

# **What Lessons can be Learned from Listening to Mothers?**

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Boston University School of Public Health  
BMC Grand Rounds  
January 17, 2018







**Presentation will involve both existing data and material from unpublished studies.**

***Slides not involving unpublished data will be posted and available to download for free at:***

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**First, brief context  
on Maternal Mortality  
in the U.S.**

# Definitions (in the U.S.)

- **Maternal Mortality Ratio** – the death of a woman *while pregnant or within 42 days of termination of pregnancy*, irrespective of the duration and site of the pregnancy, from any cause *related to or aggravated by the pregnancy* or its management but not from accidental or incidental causes. Typically reported as a ratio per 100,000 births.
- **Pregnancy Related Death** – the death of a woman during pregnancy or *within one year* of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.
- **Pregnancy Associated Death** – The death of a women while pregnant or *within one year* of termination of pregnancy, *irrespective of cause*. (*WHO calls these “pregnancy related”*)

# Trends in Maternal Mortality: 1990 to 2015

Estimates by WHO, UNICEF, UNFPA, World Bank Group  
and the United Nations Population Division

| Country and<br>territory    | MMR <sup>b</sup> | Range of MMR<br>uncertainty (UI 80%) |                   | Number of<br>maternal<br>deaths <sup>c</sup> | Lifetime<br>risk of<br>maternal<br>death: <sup>d</sup><br>1 in | % of AIDS-<br>related<br>indirect<br>maternal<br>deaths <sup>e</sup> | PM   | Range of PM<br>uncertainty (UI 80%) |                   |
|-----------------------------|------------------|--------------------------------------|-------------------|--|--|--|------|-------------------------------------|-------------------|
|                             |                  | Lower<br>estimate                    | Upper<br>estimate |  |  |  |      | Lower<br>estimate                   | Upper<br>estimate |
| United Kingdom              | 9                | 8                                    | 11                | 74   | 5 800  | —  | 0.8  | 0.6                                 | 0.9               |
| United Republic of Tanzania | 398              | 281                                  | 570               | 8 200  | 45   | 2.4  | 18.4 | 13.0                                | 26.3              |
| United States of America    | 14               | 12                                   | 16                | 550  | 3 800  | —  | 0.8  | 0.7                                 | 0.9               |
| Uruguay                     | 15               | 11                                   | 19                | 7  | 3 300  | —  | 0.9  | 0.7                                 | 1.2               |
| Uzbekistan                  | 36               | 20                                   | 65                | 240  | 1 000  | —  | 2.2  | 1.2                                 | 4.0               |

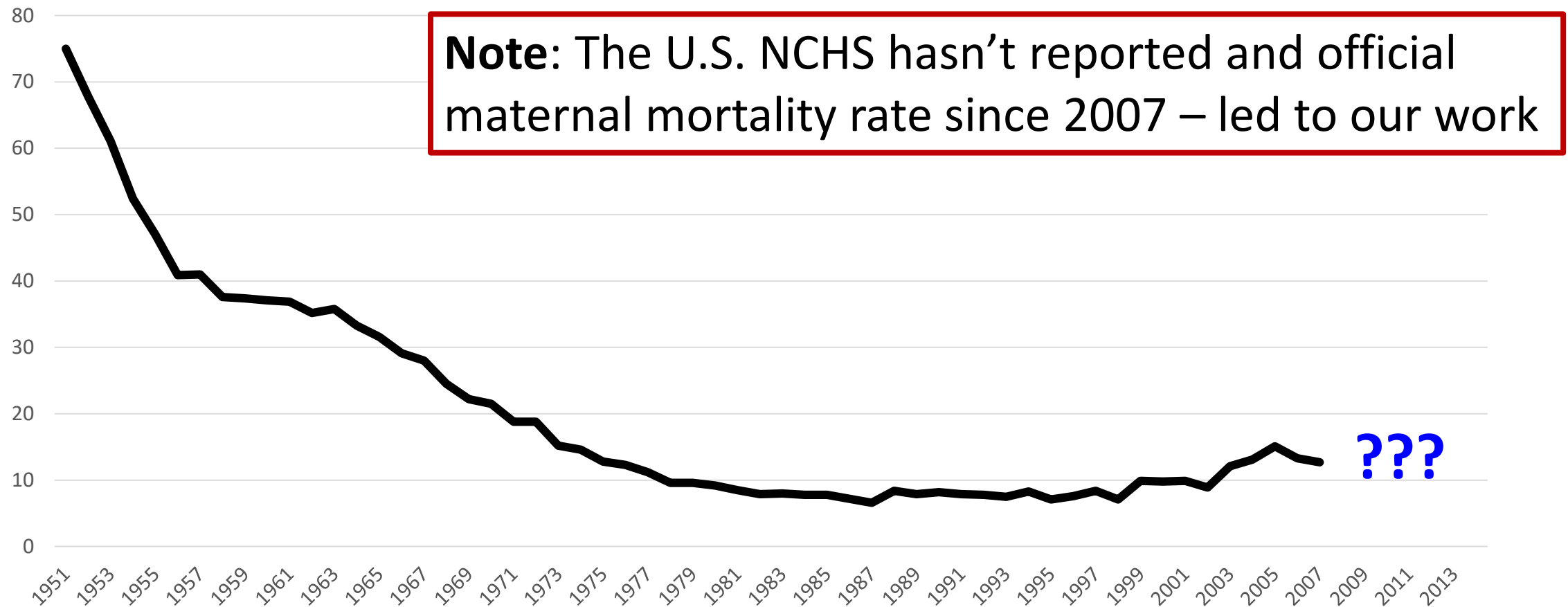
# Trends in Maternal Mortality: 1990 to 2013

Estimates by WHO, UNICEF, UNFPA, The World Bank  
and the United Nations Population Division

| Country                     | MMR <sup>a</sup> | Range of MMR uncertainty |                | Number of maternal deaths <sup>a</sup> | Lifetime risk of maternal death: <sup>a</sup><br>1 in: | % of AIDS-related indirect maternal deaths <sup>b</sup> | PM <sup>c</sup> (%) | Group <sup>d</sup> |
|-----------------------------|------------------|--------------------------|----------------|--|--|---|---------------------|--------------------|
|                             |                  | Lower estimate           | Upper estimate |  |  |   |                     |                    |
| United Kingdom              | 8                | 5                        | 12             | 60                                     | 6900   |   | 0.6                 | A                  |
| United Republic of Tanzania | 410              | 250                      | 660            | 7900                                   | 44   | 5.9   | 13.3                | B                  |
| United States of America    | 28               | 18                       | 44             | 1200                                   | 1800   |   | 1.5                 | A                  |
| Uruguay                     | 14               | 9                        | 20             | 7                                      | 3500   |   | 0.8                 | A                  |
| Uzbekistan                  | 36               | 31                       | 42             | 220                                    | 1100   |   | 2.2                 | A                  |

