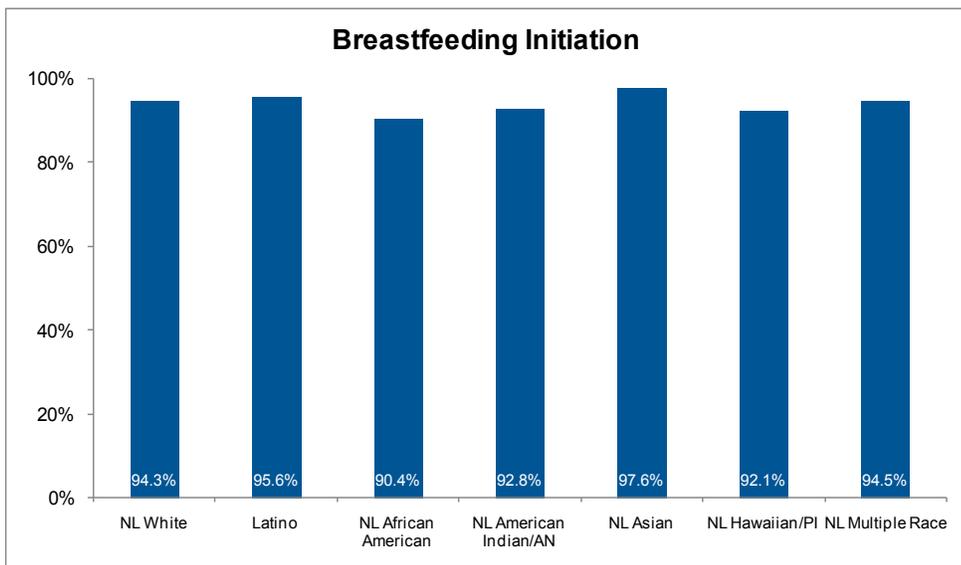
For NL Asians, NL Hawaiian/Pacific Islanders, and those with multiple races, the absolute numbers of deaths in 2008-2009 were less than 12. Numbers less than 12 may be statistically unreliable, so they should be interpreted with caution.



**Figure 7. Breastfeeding Initiation:**

*Breastfeeding initiation after delivery (PRAMS 2009-2010 births). Question: Did you ever breastfeed or pump breast milk to feed your new baby after delivery, even for a short period of time?*

There is no significant difference in breastfeeding initiation among population groups in comparison to non-Latino whites.

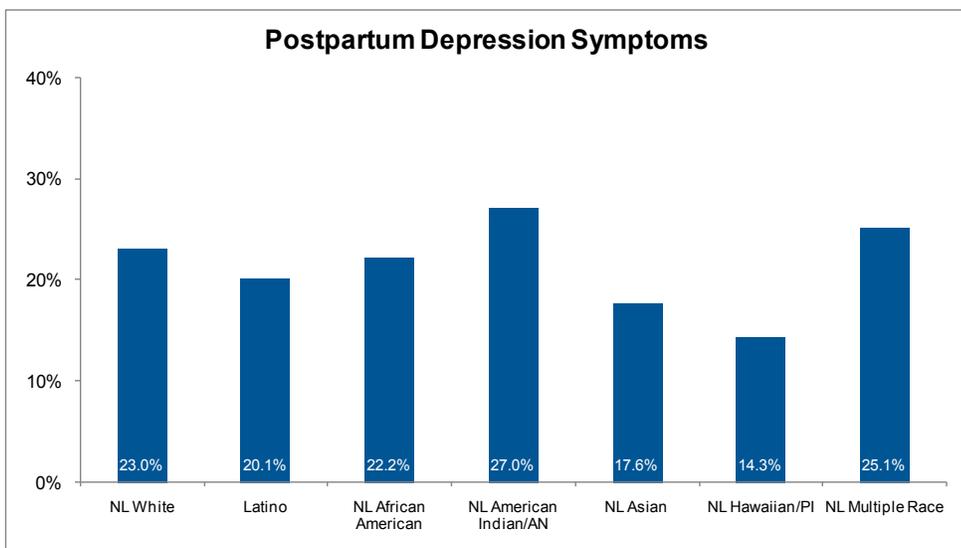


**Figure 8. Postpartum Depression Symptoms:**

*Checked "Always" or "Often" in any of the three postpartum depression questions (PRAMS 2009-2010 births). Question: Since your new baby was born, how often have you felt or experienced the following (Never, Rarely, Sometimes, Often, or Always)*

1. I felt down, depressed, or sad
2. I felt hopeless
3. I felt slowed down

There is no significant difference among population groups of postpartum depression than that of non-Latino Whites.



\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

Source: Oregon Vital Records 2008-2010; PRAMS 2009-2010 Births

## APPENDIX I: Data for Table 1 (page 2): Disparities in Birth Outcomes

Confidence Interval (CI): If the survey were repeated 100 times, the percentage who answered "YES" would be expected to fall within the confidence interval range in 95 of the 100 surveys.

Premature Birth	N: # of Births	Percent of Births	CI: Lower Bounds	CI: Upper Bounds	Significance: 95% Confidence Level
Non-Latino (NL) White	96,162	7.8%	7.8%	7.9%	
Latino/Hispanic	28,500	7.7%	7.6%	7.8%	
NL African American	2,920	10.9%	10.5%	11.3%	*
NL American Indian/Alaska Native	1,801	9.8%	9.4%	10.3%	*
NL Asian	5,162	8.0%	7.8%	8.2%	
NL Hawaiian/Pacific Islander	2,026	8.6%	8.2%	9.0%	*
NL Multiple Race	3,778	9.1%	8.8%	9.4%	*

Low Birthweight	N: # of Births	Percent of Births	CI: Lower Bounds	CI: Upper Bounds	Significance: 95% Confidence Level
Non-Latino (NL) White	96,224	6.0%	6.0%	6.0%	
Latino/Hispanic	28,519	6.0%	5.9%	6.1%	
NL African American	2,920	11.0%	10.6%	11.4%	*
NL American Indian/Alaska Native	1,801	7.1%	6.8%	7.4%	*
NL Asian	5,165	7.7%	7.5%	7.9%	*
NL Hawaiian/Pacific Islander	2,026	7.7%	7.4%	8.0%	*
NL Multiple Race	3,782	7.6%	7.4%	7.8%	*

Cesarean Delivery	N: # of Births	Percent of Births	CI: Lower Bounds	CI: Upper Bounds	Significance: 95% Confidence Level
Non-Latino (NL) White	96,218	29.0%	28.8%	29.2%	
Latino/Hispanic	28,519	27.9%	27.6%	28.2%	+
NL African American	2,920	34.4%	33.1%	35.7%	*
NL American Indian/Alaska Native	1,802	30.0%	28.6%	31.4%	
NL Asian	5,165	33.9%	33.0%	34.8%	*
NL Hawaiian/Pacific Islander	2,026	35.5%	34.0%	37.1%	*
NL Multiple Race	3,782	31.1%	30.1%	32.1%	*

Apgar Score < 8	N: # of Births	Percent of Births	CI: Lower Bounds	CI: Upper Bounds	Significance: 95% Confidence Level
Non-Latino (NL) White	95,961	6.6%	6.6%	6.6%	
Latino/Hispanic	28,466	4.6%	4.6%	4.7%	+
NL African American	2,915	6.9%	6.7%	7.2%	*
NL American Indian/Alaska Native	1,791	6.9%	6.6%	7.2%	
NL Asian	5,153	4.2%	4.1%	4.3%	+
NL Hawaiian/Pacific Islander	2,025	4.8%	4.6%	5.0%	+
NL Multiple Race	3,760	6.5%	6.3%	6.7%	

\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

Source: Oregon Vital Records 2008-2010; PRAMS 2009-2010 Births

**APPENDIX I (continued): Data for Table 1 (page 2): Disparities in Birth Outcomes**

<b>Medicaid Paid Births</b>	<b>N: # of Births</b>	<b>Percent of Births</b>	<b>CI: Lower Bounds</b>	<b>CI: Upper Bounds</b>	<b>Significance: 95% Confidence Level</b>
Non-Latino (NL) White	95,786	35.2%	35.0%	35.4%	
Latino/Hispanic	28,364	66.0%	65.2%	66.8%	*
NL African American	2,906	63.7%	61.4%	66.0%	*
NL American Indian/Alaska Native	1,794	61.4%	58.6%	64.2%	*
NL Asian	5,142	18.0%	17.5%	18.5%	+
NL Hawaiian/Pacific Islander	2,012	36.4%	34.8%	38.0%	
NL Multiple Race	3,766	52.2%	50.5%	53.9%	*
<b>Infant Mortality (2008-2009)</b>	<b>N: # of Births</b>	<b>Rate per 1,000</b>	<b>CI: Lower Bounds</b>	<b>CI: Upper Bounds</b>	<b>Significance: 95% Confidence Level</b>
Non-Latino (NL) White	65,345	309	4.7%	4.8%	
Latino/Hispanic	19,441	109	5.5%	5.7%	*
NL African American	1,978	20	6.2%	15.6%	*
NL American Indian/Alaska Native	1,259	12	4.9%	16.6%	*
NL Asian	3,473	9	1.2%	4.9%	
NL Hawaiian/Pacific Islander	1,341	8	2.6%	11.8%	
NL Multiple Race	2,440	10	2.0%	7.5%	
<b>Breastfeeding Initiation</b>	<b>(Unweighted) N</b>	<b>(Weighted) Percent "Yes"</b>	<b>CI: Lower Bounds</b>	<b>CI: Upper Bounds</b>	<b>Significance: 95% Confidence Level</b>
Non-Latino (NL) White	785	94.3%	92.3%	95.8%	
Latino/Hispanic	878	95.6%	94.0%	96.8%	
NL African American	338	90.4%	86.6%	93.3%	
NL American Indian/Alaska Native	275	92.8%	88.9%	95.3%	
NL Asian	381	97.6%	94.9%	98.8%	
NL Hawaiian/Pacific Islander	145	92.1%	85.4%	95.8%	
NL Multiple Race	482	94.5%	91.8%	96.3%	
<b>Postpartum Depression Symptoms</b>	<b>(Unweighted) N</b>	<b>(Weighted) Percent "Yes"</b>	<b>CI: Lower Bounds</b>	<b>CI: Upper Bounds</b>	<b>Significance: 95% Confidence Level</b>
Non-Latino (NL) White	801	23.0%	20.2%	26.1%	
Latino/Hispanic	871	20.1%	17.5%	23.0%	
NL African American	335	22.2%	17.9%	27.1%	
NL American Indian/Alaska Native	280	27.0%	22.1%	32.6%	
NL Asian	380	17.6%	14.1%	21.9%	
NL Hawaiian/Pacific Islander	146	14.3%	9.3%	21.3%	
NL Multiple Race	494	25.1%	21.3%	29.3%	

The data listed for Breastfeeding Initiation and Postpartum Depression Symptoms is from the Pregnancy Risk Assessment Monitoring Survey (PRAMS). PRAMS is a surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy.

When reporting PRAMS data, weighted percentages of responses are used, rather than rates. The "N's" listed above are the actual numbers of survey responses, not weighted.

\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

Source: Oregon Vital Records 2008-2010; PRAMS 2009-2010 Births

**APPENDIX II: Data for Table 2 (page 3): Disparities in Birth Outcomes  
Among those with Medicaid paid births and those with births not paid by Medicaid**

Confidence Interval (CI): If the survey were repeated 100 times, the percentage who answered "YES" would be expected to fall within the confidence interval range in 95 of the 100 surveys.

Mcd=Medicaid Birth; NM=Non-Medicaid Birth

Premature Birth	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM
Non-Latino (NL) White	22,370	42,632	8.1%	7.6%	8.0%	7.5%	8.2%	7.7%		
Latino/Hispanic	12,844	6,694	7.0%	8.7%	6.9%	8.5%	7.1%	8.9%	+	*
NL African American	1,242	723	11.6%	10.2%	11.0%	8.0%	12.3%	12.8%	*	*
NL American Indian/Alaska Native	742	509	9.6%	10.2%	7.5%	7.6%	12.1%	13.4%		
NL Asian	590	2,867	8.8%	7.2%	6.6%	6.9%	11.5%	7.5%		
NL Hawaiian/Pacific Islander	462	870	8.9%	7.9%	6.4%	6.2%	12.0%	10.0%		
NL Multiple Race	1,099	1,094	10.0%	8.6%	9.4%	8.1%	10.6%	9.1%	*	*

Low Birthweight	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM
Non-Latino (NL) White	22,381	42,667	6.5%	5.7%	6.4%	5.7%	6.6%	5.8%		
Latino/Hispanic	12,850	6,703	5.6%	6.4%	5.5%	6.3%	5.7%	6.6%	+	*
NL African American	1,242	722	12.0%	9.7%	11.3%	7.6%	12.7%	12.3%	*	*
NL American Indian/Alaska Native	743	508	6.7%	7.7%	5.0%	5.5%	8.8%	10.5%		
NL Asian	590	2,870	8.1%	7.3%	6.0%	7.0%	10.7%	7.6%		*
NL Hawaiian/Pacific Islander	462	870	6.7%	7.4%	4.6%	5.7%	9.5%	9.5%		
NL Multiple Race	1,100	1,095	7.9%	7.7%	6.4%	6.1%	9.7%	9.5%		*

Cesarean Delivery	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM
Non-Latino (NL) White	22,382	42,663	27.3%	29.8%	27.0%	29.5%	27.7%	30.1%		
Latino/Hispanic	12,849	6,702	26.7%	30.0%	26.2%	29.3%	27.2%	30.7%		
NL African American	1,242	723	35.7%	35.1%	33.7%	32.5%	37.7%	37.7%	*	*
NL American Indian/Alaska Native	743	509	27.7%	32.0%	25.7%	29.2%	29.7%	34.8%		
NL Asian	590	2,870	30.3%	34.1%	27.9%	32.9%	32.7%	35.4%	*	*
NL Hawaiian/Pacific Islander	462	870	36.1%	33.8%	32.8%	31.6%	39.4%	36.1%	*	*
NL Multiple Race	1,100	1,095	30.2%	30.0%	28.4%	28.2%	32.0%	31.8%	*	

\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

Source: Oregon Vital Records 2008-2009; PRAMS 2009-2010 Births

**APPENDIX II (continued): Data for Table 2 (page 3): Disparities in Birth Outcomes Among those with Medicaid paid births and those with births not paid by Medicaid**

Confidence Interval (CI): If the survey were repeated 100 times, the percentage who answered “YES” would be expected to fall within the confidence interval range in 95 of the 100 surveys.