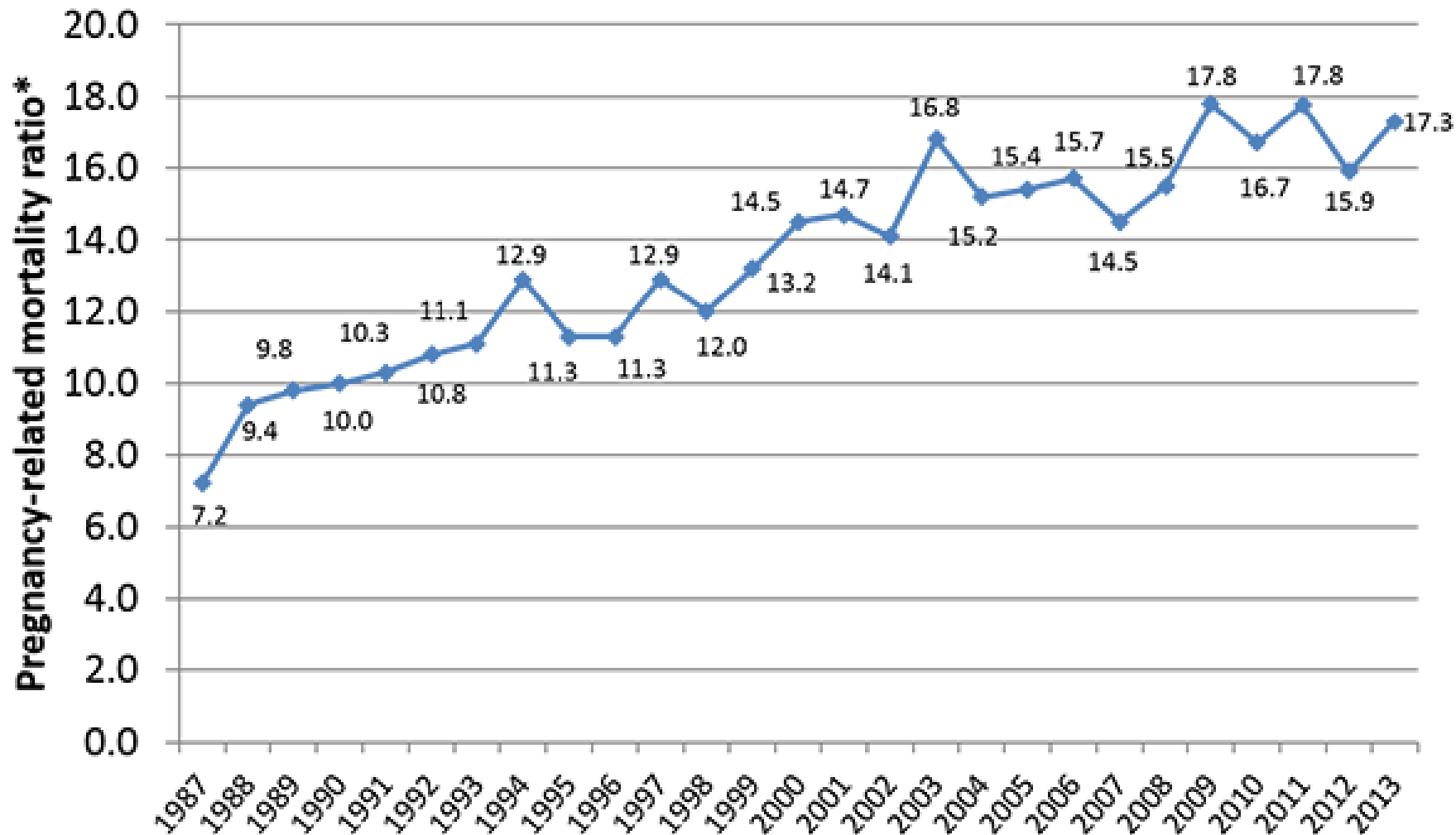


# U.S. Maternal Mortality (per 100,000 live births), 1951-2007



Source: NCHS. Deaths: Final Data. Annual Reports.

# Pregnancy Related Mortality, U.S., 1987-2013



\*Note: Number of pregnancy-related deaths per 100,000 live births per year.

## Racial Disparities

Rates for 2011-13:

**12.7** white women

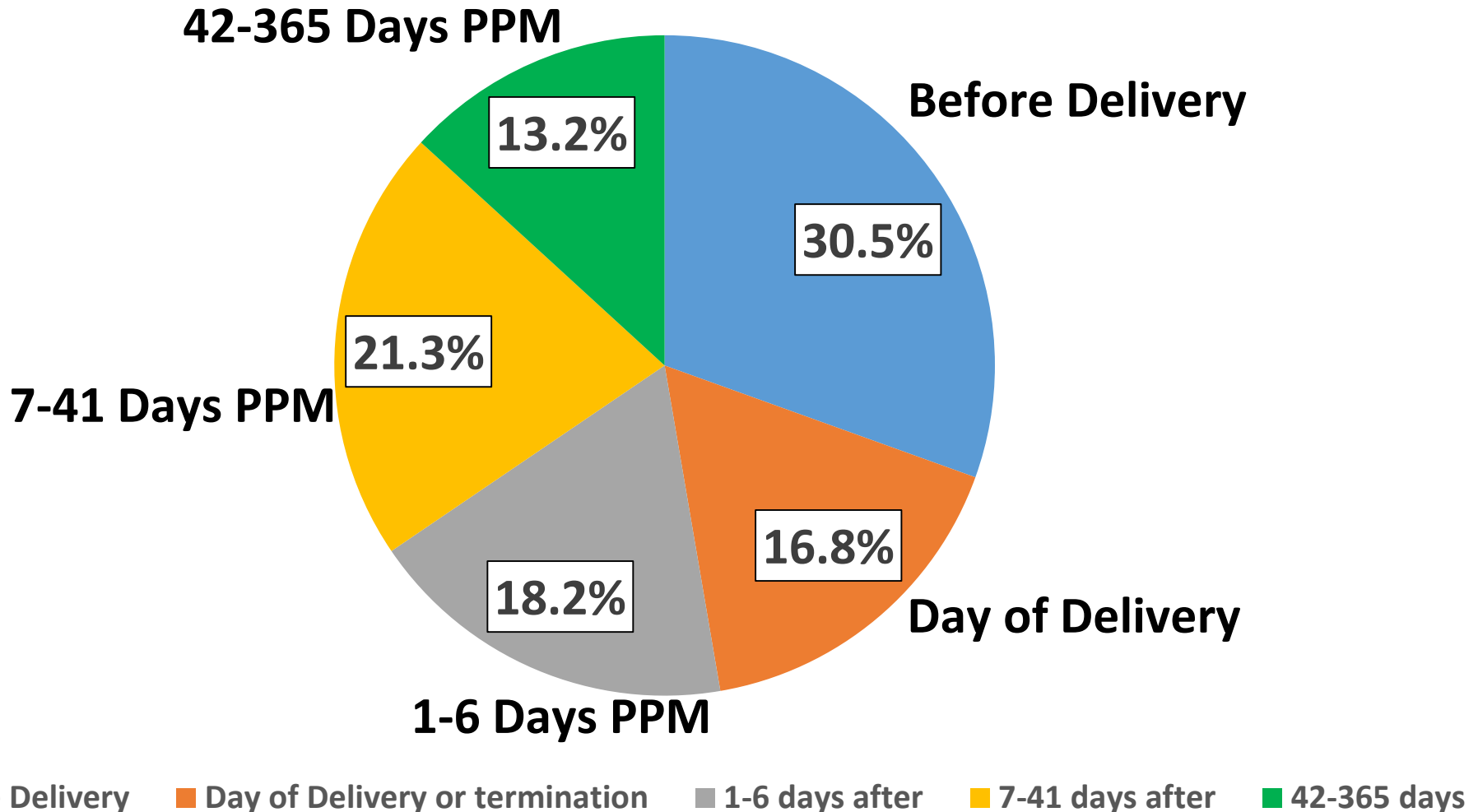
**43.5** black women

**11.0** Hispanic

**14.4** other races

**Source: CDC.**  
Creanga. Pregnancy-Related Mortality in the United States. *Obstet Gynecol* 2017.

# Timing of Maternal Deaths



Source: Creanga A et al. Pregnancy Related Mortality in the U.S., 2011-2013. *Obstet & Gynec* 2017.

# Estimating Maternal Mortality Ratios

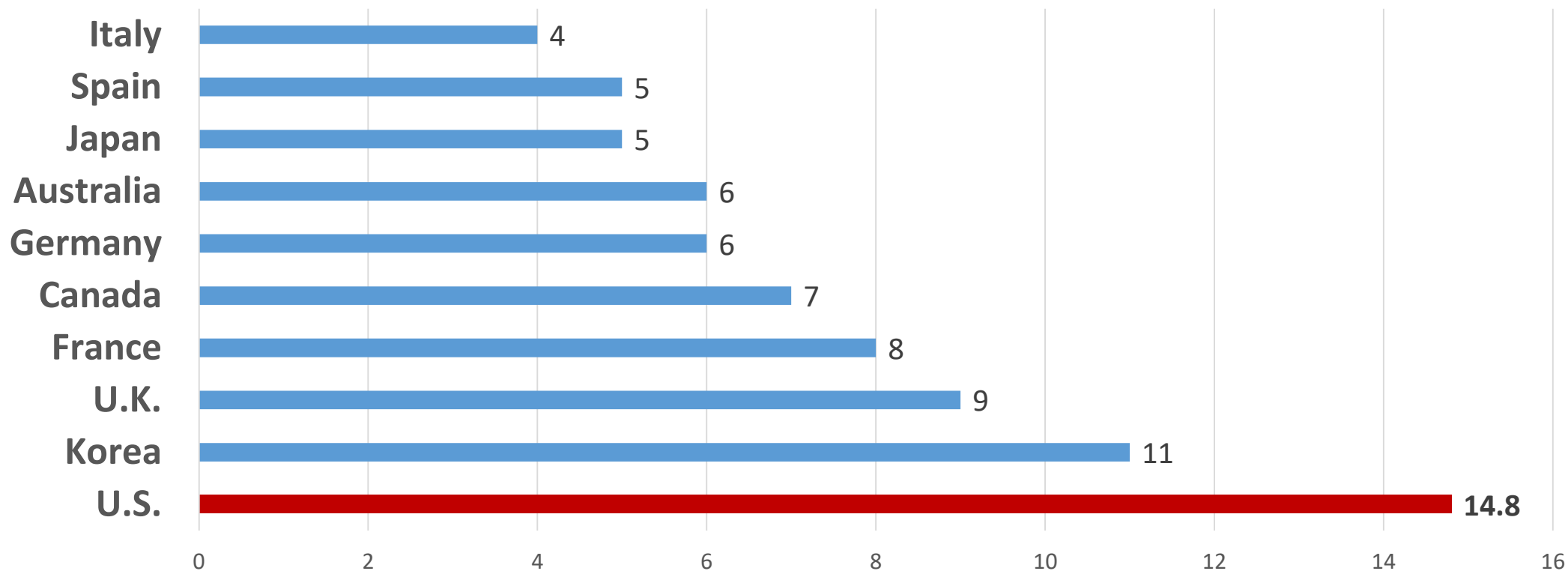
*Adjusting the CDC Pregnancy Related Mortality data  
to reflect a maternal mortality rate*

Estimated for 2011-2013 (per 100,000 live births):

- **All women** 14.8
- Non-Hispanic white women 11.3
- Non-Hispanic black women 36.2
- Hispanic women 10.0
- **Black-white disparity** 3.2