*MCD=Medicaid Birth; NM-Non-Medicaid Birth*

Apgar Score < 8	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM
Non-Latino (NL) White	22,372	42,513	7.9%	6.4%	7.8%	6.3%	8.0%	6.5%		
Latino/Hispanic	12,842	6,354	4.8%	4.8%	4.7%	4.7%	4.9%	4.9%	+	+
NL African American	1,242	721	6.3%	7.9%	5.0%	6.0%	7.9%	10.2%		
NL American Indian/Alaska Native	742	505	6.7%	7.3%	5.0%	5.1%	8.8%	10.1%		
NL Asian	590	2,861	4.4%	4.1%	2.9%	4.0%	6.5%	4.3%	+	+
NL Hawaiian/Pacific Islander	462	869	5.0%	4.4%	3.2%	3.1%	7.5%	6.0%	+	+
NL Multiple Race	1098	1,082	7.5%	6.3%	6.0%	4.9%	9.3%	8.0%		

Breastfeeding Initiation	(Unweighted) N		(Weighted) Percent “Yes”		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM
Non-Latino (NL) White	277	504	90.0%	96.7%	85.7%	94.6%	93.1%	98.0%		
Latino/Hispanic	562	308	95.0%	96.5%	92.7%	93.7%	96.6%	98.1%		
NL African American	209	129	88.2%	94.4%	83.0%	88.1%	92.0%	97.5%		
NL American Indian/Alaska Native	174	101	92.2%	93.8%	87.0%	87.5%	95.5%	97.0%		
NL Asian	77	303	96.5%	97.8%	87.1%	94.8	99.1%	99.1%		
NL Hawaiian/Pacific Islander	55	90	91.5%	92.4%	79.2%	83.1	96.8%	96.8%		
NL Multiple Race	248	232	91.4%	98.3%	86.7%	96.1	94.6%	99.2%		

Postpartum Depression Symptoms	(Unweighted) N		(Weighted) Percent “Yes”		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM	Mcd	NM
Non-Latino (NL) White	282	515	21.4%	23.9%	16.9%	20.3%	26.7%	27.8%		
Latino/Hispanic	563	301	20.1%	20.4%	16.9%	16.1%	23.7%	25.6%		
NL African American	204	131	23.3%	20.2%	17.9%	14.0%	29.7%	28.4%		
NL American Indian/Alaska Native	178	102	27.5%	26.0%	21.4%	18.4%	34.7%	35.4%		
NL Asian	77	302	14.6%	18.5%	8.3%	14.5%	24.6%	23.4%		
NL Hawaiian/Pacific Islander	56	90	13.1%	15.1%	6.2%	8.9%	25.4%	24.4%		
NL Multiple Race	256	235	27.9%	22.4%	22.6%	17.1%	33.9%	28.7%		

The data listed for Breastfeeding Initiation and Postpartum Depression Symptoms is from the Pregnancy Risk Assessment Monitoring Survey (PRAMS). PRAMS is a surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy.

When reporting PRAMS data, weighted percentages of responses are used, rather than rates. The “N’s” listed above are the actual numbers of survey responses, not weighted.

\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

Source: Oregon Vital Records 2008-2009; PRAMS 2009-2010 Births

**APPENDIX III: Data for Table 3 (page 4): Disparities in Birth Outcomes  
Among those who live in urban areas and those who live in rural areas**

Confidence Interval (CI): If the survey were repeated 100 times, the percentage who answered "YES" would be expected to fall within the confidence interval range in 95 of the 100 surveys.

Premature Birth	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Non-Latino (NL) White	69,889	26,272	7.6%	8.1%	7.5%	8.0%	7.7%	8.2%		
Latino/Hispanic	22,891	5,970	7.6%	7.9%	7.5%	7.7%	7.7%	8.1%		
NL African American	2,832	88	10.9%	9.1%	10.5%	3.9%	11.3%	17.9%	*	
NL American Indian/Alaska Native	899	902	9.1%	10.4%	7.2%	8.4%	11.3%	12.7%		*
NL Asian	4,856	306	7.8%	10.8%	7.6%	7.4%	8.0%	15.2%		
NL Hawaiian/Pacific Islander	1,891	135	8.7%	6.7%	8.3%	3.1%	9.1%	12.7%	*	
NL Multiple Race	2,613	886	8.7%	9.6%	8.4%	7.6%	9.0%	12.0%	*	

Low Birthweight	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Non-Latino (NL) White	69,938	26,285	5.8%	6.4%	5.8%	6.3%	5.8%	6.5%		
Latino/Hispanic	22,907	5,974	6.1%	5.8%	6.0%	5.7%	6.2%	5.9%	*	+
NL African American	2,832	88	11.1%	9.1%	10.7%	3.9%	11.5%	17.9%	*	
NL American Indian/Alaska Native	899	902	7.6%	6.7%	5.9%	5.1%	9.6%	8.6%	*	
NL Asian	4,859	306	7.7%	8.2%	7.5%	5.3%	7.9%	12.1%	*	
NL Hawaiian/Pacific Islander	1,891	135	7.8%	7.4%	7.4%	3.5%	8.2%	13.6%	*	
NL Multiple Race	2,615	805	7.4%	7.7%	7.1%	5.9%	7.7%	9.9%	*	

Cesarean Delivery	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Non-Latino (NL) White	69,937	26,280	29.5%	27.5%	29.3%	27.2%	29.7%	27.8%		
Latino/Hispanic	22,907	5,974	27.4%	29.7%	27.0%	28.9%	27.8%	30.5%	+	*
NL African American	2,832	88	34.3%	37.5%	33.0%	25.8%	35.6%	52.7%	*	
NL American Indian/Alaska Native	899	903	29.0%	30.9%	27.1%	28.9%	31.0%	32.9%		*
NL Asian	4,859	306	33.8%	34.3%	32.8%	30.5%	34.8%	38.1%	*	*
NL Hawaiian/Pacific Islander	1,891	135	36.3%	25.2%	34.7%	17.5%	37.9%	35.2%	*	
NL Multiple Race	2,615	805	32.5%	27.8%	31.2%	25.9%	33.7%	29.7%	*	

Apgar Score < 8	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Non-Latino (NL) White	69,842	26,118	6.2%	7.9%	6.2%	7.8%	6.2%	8.0%		
Latino/Hispanic	22,884	5,942	4.3%	5.6%	4.2%	5.5%	4.4%	5.7%	+	+
NL African American	2,827	88	6.8%	9.1%	6.5%	3.9%	7.1%	17.9%	*	
NL American Indian/Alaska Native	899	892	6.3%	7.5%	4.8%	5.8%	8.2%	9.5%		
NL Asian	4,853	300	3.9%	10.3%	3.8%	7.0%	4.0%	14.6%	+	
NL Hawaiian/Pacific Islander	1,890	135	4.7%	5.9%	3.8%	2.5%	5.8%	11.6%	+	
NL Multiple Race	2,610	790	6.1%	7.7%	5.9%	5.9%	6.3%	9.9%		

**APPENDIX III (continued): Data for Table 3 (page 4): Disparities in Birth Outcomes Among those who live in urban areas and those who live in rural areas**

Confidence Interval (CI): If the survey were repeated 100 times, the percentage who answered “YES” would be expected to fall within the confidence interval range in 95 of the 100 surveys.

Medicaid Paid Births	N: # of Births		Percent of Births		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Non-Latino (NL) White	69,619	26,166	31.4%	45.4%	31.2%	44.8%	31.6%	46.0%		
Latino/Hispanic	22,782	5,943	66.8%	63.0%	65.9%	61.4%	67.7%	64.6%	*	*
NL African American	2,819	87	63.6%	65.5%	61.3%	49.6%	65.9%	84.9%	*	*
NL American Indian/Alaska Native	893	901	57.3%	65.4%	53.5%	61.1%	61.1%	69.7%	*	*
NL Asian	4,836	306	17.7%	23.5%	17.2%	20.9%	18.2%	26.1%	+	+
NL Hawaiian/Pacific Islander	1,877	135	35.6%	47.4%	34.0%	37.0%	37.2%	59.8%	*	
NL Multiple Race	2,602	803	48.9%	57.0%	47.0%	53.0%	50.8%	60.8%	*	*

Breastfeeding Initiation	N		Percent “Yes”		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Non-Latino (NL) White	581	204	94.6%	93.6%	92.3%	88.9%	96.2%	96.3%		
Latino/Hispanic	688	190	96.2%	93.4%	94.4%	88.5%	97.4%	96.3%		
NL African American	327	NP	90.4%	NP	86.5%	NP	93.3%	NP		
NL American Indian/Alaska Native	139	136	93.2%	92.3%	87.3%	86.5%	96.5%	95.8%		
NL Asian	358	23	97.8%	93.6%	95.2%	66.1%	99.0%	99.1%		
NL Hawaiian/Pacific Islander	137	NP	92.6%	NP	85.9%	NP	96.3%	NP		
NL Multiple Race	364	118	95.2%	92.1%	92.1%	85.4%	97.1%	95.9%		

Postpartum Depression Symptoms	N		Percent “Yes”		CI: Lower Bounds		CI: Upper Bounds		Significance: 95% Confidence Level	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Non-Latino (NL) White	592	209	23.0%	23.0%	19.7%	17.8%	26.7%	29.2%		
Latino/Hispanic	680	191	20.0%	20.9%	17.0%	15.4%	23.2%	27.5%		
NL African American	324	NP	22.3%	NP	18.0%	NP	27.4%	NP		
NL American Indian/Alaska Native	141	139	29.6%	24.5%	22.5%	18.0%	37.9%	32.4%		
NL Asian	357	23	17.3%	23.5%	13.6%	10.1%	21.6%	45.7%		
NL Hawaiian/Pacific Islander	139	NP	15.0%	NP	9.8%	NP	22.3%	NP		
NL Multiple Race	371	123	25.4%	24.1%	21.0%	17.0%	30.3%	33.1%		

NP= Not provided due to small numbers

The data listed for Breastfeeding Initiation and Postpartum Depression Symptoms is from the Pregnancy Risk Assessment Monitoring Survey (PRAMS). PRAMS is a surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy.

When reporting PRAMS data, weighted percentages of responses are used, rather than rates. The “N’s” listed above are the actual numbers of survey responses, not weighted.

\* Indicates statistically significant outcomes that are worse than the reference group (Non-Latino Whites)

+ Indicates statistically significant outcomes that are better than the reference group (Non-Latino Whites)

Source: Oregon Vital Records 2008-2010; PRAMS 2009-2010 Births

Definition: Rural is less than 60 persons per square mile according to 1990 census, according to mother’s place of residence at time of birth.

## APPENDIX IV:

### Understanding the Multiple Race Variable

#### A mother is counted as Latina if she...

1. Checked at least one of the Latino/Hispanic checkboxes when asked about ethnicity.

#### A mother is counted as “multiple race” if she...

1. Checked 2 or more races (other than the combination of one race and “other” race)  
AND is not Latina/Hispanic

If the mother checked only one race, or one race and “other” race (and is not Latina/Hispanic), she is counted under the one specific race that she checked off.

Non-Latino (NL): This term is used throughout the charts and graphs in this publication to describe ethnic/racial groups who have been separated from the Latino population based on the criteria above.

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### Reference for Multiple Race Information

#### Ethnicity/Race Categories for Birth Certificate File:

Hispanic or Latino if at least one of these is checked off (check all that apply):

- Hispanic Mexican
- Hispanic Puerto Rican
- Hispanic Cuban
- Hispanic Other

Race: (check all that apply)

- White
- Black
- American Indian/Alaskan Native
- Asian:
  - Asian Indian
  - Chinese
  - Filipino
  - Japanese
  - Korean
  - Vietnamese
  - Other Asian
- Hawaiian/Pacific Islander:
  - Hawaiian
  - Guamanian or Chamorro
  - Samoan
  - Other Pacific islander
- Other:
  - (fill-in)

#### In Asian or Pacific Islander, checking 2 or more does not make the mother ‘multiple race’.

Examples: Chinese and Filipino = Asian  
Filipino and Samoan = multiple race  
White and Samoan = Multiple race  
Chinese and Filipino and Korean = Asian  
White and Other = White

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## Continuous support for women during childbirth (Review)

Hodnett ED, Gates S, Hofmeyr GJ, Sakala C, Weston J



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Continuous support for women during childbirth (Review)  
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[Intervention Review]

## Continuous support for women during childbirth

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### ABSTRACT

#### Background

Historically, women have been attended and supported by other women during labour. However in hospitals worldwide, continuous support during labour has become the exception rather than the routine.

#### Objectives

Primary: to assess the effects of continuous, one-to-one intrapartum support compared with usual care. Secondary: to determine whether the effects of continuous support are influenced by: (1) routine practices and policies; (2) the provider's relationship to the hospital and to the woman; and (3) timing of onset.

#### Search strategy

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (31 December 2010).

#### Selection criteria

All published and unpublished randomized controlled trials comparing continuous support during labour with usual care.

#### Data collection and analysis

We used standard methods of the Cochrane Collaboration Pregnancy and Childbirth Group. Two authors independently evaluated methodological quality and extracted the data. We sought additional information from the trial authors. We used random-effects analyses for comparisons in which high heterogeneity was present, and we reported results using the risk ratio for categorical data and mean difference for continuous data.

#### Main results

Twenty-one trials involving 15061 women met inclusion criteria and provided usable outcome data. Results are of random-effects analyses, unless otherwise noted. Women allocated to continuous support were more likely to have a spontaneous vaginal birth (RR 1.08, 95% CI 1.04 to 1.12) and less likely to have intrapartum analgesia (RR 0.90, 95% CI 0.84 to 0.97) or to report dissatisfaction (RR 0.69, 95% CI 0.59 to 0.79). In addition their labours were shorter (mean difference -0.58 hours, 95% CI -0.86 to -0.30), they were less likely to have a caesarean (RR 0.79, 95% CI 0.67 to 0.92) or instrumental vaginal birth (fixed-effect, RR 0.90, 95% CI

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Continuous support for women during childbirth (Review)

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0.84 to 0.96), regional analgesia (RR 0.93, 95% CI 0.88 to 0.99), or a baby with a low 5-minute Apgar score (fixed-effect, RR 0.70, 95% CI 0.50 to 0.96). There was no apparent impact on other intrapartum interventions, maternal or neonatal complications, or on breastfeeding. Subgroup analyses suggested that continuous support was most effective when provided by a woman who was neither part of the hospital staff nor the woman's social network, and in settings in which epidural analgesia was not routinely available. No conclusions could be drawn about the timing of onset of continuous support.

### Authors' conclusions

Continuous support during labour has clinically meaningful benefits for women and infants and no known harm. All women should have support throughout labour and birth.

## PLAIN LANGUAGE SUMMARY

### Continuous support for women during childbirth

Continuous support in labour increased the chance of a spontaneous vaginal birth, had no harm, and women were more satisfied.

Historically women have been attended and supported by other women during labour and birth. However in many countries, as more women are giving birth in hospital rather than at home, continuous support during labour has become the exception rather than the norm. This may contribute to the dehumanization of women's childbirth experiences. Modern obstetric care frequently subjects women to institutional routines, which may have adverse effects on the progress of labour. Supportive care during labour may involve emotional support, comfort measures, information and advocacy. These may enhance physiologic labour processes as well as women's feelings of control and competence, and thus reduce the need for obstetric intervention. The review of studies included 21 trials, from 15 countries, involving more than 15,000 women in a wide range of settings and circumstances. The continuous support was provided either by hospital staff (such as nurses or midwives), women who were not hospital employees and had no personal relationship to the labouring woman (such as doulas or women who were provided with a modest amount of guidance), or by companions of the woman's choice from her social network (such as her husband, partner, mother, or friend). Women who received continuous labour support were more likely to give birth 'spontaneously', i.e. give birth with neither caesarean nor vacuum nor forceps. In addition, women were less likely to use pain medications, were more likely to be satisfied, and had slightly shorter labours. Their babies were less likely to have low 5-minute Apgar Scores. No adverse effects were identified. We conclude that all women should have continuous support during labour. Continuous support from a person who is present solely to provide support, is not a member of the woman's social network, is experienced in providing labour support, and has at least a modest amount of training, appears to be most beneficial. Support from a chosen family member or friend appears to increase women's satisfaction with their childbearing experience.