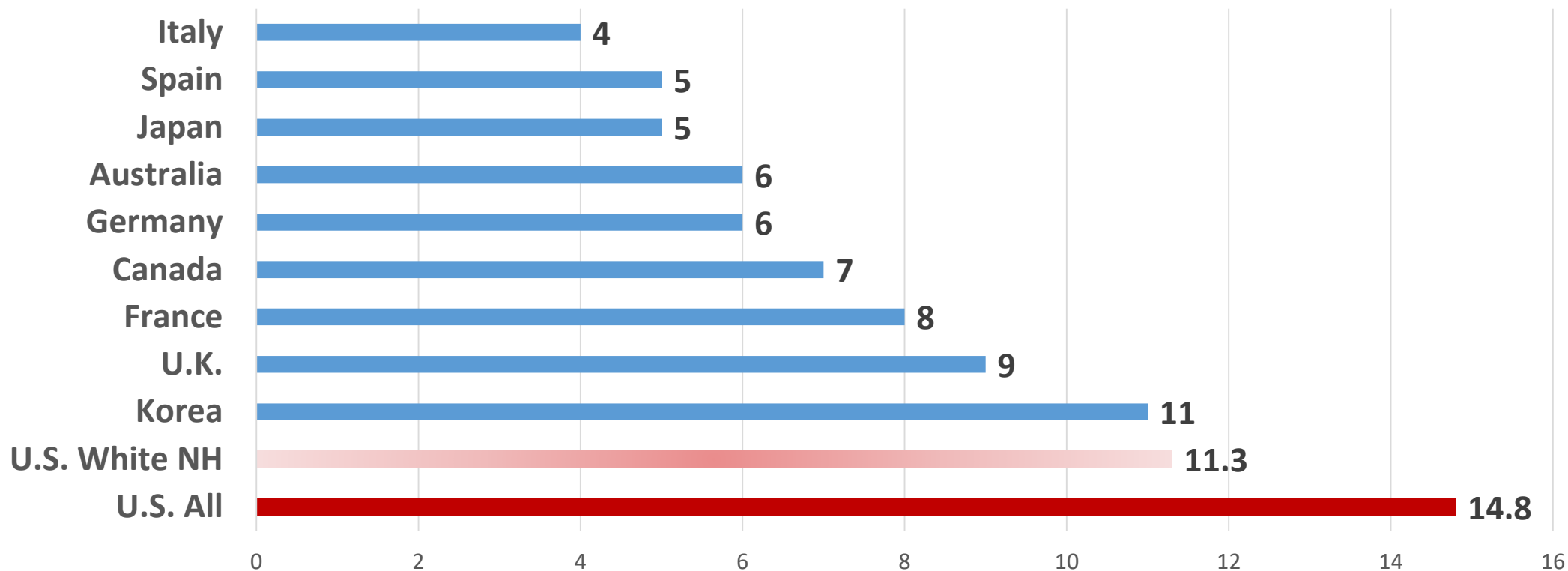
# U.S. MMR\* Compared to Countries with 300,000+ births, 2014, using WHO Estimates



\* Maternal Mortality per 100,000 births

Source: *Maternal Mortality: 1990 to 2015* Estimates by WHO, UNICEF, UNFPA, World Bank Group & UN Population Division. Geneva: 2015.

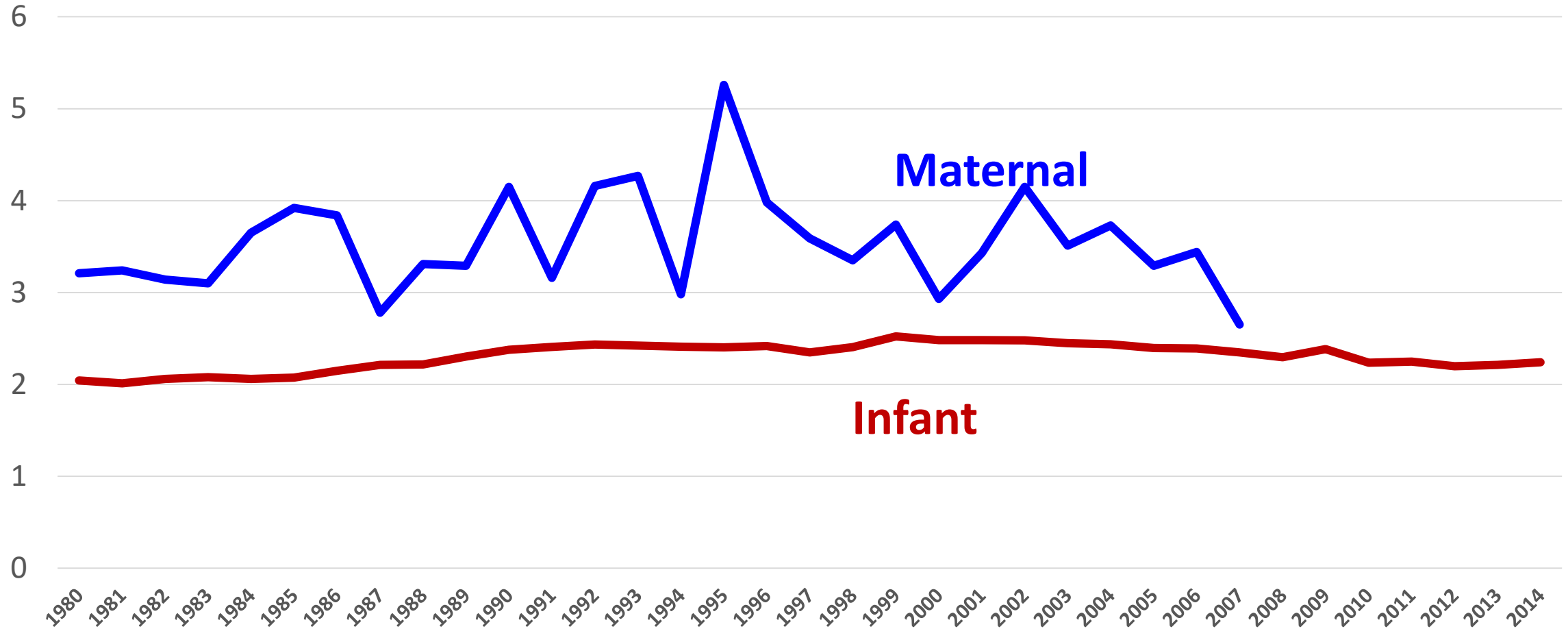
# U.S. MMR\* Compared to Countries with 300,000+ births, 2014, using WHO Estimates



\* Maternal Mortality Ratio per 100,000 births

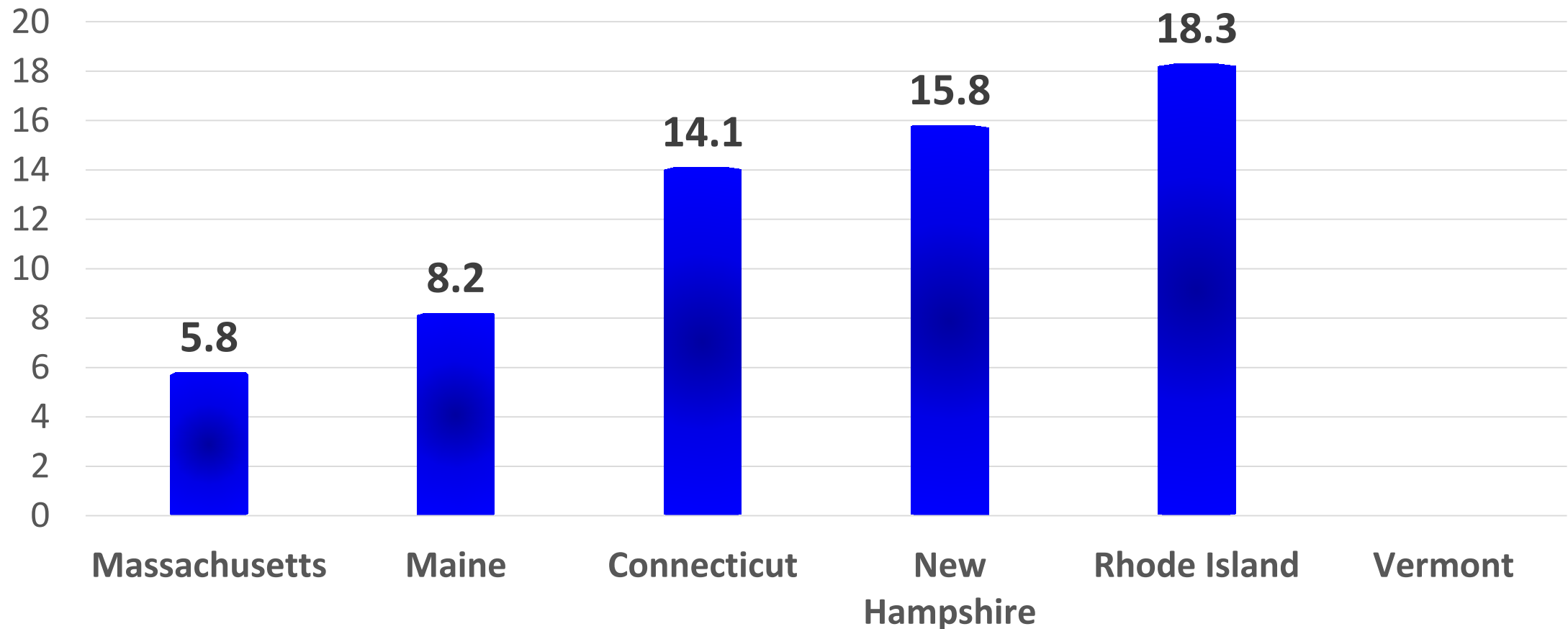
Source: *Maternal Mortality: 1990 to 2015* Estimates by WHO, UNICEF, UNFPA, World Bank Group & UN Population Division. Geneva: 2015.