## BACKGROUND

The first version of this Cochrane Review was published in 1995 (Hodnett 2003) when the first systematic reviews in the Cochrane Collaboration Pregnancy and Childbirth Group Module were converted to the Cochrane Review format. Thus a formal Cochrane Protocol was not initially published. Subsequently the Review author, Ellen Hodnett, completed a trial of labour support (Hodnett 2002) with a sample size larger than the entire sample in the prior version of the original Review. As a protection against bias, she sought co-authors who were blind to the results of the new trial and who had special expertise that would enhance the quality of the Review. Discussions among the authors led to decisions to modify the background and methods. The authors de-

cidated that the best approach would be to write a new Protocol for the Review. The new Protocol was submitted through the peer review process of the Cochrane Pregnancy and Childbirth Group and has subsequently evolved into a Review that has been updated.

Historically and cross-culturally, women have been attended and supported by other women during labour and birth. However, since the middle of the 20th century, in many countries as the majority of women gave birth in hospital rather than at home, continuous support during labour has become the exception rather than the routine. Concerns about dehumanization of women's birth experiences (in high-, middle-, and low income countries) have led to calls for a return to continuous, one-to-one support by women

## APPENDIX F: Promising Models for Utilizing Doulas

Name of Program	Location	Source of Funding/ Cost of Program	Program Components	Type of Certification	Community Served	Outcomes Research/Success Metrics
<p><b>Chicago Health Connect One Doula Project</b></p> <p>Source: www.healthconnectone.org</p>	Chicago, Illinois	<p>Mix of private and public funding (Illinois Dept of Human Services; Illinois Board of Edu; Chicago Public Schools; US Dept of HHS; Harris Family Foundation and Oprah Winfrey Foundation)</p>	<p>Doula program embedded in early childhood home visiting programs (Parents Too Soon, Healthy Families, and Early Head Start).</p> <p>Outreach begins during the seventh month of pregnancy; continues through prenatal period, labor, and delivery and through approximately six weeks postpartum.</p> <p>Families participate in a home visiting program, which continues for three more years.</p>	<p>Doula is an employee of a community-based program.</p> <p>Receives training as a home visitor.</p> <p>Four-month training process includes a three-day DONA Doula Training, mentored births, 80 hours of direct contact. Ongoing bi-monthly training during first year of service.</p>	Pregnant teens - Intervention begins during the seventh month of pregnancy.	<p>N=295</p> <p>80% of Doula participants initiated breastfeeding at birth.</p> <p>22% of program participants were still breastfeeding at six months after birth.</p> <p>Only 8.1% of the project participants had cesarean section deliveries</p>
<p><b>Farmworker Doula Program</b> (Migrant Health Promotion)</p> <p>Source: www.migranthealth.org/index.php?option=com_content&amp;view=article&amp;id=49&amp;Itemid=48</p>	Weslaco, Texas	<p>Numerous funding sources listed for Migrant Health Promotion Program (see website)</p>	<p>Experienced <i>promotoras</i> are trained as Doulas.</p> <ul style="list-style-type: none"> <li>• Assist with prenatal and postpartum care</li> <li>• Assist with translation at medical visits and explain cultural difference to health care providers.</li> </ul>	Health Connect One Community-based Doula Model	Migrant workers	<p>In 2007-2008, three Doulas provided prenatal education classes to 483 people and actual doula services to 163 women in the lower Rio Grande Valley, Texas.</p> <ul style="list-style-type: none"> <li>• Their work contributed to a dramatic decrease in Caesarean section rates among first-time mothers – less than 8% of first-time mothers assisted by Doulas gave birth by Caesarean section, compared to 44.5% of Hispanic women in Cameron County overall<sup>i</sup></li> </ul> <p>In 2009, the Doulas' work resulted in the following:</p> <ul style="list-style-type: none"> <li>• 100% of the children in the program obtained a medical home</li> </ul>

						<ul style="list-style-type: none"> <li>• 100% of mothers in the program have an ongoing source of primary and preventative care</li> <li>• 0% low or very low birth weight babies were born to program participants and</li> <li>• Over 90% of program participants breastfed their babies.</li> </ul>
<p><b>The Haven’s Doula Program</b></p> <p>Source:  <a href="http://www.havenfriends.org/about/program---overview/doula/">www.havenfriends.org/about/program---overview/doula/</a></p>	Colorado	The Haven receives funding for some of the women’s treatment through Community Corrections, Social Services, TANF, Signal, and through Medicaid for the mother’s treatment, but there is no funding source dedicated to care for the needs of infants.	<p>The Doula Program pairs pregnant women from The Haven Mother’s House with successful Haven graduates who have given birth and are in recovery. The Haven is a substance abuse treatment service for women, mothers and their infants.</p> <ul style="list-style-type: none"> <li>• Doula service begin at matching and continue until child is 18 months old</li> <li>• Accompany participant to prenatal visits</li> <li>• Assist in developing a birth plan</li> <li>• Provide supports through labor, delivery and initial postpartum hours at hospital</li> <li>• Ongoing support and advocacy assistance during hospital stay</li> <li>• Provide support and ideas for appropriate developmental play</li> </ul>	Train in the Chicago Health Connection Community Doula Model; The Harris Doula Child Development Curriculum (Ages 0-3).	Women recovering from substance abuse.	Extensive research projects are underway regarding the success of the doula program and outcomes for the infant, the mother, and the doula are being collected.

			<ul style="list-style-type: none"> <li>• Assist with transportation to medical appointment</li> <li>• Links participant to outside resources</li> <li>• Provides recovery support</li> </ul>			
<p><b>International Center for Traditional Childbearing (ICTC): Full Circle Doula® Program</b></p> <p>Source: <a href="http://www.ictcmidwives.org">www.ictcmidwives.org</a></p>	<p>National training &amp; certifying organization.</p> <p>Headquartered in Oregon.</p>	<p>Mix of private grants, public donations, and fee for service (W.K Kellogg Foundation, Susan G. Komen Foundation, Women's Health Region IV, City of Portland Water Bureau, Transforming Birth, Groundswell Foundation, McKenzie River Gathering Foundation, Black United Fund of Oregon, RAMP)</p>	<p>ICTC doula integrates: Midwifery model of care, cultural inclusion, public health, infant mortality prevention, breastfeeding promotion, and capacity building. ICTC services begin first trimester and extend to three months postpartum.</p> <p>ICTC Doula program is community based.</p> <ul style="list-style-type: none"> <li>• Contact made in the first trimester. Minimum of 17 contacts per pregnancy.</li> <li>• Provide childbirth education,</li> <li>• Empowerment, self-esteem, and parenting</li> <li>• Special efforts to include the father/partner and extended family</li> <li>• Accompany to prenatal appointment, home visits</li> <li>• Advocacy, referral and resources</li> <li>• Support during labor and birth</li> <li>• Postpartum care in hospital/home/birth</li> </ul>	<p>ICTC Doula- private entrepreneur program:</p> <ul style="list-style-type: none"> <li>• 27.5 hours of intensive training in: labor and postpartum doulas services, newborn care, doing blood pressures, infant mortality prevention, breastfeeding support, entrepreneurial skills.</li> <li>• 24-months to certification after the training</li> <li>• Certification Requirements: five births, five</li> </ul>	<p>Pregnant women, teens, and partners, all trimesters, with particular attention to communities facing poor birth outcomes.</p> <p>Specializes in training and serving ethnically diverse populations.</p>	<p>60% of clients experienced birth satisfaction with an ICTC doula.</p> <p>40% attend childbirth preparation classes.</p> <p>50% participated in creating a birth plan.</p> <p>70% learned the social determinants for infant mortality.</p> <p>90% Learned about lead poisoning prevention.</p> <p>Training accomplishments: 2005-2010: ICTC trained 400 doulas national wide; 85% being women of color.</p>

			<p>center</p> <ul style="list-style-type: none"> <li>• Postpartum support: meals, cleaning, newborn care, breastfeeding support, mother care, transportation</li> <li>• Connect mother to community resources</li> <li>• Plan Blessing Ways and Naming Ceremonies with parent/s.</li> </ul>	<p>postpartum visits, two-hour breastfeeding class, four-hour childbirth preparation, CPR card, food handlers card and three book reports from the ICTC reading list.</p> <ul style="list-style-type: none"> <li>• Recertification every three-years with 24 CEU's and attendance of an ICTC conference.</li> </ul>		
<p><b>Maternal Infant Health Outreach Worker Program</b></p> <p>Source: <a href="http://www.mihow.org/overview.html">www.mihow.org/overview.html</a></p>	<p>Kentucky, Louisiana, Mississippi, Tennessee, and West Virginia.</p>	<p>Mix of private and public funding (Association for Community Based Education, Annie E. Casey Foundation, Corporation for National and Community Service, Ford Foundation, The</p>	<p>Partnership between Community-based organizations in five states and Vanderbilt University Center for Health Services</p> <p>Program components:</p> <ul style="list-style-type: none"> <li>• Home Visits</li> <li>• Case management and advocacy</li> <li>• Parent education:</li> </ul>	<p>Health Connect One Community-based Doula Model</p>	<p>Families in rural and inner city areas throughout the mid-South, including Appalachia and the deep South.</p>	<p>In 2004, MIHOW Mississippi program mothers to similar mothers and found that :</p> <p>90% began prenatal care in the first trimester, compared to 75% of pregnant women in Mississippi</p> <p>81% received adequate prenatal care, compared to 69% of Mississippi women</p> <p>7.7% gave birth to a low birth weight infant, compared</p>

		<p>Gerber Foundation, Charles and Mary Grant Foundation, Hasbro Children's Foundation, William Randolph Hearst Foundation, Heron Foundation, Robert Wood Johnson Foundation, W.K. Kellogg Foundation, David and Lucile Packard Foundation, Phoenix Health Care, Inc., Pritzker Early Childhood Foundation, Shulman Foundation, Bernard van Leer Foundation, Vanderbilt University Whitley County, Kentucky Department of Health)</p>	<ul style="list-style-type: none"> <li>• Role modeling for positive parent-child interaction</li> <li>• Health and developmental screening</li> <li>• Information and referral</li> <li>• Peer support groups</li> </ul>			<p>to 14.3% statewide</p> <p>95.3% of participants eligible for WIC enrolled, compared to 75% statewide</p> <p>Almost 90% of MIHOW infants were on schedule with recommended well-child visits at six and nine months</p> <p>98.5% secured some form of health insurance, compared to the national rate of 81.6%</p> <p>MIHOW mothers scored significantly higher on nationally recognized scales for mother-infant interaction, affection, and stimulation than comparison mothers, leading to . . .</p> <ul style="list-style-type: none"> <li>• greater sense of purpose</li> <li>• greater sense of hope</li> <li>• greater sense of control over their lives</li> <li>• deeper connection with their child</li> </ul> <p>MIHOW promotes sound health practices and preventive care during pregnancy, resulting in . . .</p> <ul style="list-style-type: none"> <li>• earlier prenatal care</li> <li>• more prenatal care visits</li> <li>• more needed vitamin and iron supplements</li> <li>• less smoking and caffeine consumption</li> <li>• better preparation for labor and delivery</li> </ul> <p>Children of MIHOW participants show developmental advantages in . . .</p> <ul style="list-style-type: none"> <li>• language usage</li> <li>• social skills</li> </ul> <p>MIHOW mothers are more likely to breastfeed, which can have far-reaching health benefits by . . .</p>
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						<ul style="list-style-type: none"> <li>• promoting resistance to the most common diseases in infants</li> <li>• preventing lymphomas and diabetes in children</li> <li>• decreasing mothers' risk for breast and ovarian cancer</li> </ul> <p>Contact with outreach workers during the first three years of parenting leads to . . .</p> <ul style="list-style-type: none"> <li>• non-violent positive discipline</li> <li>• more timely immunizations for their children</li> </ul> <p>MIHOW mothers had fewer children than other mothers with similar backgrounds (controls). Case management and mentoring by peers helps to . . .</p> <ul style="list-style-type: none"> <li>• prevent teen pregnancies</li> <li>• delay second pregnancies</li> </ul> <p>MIHOW participants are more likely to get help for themselves, increasing access to health and social services in isolated communities. Such preventive measures save money by . . .</p> <ul style="list-style-type: none"> <li>• spotting potential problems early</li> <li>• facilitating early intervention</li> <li>• preventing more expensive, acute problems</li> </ul>
<p><b>New Beginning Doula Program</b></p> <p>(Collaboration program involving University of Pittsburgh Medical Center Health Plan and community-based organization, The Birth</p>	Pittsburgh, PA	Health Plan paid Doula Agency a modified FFS: flat sum to try to engage pregnant woman, agency was paid another flat amount if women enrolled in Doula program.,	The UPMC Health Plan Doula Program is embedded in their maternal case management program in 2006.	Unknown	High risk women residing in a designated area of Pittsburgh. Initial program targeted women in the Braddock area. Program expanded to include	<p>Outcomes for evaluation period: Oct 1, 2008 to May 31, 2010<sup>ii iii</sup></p> <ul style="list-style-type: none"> <li>• 1171 women <u>referred</u> to a Doula <ul style="list-style-type: none"> <li>○ 490 (41.8%) accepted enrollment</li> </ul> </li> <li>• 996 babies were born to women <u>referred</u> to the Doula program <ul style="list-style-type: none"> <li>○ 439 babies born to women in program</li> </ul> </li> <li>• Rate of postpartum visits <ul style="list-style-type: none"> <li>○ 43.36% for women enrolled in program</li> </ul> </li> </ul>