# U.S. Infant & Maternal Mortality Black to White Ratios of 1980-2014



***Why is disparity greater for maternal mortality than infant mortality?***

# Maternal Mortality Ratio (per 100,000 live births) in New England States, 2016 (?)

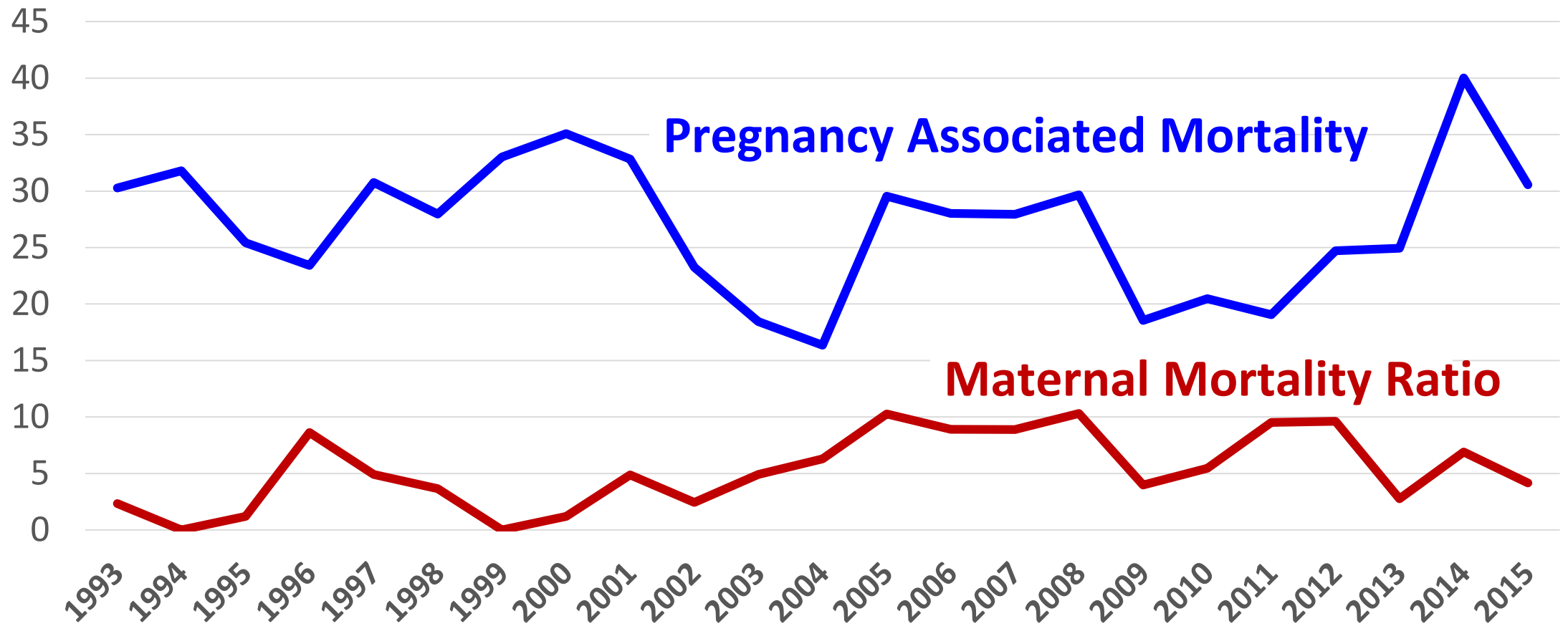


Source: America's Health Rankings. United Health Foundation. Their cited source – CDC, National Vital Statistics System

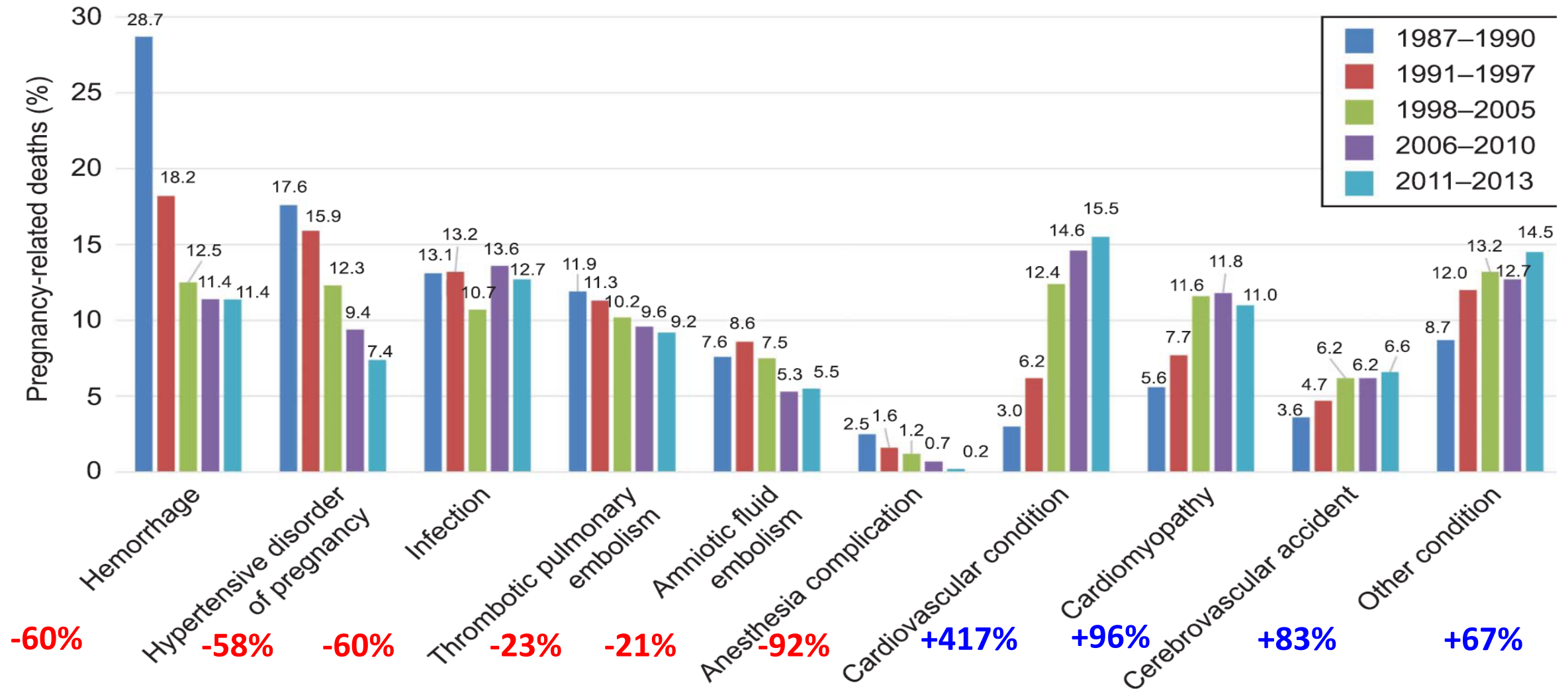
[https://www.americashealthrankings.org/explore/2016-health-of-women-and-children-report/measure/maternal\\_mortality/state/CT/compare/RI](https://www.americashealthrankings.org/explore/2016-health-of-women-and-children-report/measure/maternal_mortality/state/CT/compare/RI)



# Massachusetts Maternal Deaths, (per 100,000), 1992-2015



# Cause-specific proportionate pregnancy-related mortality: United States, 1987–2013.



Source: Creanga. Pregnancy-Related Mortality in the United States. Obstet Gynecol 2017.

**Turning now to  
the actual topic of this  
presentation**

# ***Why It's Important to Listen to Mothers***

- **Humbling** because we find that they don't think like we do
- **Maternal Attitudes** – Determine mothers' **attitudes** toward pregnancy, birth and the postpartum experience
- **Mothers' Perspectives** – Document mothers' **experience** from their perspective
- **Identify needs** – and who has them – that wouldn't be known from other data sources
- Can get at the “**Why?**” question which is not possible from other sources which focus on “What?”
- Leads to better **Design of Systems** and better **Outcomes**



**So what can we learn from  
mothers that we can't learn from  
other sources?**

# Listening to Mothers™ III

## Pregnancy and Birth



Report of the Third National U.S. Survey of Women's Childbearing Experiences



Eugene R. Declercq  
Carol Sakala  
Maureen P. Corry  
Sandra Applebaum  
Ariel Herrlich

May 2013

# Listening to Mothers™ III

## New Mothers Speak Out



Report of National Surveys of Women's Childbearing Experiences  
Conducted October – December 2012 and January – April 2013



Eugene R. Declercq  
Carol Sakala  
Maureen P. Corry  
Sandra Applebaum  
Ariel Herrlich

June 2013

***California Listening to Mothers just back from the field***

# Survey Data

- **2400 mothers** 18-45 who had given birth to single babies in a U.S. hospital from July 1, 2011 through June 30, 2012 completed the 30 minute survey online in English.
- The data were adjusted with demographic and propensity score weightings using methodology developed and validated by Harris Interactive with results generally representative of U.S. mothers on age, race/ethnicity, parity, birth attendant and mode of birth.
- Mothers who completed the initial survey were recontacted and invited to complete a follow-up survey between January 29 and April 15, 2013. A total of **1072** mothers, or 45% of the initial participants, were reached and completed the survey.

**What can we learn from mothers that we  
can't learn from other sources?**

**1. Careful, accurate prenatal diagnosis**

**(The case of the “Big Baby”)**

**2. Choice in the Place of Birth**

**3. Choice in Method of Delivery**

**(The case of the vanishing VBAC)**

# **What can we learn from mothers that we can't learn from other sources?**

## **4. Opportunity for Shared decision making**

**(Induction and repeat cesareans)**

## **5. Experience of Poor Treatment**

**Bonus Material!**

# 1. Careful, Accurate Prenatal Diagnosis

*I would like my maternity care provider to tell me about the risks associated with each option so I know how each could affect me.*

|                   |     |
|-------------------|-----|
| Strongly Agree    | 36% |
| Agree             | 55% |
| Disagree          | 7%  |
| Strongly Disagree | 2%  |

# 1. Careful Accurate Prenatal Diagnosis

The rise of the big baby



**14 pounds 8 ounces**

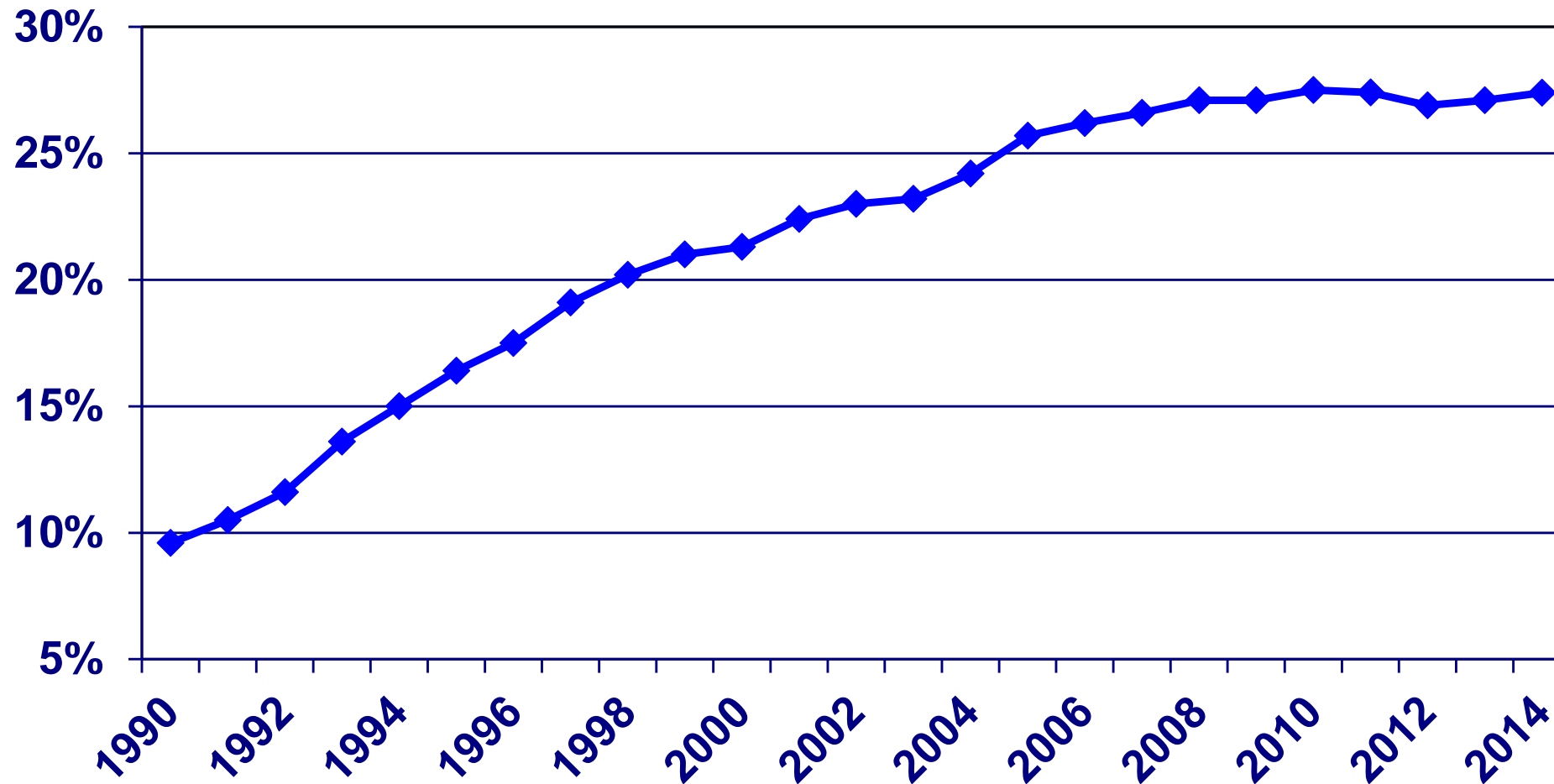


# The rise of the big baby



**19 pounds**

# Inductions in Vaginal Births, U.S., 1990-2014



Source: Centers for Disease Control and Prevention. National Center for Health Statistics. VitalStats.  
<http://www.cdc.gov/nchs/vitalstats.htm>.

*BirthByTheNumbers.org*

# Labor Induction – Listening to Mothers

- Three in ten (**29%**) mothers tried to start their labor on their own.
- More than four out of ten respondents (**41%**) indicated that their care provider tried to induce their labor
- Three out of four of those women (**74%**) indicating that it did start labor, resulting in an overall rate of medically induced labor of **30%**.

# Reasons why mothers experienced **medical induction**

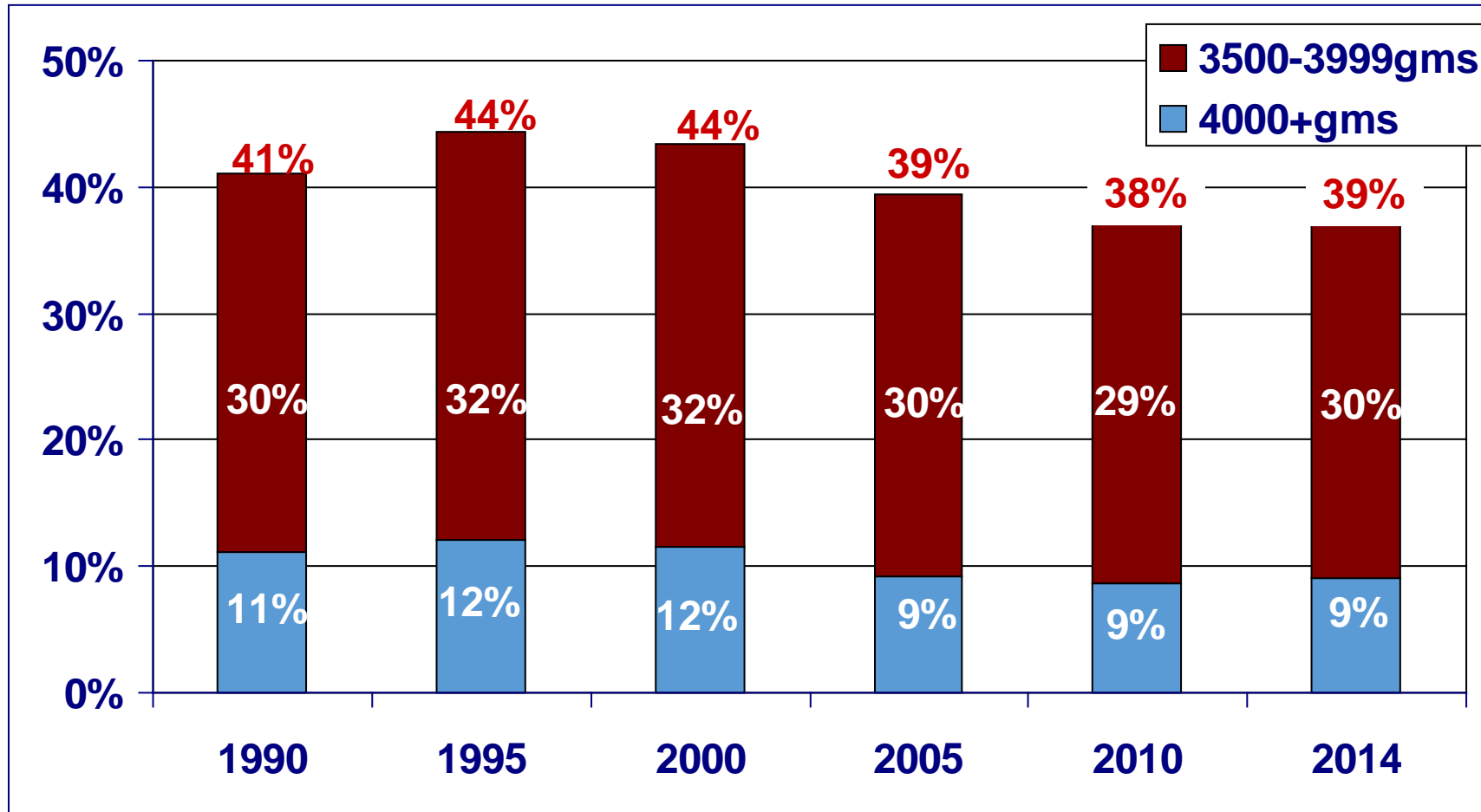
| Base: care provider tried to induce labor <i>n=991</i>                      |     |
|---|-----|
| Baby was full term/close to due date  | 44% |
| Mother wanted to get pregnancy over with                                    | 19% |
| Care provider was concerned that mother was “overdue”                       | 18% |
| Maternal health problem that required quick delivery                        | 18% |
| Care provider was concerned about the size of the baby                      | 16% |
| Water had broken and there was a concern about infection                    | 12% |
| Mother wanted to control timing of birth for work or other personal reasons | 11% |
| Care provider was concerned that amniotic fluid around the baby was low     | 11% |
| Care provider was concerned that baby was not doing well                    | 10% |
| Mother wanted to give birth with a specific provider                        | 10% |
| Some other reason   | 10% |