<p><b>New Beginning Doula Program</b></p> <p>(Collaboration program involving University of Pittsburgh Medical Center Health Plan and community-based organization, The Birth Circle Doula Agency)</p>	<p>Pittsburgh, PA</p>	<p>Health Plan paid Doula Agency a modified FFS: flat sum to try to engage pregnant woman, agency was paid another flat amount if women enrolled in Doula program., agency was also paid for meeting benchmarks (i.e., HEDIS measures).</p> <p>UPMC listed service as an administrative expense, not a medical payment during pilot.</p>	<p>The UPMC Health Plan Doula Program is embedded in their maternal case management program in 2006.</p>	<p>Unknown</p>	<p>High risk women residing in a designated area of Pittsburgh. Initial program targeted women in the Braddock area. Program expanded to include Allegheny County.</p>	<p>Outcomes for evaluation period: Oct 1, 2008 to May 31, 2010<sup>ii iii</sup></p> <ul style="list-style-type: none"> <li>• 1171 women <u>referred</u> to a Doula <ul style="list-style-type: none"> <li>○ 490 (41.8%) accepted enrollment</li> </ul> </li> <li>• 996 babies were born to women <u>referred</u> to the Doula program <ul style="list-style-type: none"> <li>○ 439 babies born to women in program</li> </ul> </li> <li>• Rate of postpartum visits <ul style="list-style-type: none"> <li>○ 43.36% for women enrolled in program</li> <li>○ 35.77% for women who declined enrollment</li> </ul> </li> </ul>
<p><b>Turtle Women Project/Community Doula Program</b></p>	<p>American Indian Family Center (AIFC) serving American Indian and women of color in Ramsey County,</p>	<p>United Way, Minnesota Department of Health's Eliminating Racial and Ethnic Health Disparities Initiative (EHDI), Third</p>	<p>Culturally and linguistically appropriate training of women to be doulas; community outreach to identify pregnant women and their families for services (more emphasis in initial program years and not as necessary in later</p>	<p>Doulas encouraged to pursue certification with DONA, but not required (AIFC helped initiate Spanish version of</p>	<p>Ramsey County women of color and American Indian women</p>	<p>On average, the program served 120-140 women per year. The program outcomes were:</p> <ul style="list-style-type: none"> <li>• Over 92% of babies born at or above birth weight (5.8 lbs)</li> <li>• A breastfeeding rate of ~85%</li> <li>• A vaginal delivery rate of ~70%, and</li> <li>• No drug intervention for ~ 60% of women</li> </ul>

<sup>i</sup> "Texas Birth Data", n.d., <http://soupfin.tdh.state.tx.us/birth.htm>.

<sup>ii</sup> UPMC New Beginning Doula Program Birth Weight Data. Summary of UPMC for a New Beginning Doula Program March 2, 2011.

<b>Doula Enrolled Group</b>	<b>Low birth weight (&lt;2,500 grams)</b>	<b>Premature birth (&lt; 35 weeks gestation)</b>	<b>NICU admission</b>
Caucasian	1.3% (13/996)	1.0% (10/996)	2.5% (25/996)
African American	3.7% (37/996)	1.5% (15/996)	3.7% (37/996)

<b>Doula Declined Enrollment Group</b>	<b>Low birth weight (&lt;2,500 grams)</b>	<b>Premature birth (&lt; 35 weeks gestation)</b>	<b>NICU admission</b>
Caucasian	1.6% (16/996)	0.5%(5/996)	3.5% (35/996)
African American	3.3% (33/996)	1.9% (19/996)	4.0% (40/996)

<sup>iii</sup> UPMC for a New Beginning Doula Program Analysis January 7, 2011(Phase I and Phase II) is attached to this table

## **APPENDIX G: Partial List of Insurance Companies that Reimburse Doulas**

Aetna Healthcare, AltPro, Baylor Health Care System/WEB TPA, Blue Cross/Blue Shield, Blue Cross/ Blue Shield PPO, Cigna, Degussa, a German Chemical Company, Elmcare, LLC, C/O North American Medical Management, Foundation for Medical Care, Fortis Insurance, Glencare Managed Health Inc, Great-West Life & Annuity Ins. Co., HNTB (Peoria, IL), Houston New England Financial, Employee Benefits (Fort Scott, KS), Humana Employers Health, Lutheran General Physician's Organization, Maritime Life, Medical Mutual, Oschner HMO, Louisiana, Professional Benefits Administrators, Prudential Healthcare, Qualchoice, Summit Management Services, Inc. Travelers, United HealthCare of Georgia (San Antonio, TX), United Health POS Wausau Benefits, Inc.

## APPENDIX H: Cost Benefit

### **COST BENEFIT ANALYSIS:**

A cost benefit analytic model was designed comparing costs and neonatal outcomes for women receiving doula support during active labor and delivery to women undergoing routine obstetrical care. The probability and cost of uncomplicated vaginal delivery with and without analgesia, operative vaginal delivery, cesarean delivery, and Neonatal Intensive Care Unit (NICU) admissions based upon APGAR scores were incorporated into the model as well as outcomes related to mode of delivery and neonatal morbidity. Publicly funded doula care resulted in cost savings to the payer when doula costs were below \$159.73 per delivery. Above this amount a cost benefit is not realized, however, per 47,000 live births, (the number of births annually in Oregon), providing doula care reduces NICU admissions by 51, cesarean deliveries by 940, and obstetrical vaginal deliveries by 470, and increases spontaneous vaginal deliveries by 1,140. There are multiple other benefits to this program that were unable to be incorporated into this model at this time such as maternal preference, breastfeeding initiation/continuation rates and repeat c-section morbidity and mortality. These should be considered in state decision making as well.

Pilliod R, Tilden E, Leslie J, Caughey A. Oregon Health and Science University, Dept. of ObGyn and School of Midwifery. 2012 for committee.

Figure 1.