# Reasons for primary and repeat cesarean birth

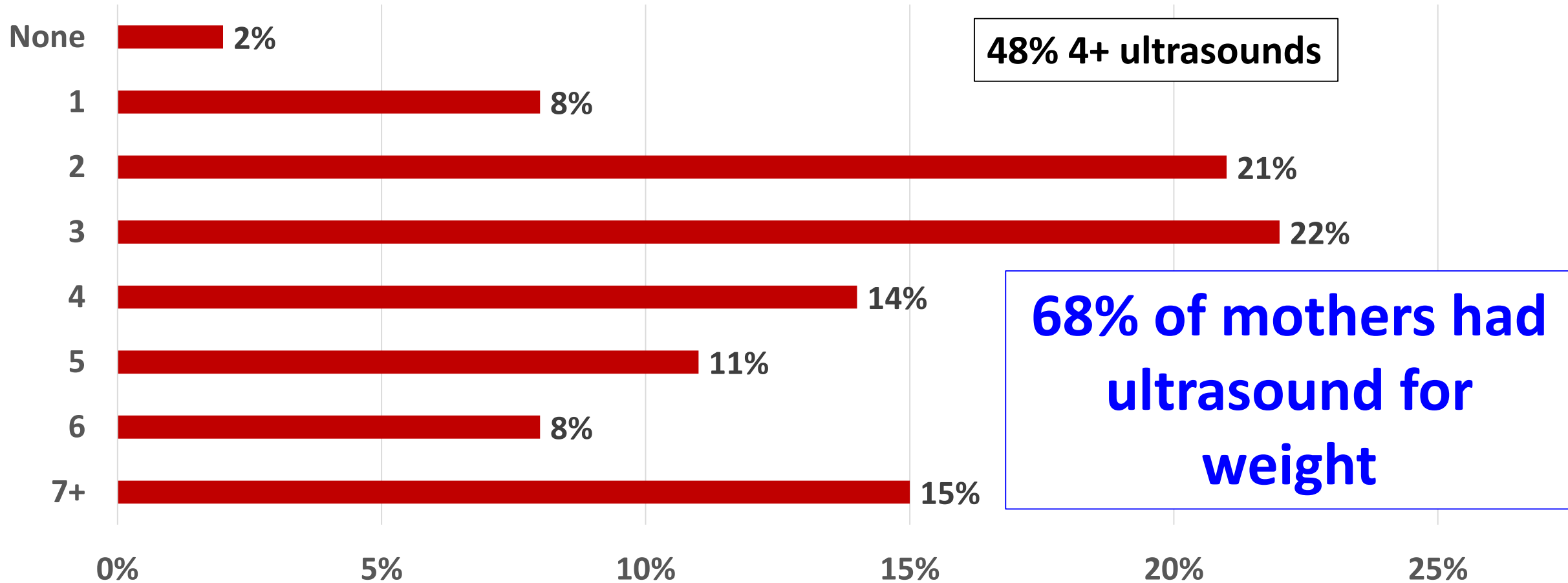
| Base: had cesarean <i>n</i> =744 (choose reason that best applies) | Primary cesarean<br><i>n</i> =368 | Repeat cesarean <i>n</i> =376 |
|--|-----------------------------------|-------------------------------|
| I had had a prior cesarean ( <i>asked of prior cesarean only</i> ) | n.a.                              | 61%                           |
| Baby was in the wrong position                                     | 16%                               | 3%                            |
| Fetal monitor showed the baby was having problems during labor     | 11%                               | 3%                            |
| I had a health condition that called for procedure                 | 10%                               | 13%                           |
| Baby was having trouble fitting through                            | 10%                               | 2%                            |
| <b>Maternity care provider worried the baby was too big</b>        | <b>9%</b>                         | <b>2%</b>                     |
| <b>Provider tried to induce labor but it didn't work</b>           | <b>8%</b>                         | <b>3%</b>                     |
| Problem with the placenta  | 8%                                | 2%                            |
| Labor was taking too long  | 7%                                | 2%                            |
| <b>Past my due date</b>  | <b>3%</b>                         | -                             |
| <b>Afraid to labor and have baby vaginally</b>                     | <b>3%</b>                         | -                             |
| <b>No medical reason</b>   | <b>4%</b>                         | <b>3%</b>                     |

# Are U.S. Babies Getting Bigger?...NO!

*% Singleton, **Full Term** Babies by Birthweight, U. S., 1990-2014*



# Number of Ultrasounds





# Labor and Delivery Experiences of Mothers with Suspected Large Babies

Erika R. Cheng<sup>1</sup> · Eugene R. Declercq<sup>2</sup> · Candice Belanoff<sup>3</sup> ·  
Naomi E. Stotland<sup>4</sup> · Ronald E. Iverson<sup>5</sup>

# What's with these Big Babies?

***Near the end of your pregnancy, did your maternity care provider tell you that your baby might be getting quite large?***

| <b>31.2% YES</b>                                 | <b>ALL</b>        | <b>Yes</b>         | <b>No</b>        |
|--|-------------------|--------------------|------------------|
| <b><i>Actual Weight</i></b>                      | 7 lbs<br>5 ounces | 7 lbs<br>14 ounces | 7 lbs<br>1 ounce |
| <b>Baby Macrosomic<br/><i>(8lb 13ounces)</i></b> | 9.9%              | 19.7%              | 5.5%             |

# What's the impact of being told you might have a big baby?

## *Labor and Delivery Outcomes*

|                                | <u>Suspected Large Baby</u> |             |            |
|--------------------------------|-----------------------------|-------------|------------|
|                                | <u>Yes</u>                  | <u>No</u>   |            |
|                                | <u>%</u>                    | <u>%</u>    |            |
| Tried Self Induction of Labor  | <b>43.0</b>                 | <b>24.7</b> | <b>***</b> |
| Medical Induction of Labor     | <b>70.1</b>                 | <b>51.1</b> | <b>***</b> |
| Cesarean Delivery              | <b>21.1</b>                 | <b>18.1</b> | <b>NS</b>  |
| Epidural Analgesia             | <b>72.7</b>                 | <b>61.7</b> | <b>***</b> |
| Requested Cesarean<br>Delivery | <b>32.5</b>                 | <b>6.8</b>  | <b>***</b> |

\*\*\*p < .001

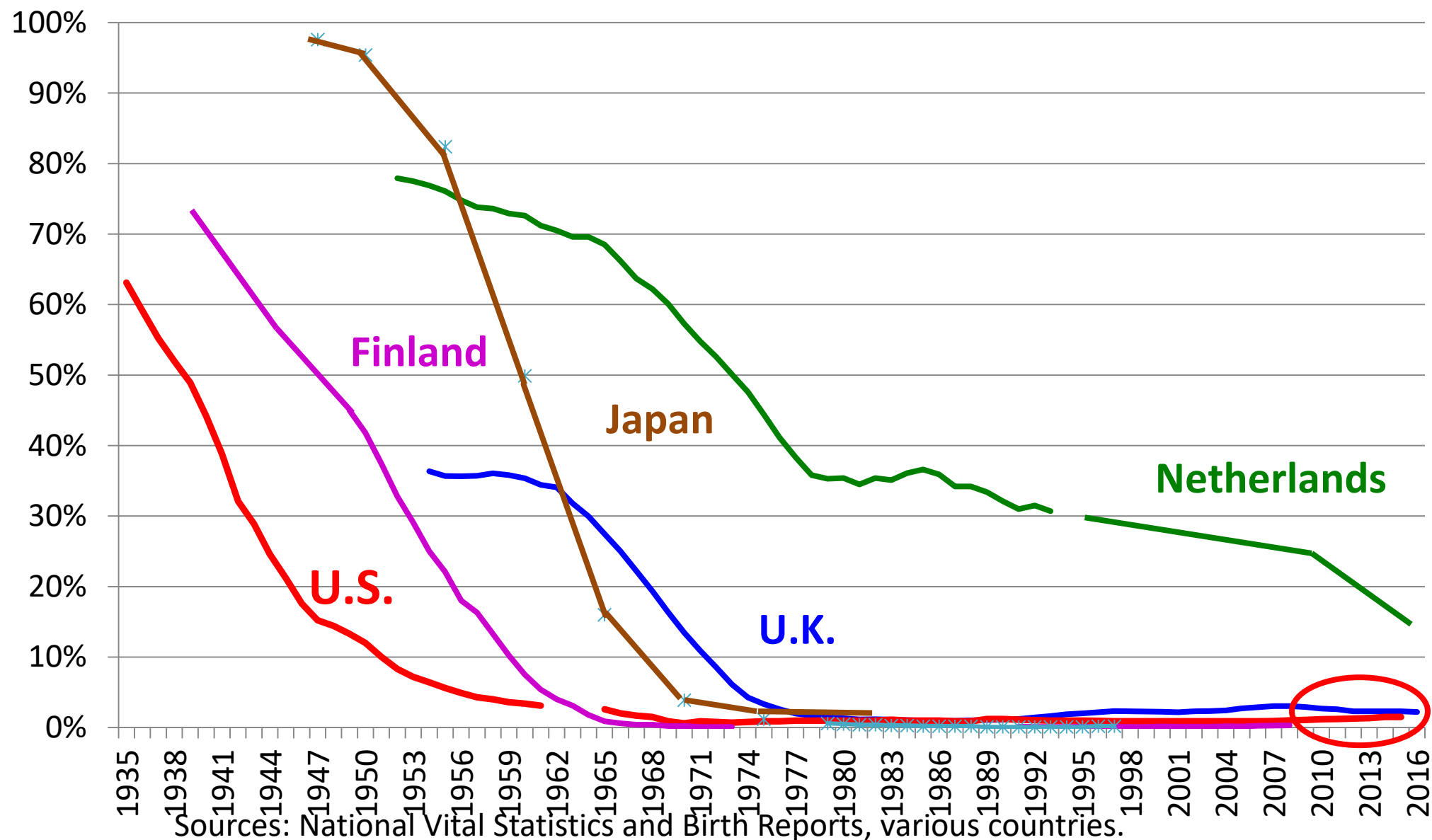
# Likelihood of Labor or Delivery Outcomes Controlling for Key Variables

- **Self Induced Labor** – almost twice as likely
- **Medical Induction** – almost twice as likely
- **Epidural** – twice as likely
- **Requesting a cesarean** – 4 times as likely

**Would have never discovered  
this phenomenon if we didn't  
listen to mothers**

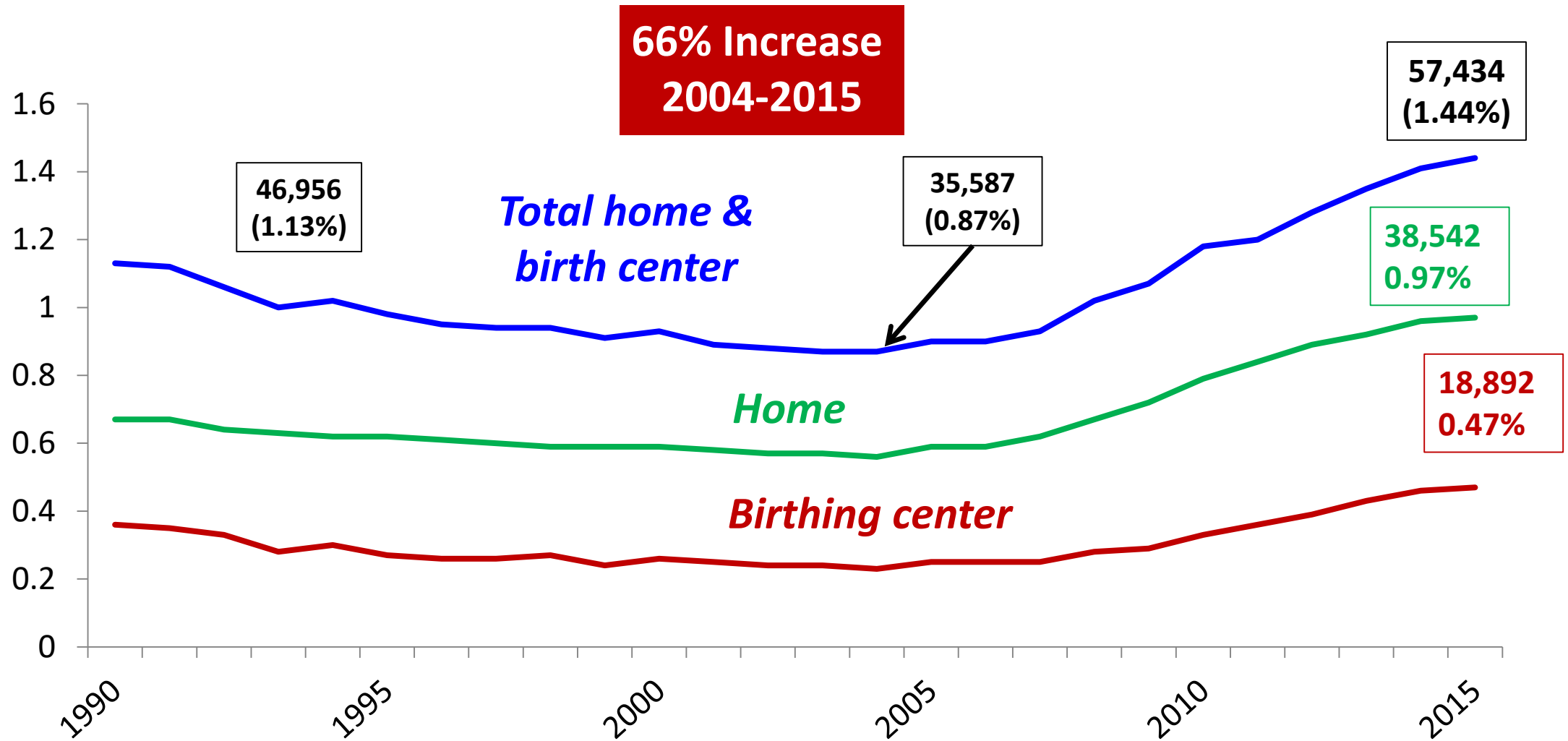
## **2. Mothers' Interest in Alternatives for Place of Birth**

# Out of Hospital Births, Selected Countries, 1935-2016





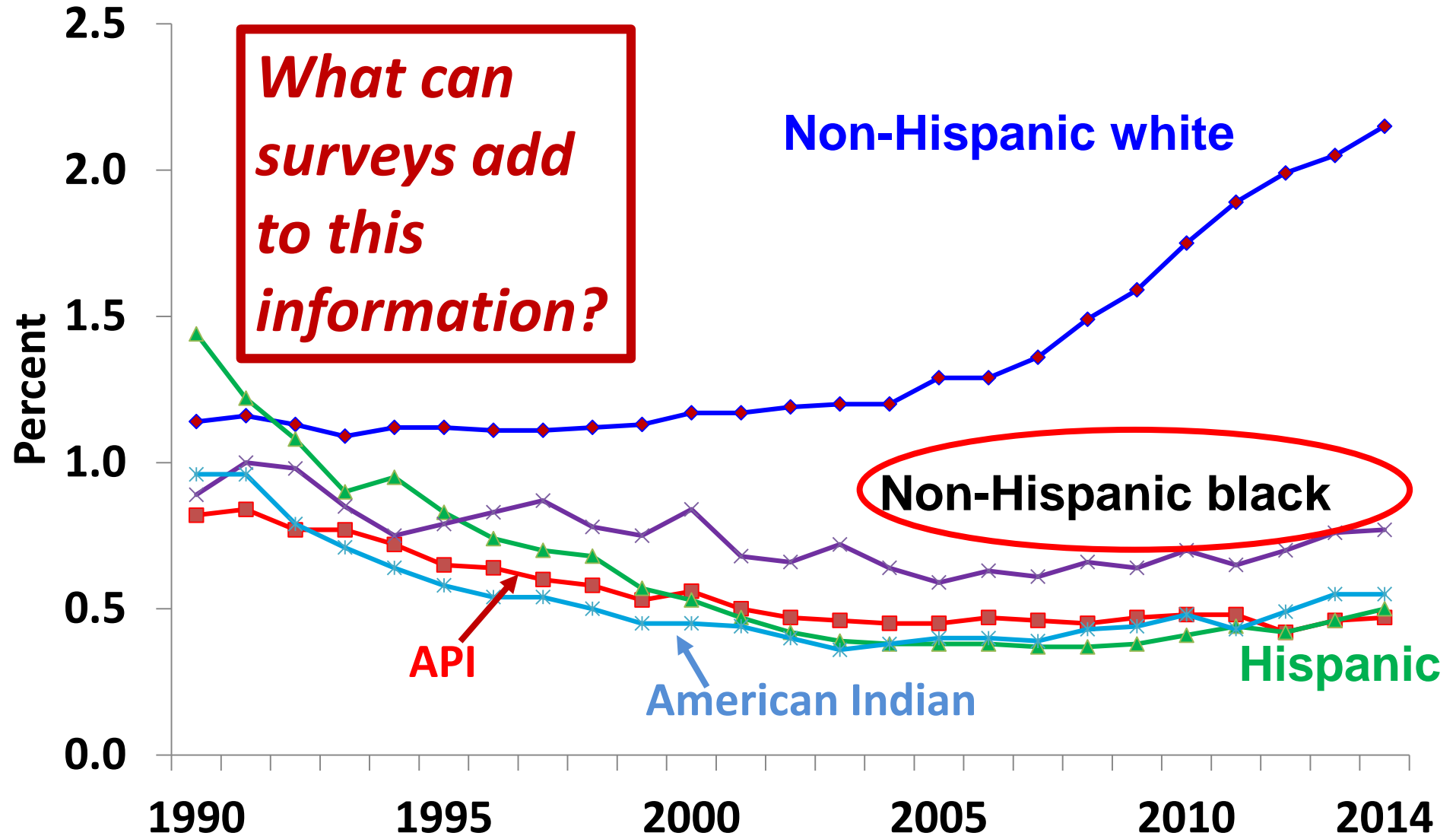
# Percent of all births at home, or in a birthing center, United States, 1990-2015