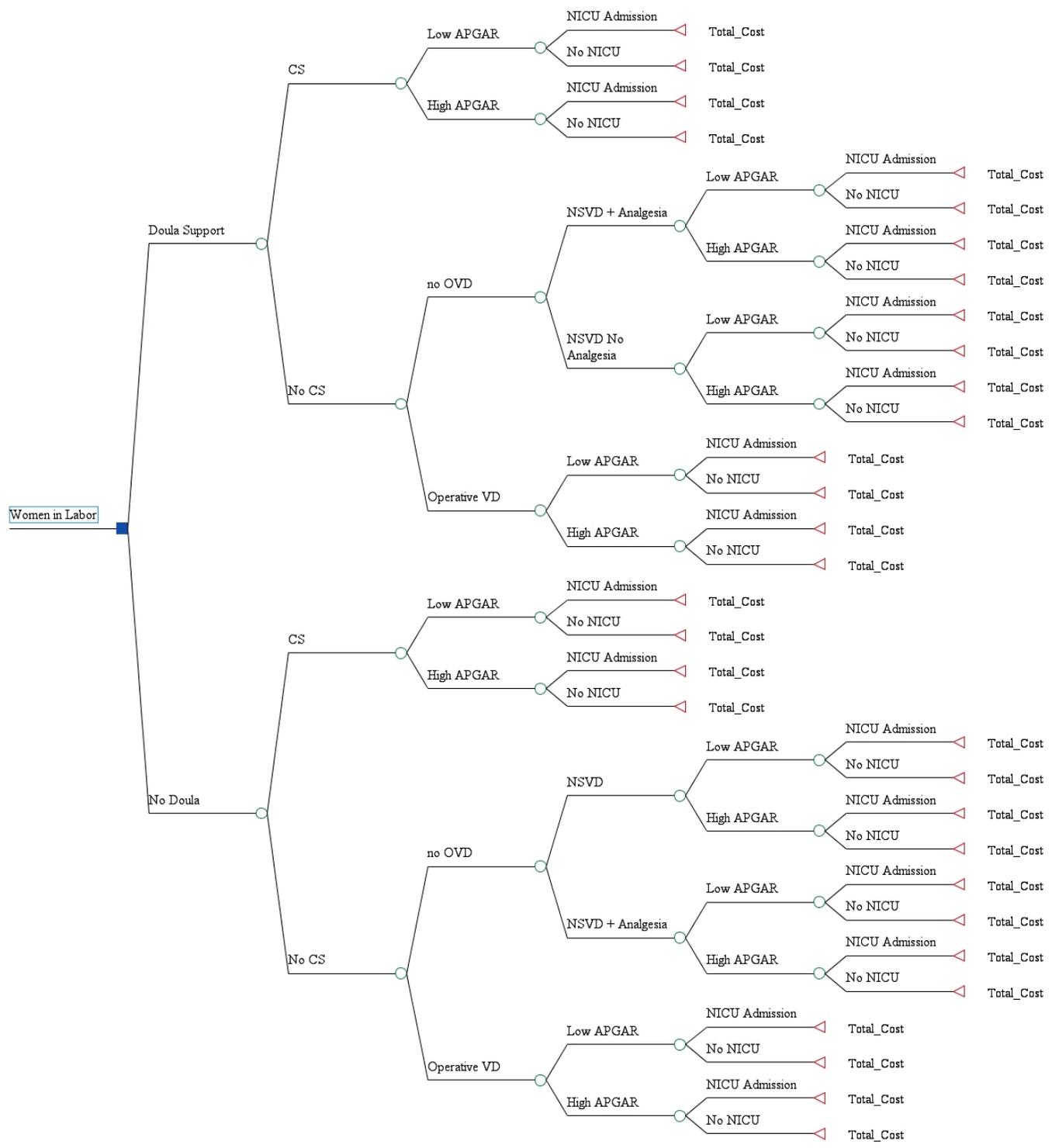


Table 1.

<b>Model Inputs</b>		
<b>Probabilities</b>		<b>Source</b>
Spontaneous Vaginal Delivery		Hodnett, 2011
<ul style="list-style-type: none"> <li>• With Doula Support</li> <li>• Without Doula Support</li> </ul>	0.708608321 0.677043355	
Cesarean Delivery		Hodnett, 2011
<ul style="list-style-type: none"> <li>• With Doula Support</li> <li>• Without Doula Support</li> </ul>	0.133715925 0.153539949	
Operative Vaginal Delivery		Hodnett, 2011
<ul style="list-style-type: none"> <li>• With Doula Support</li> <li>• Without Doula Support</li> </ul>	0.181922525 0.200312767	
Any Intrapartum Analgesia		Hodnett, 2011
<ul style="list-style-type: none"> <li>• With Doula Support</li> <li>• Without Doula Support</li> </ul>	0.277152318 0.761135585	
Low APGAR (<7)		Hodnett, 2011
<ul style="list-style-type: none"> <li>• With Doula Support</li> <li>• Without Doula Support</li> </ul>	0.009165461 0.014073115	
NICU Admission (APGAR <7)	0.2564	National Center for Health Statistics, 2008
NICU Admission (APGAR >7)	0.0287	National Center for Health Statistics, 2008
<b>Costs (adjusted to 2011 dollars)</b>		
Spontaneous Vaginal Delivery	\$4822	DMAP
Cesarean Delivery	\$7680	DMAP
Operative Vaginal Delivery	\$5708.88	DMAP, OHSU Data
Intrapartum Analgesia	216.04	Tan, 2010
NICU cost/day	\$3518.60	Adams, 2011
NICU average length of stay	6	Ross, 1999

Figure 2.

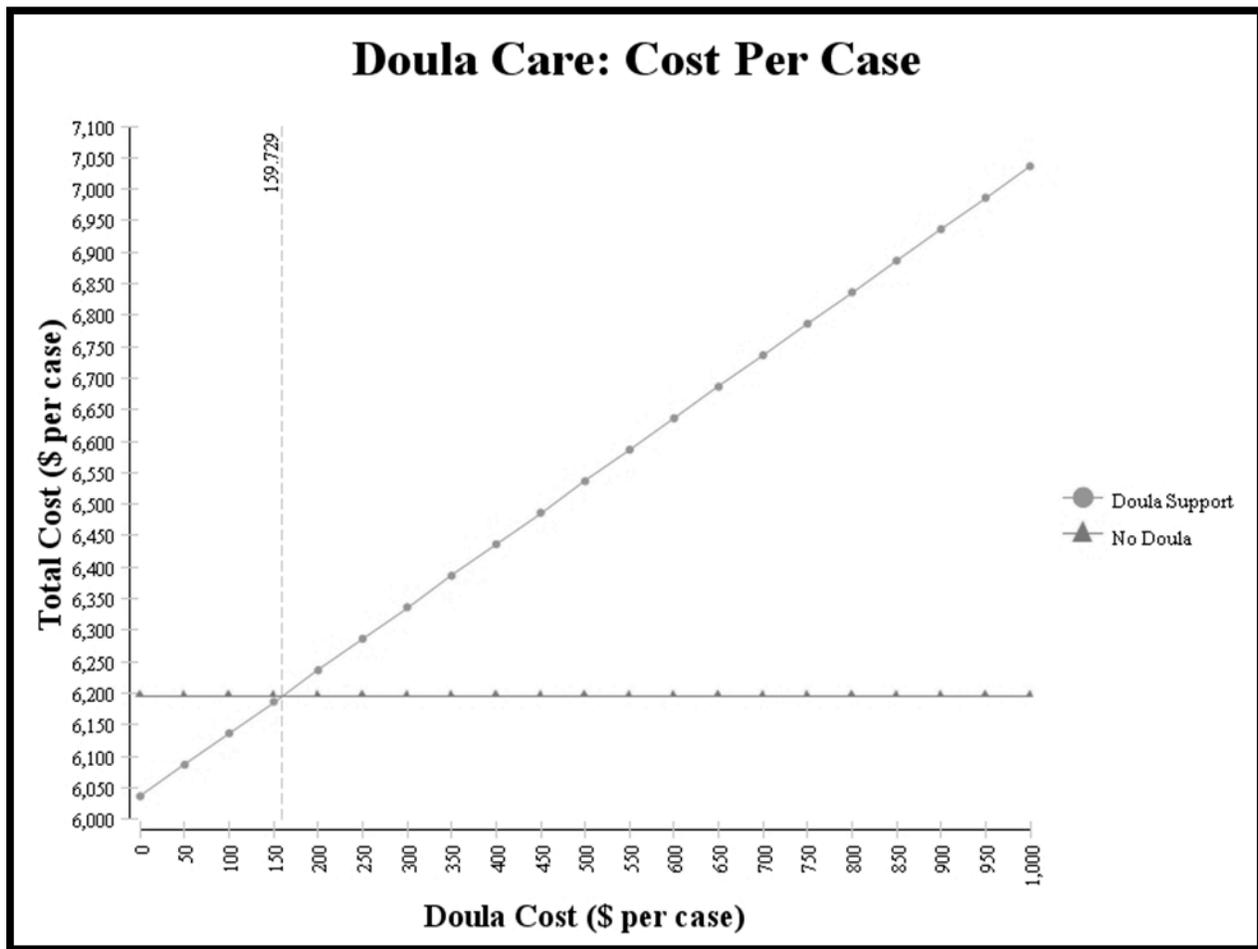


Table 2.

Obstetrical and Neonatal Outcomes (per 47,000 live births)			
	Doula	Routine Care	Difference
Spontaneous Vaginal Deliveries	33,370	31,960	1,410
Cesarean Deliveries	6,110	7,050	-940
Operative Vaginal Deliveries	7520	7990	-470
NICU Admissions	1410	1410	-51

References:

1. Adams EK, et al. Infant Delivery Costs Related to Maternal Smoking: An Update. *Nicotine & Tobacco Research*, Volume 13, Number 8 (August 2011) 627-637.
2. Hodnett ED, et al. Continuous Support for Women During Childbirth: A Review. *The Cochrane Library*. 2011
3. National Center for Health Statistics, Birth Certificate Data from 2008, accessed Jan. 2012.
4. Ross MG, et al. *Am J Obstet Gynecol* 1999;181:835-42.
5. Tan et al. *BMC Pregnancy and Childbirth* 2010, 10:3.