Source: NCHS Annual Birth Reports &  
CDCVitalStats. <http://www.cdc.gov/nchs/nvss.htm>

*BirthByTheNumbers.org*

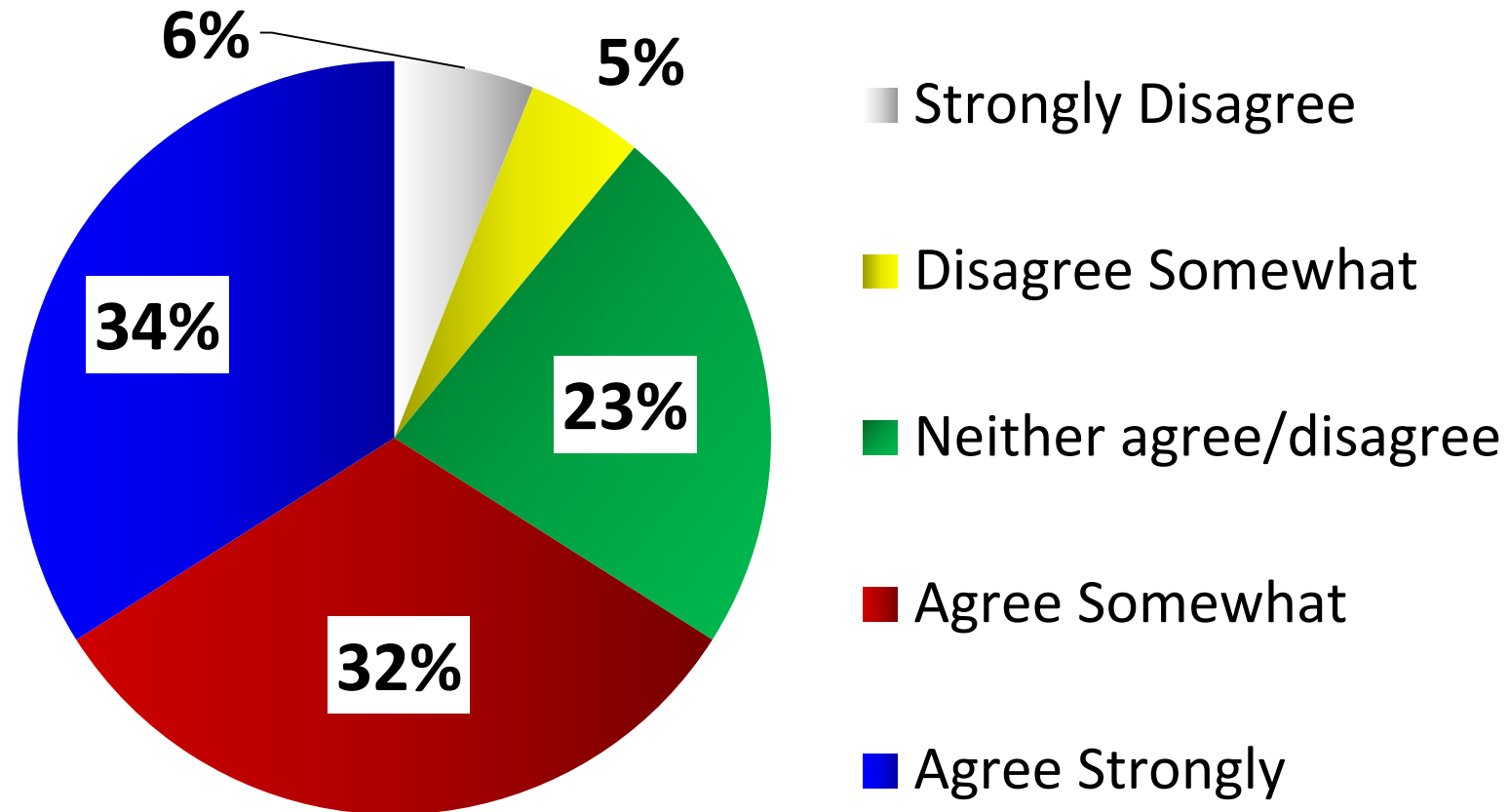
# Percentage of births occurring outside a hospital by race and Hispanic origin of mother, United States, 1990-2014



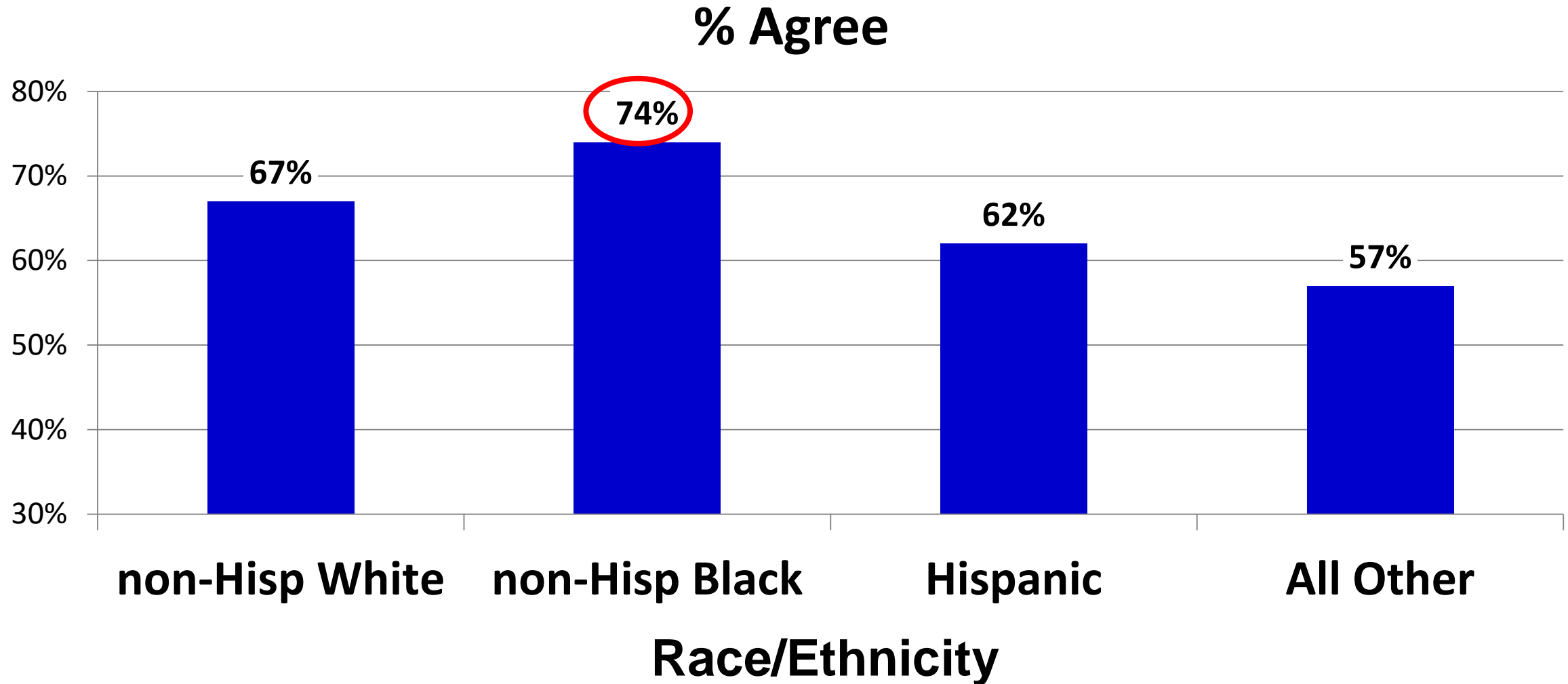
Notes: Non-Hispanic white, Non-Hispanic black and Hispanic data exclude New Hampshire in 1990-92 and Oklahoma in 1990, as these states did not report Hispanic origin on their birth certificates for those years. API denotes Asian or Pacific Islander.

Source: Birth certificate data from the National Vital Statistics System.

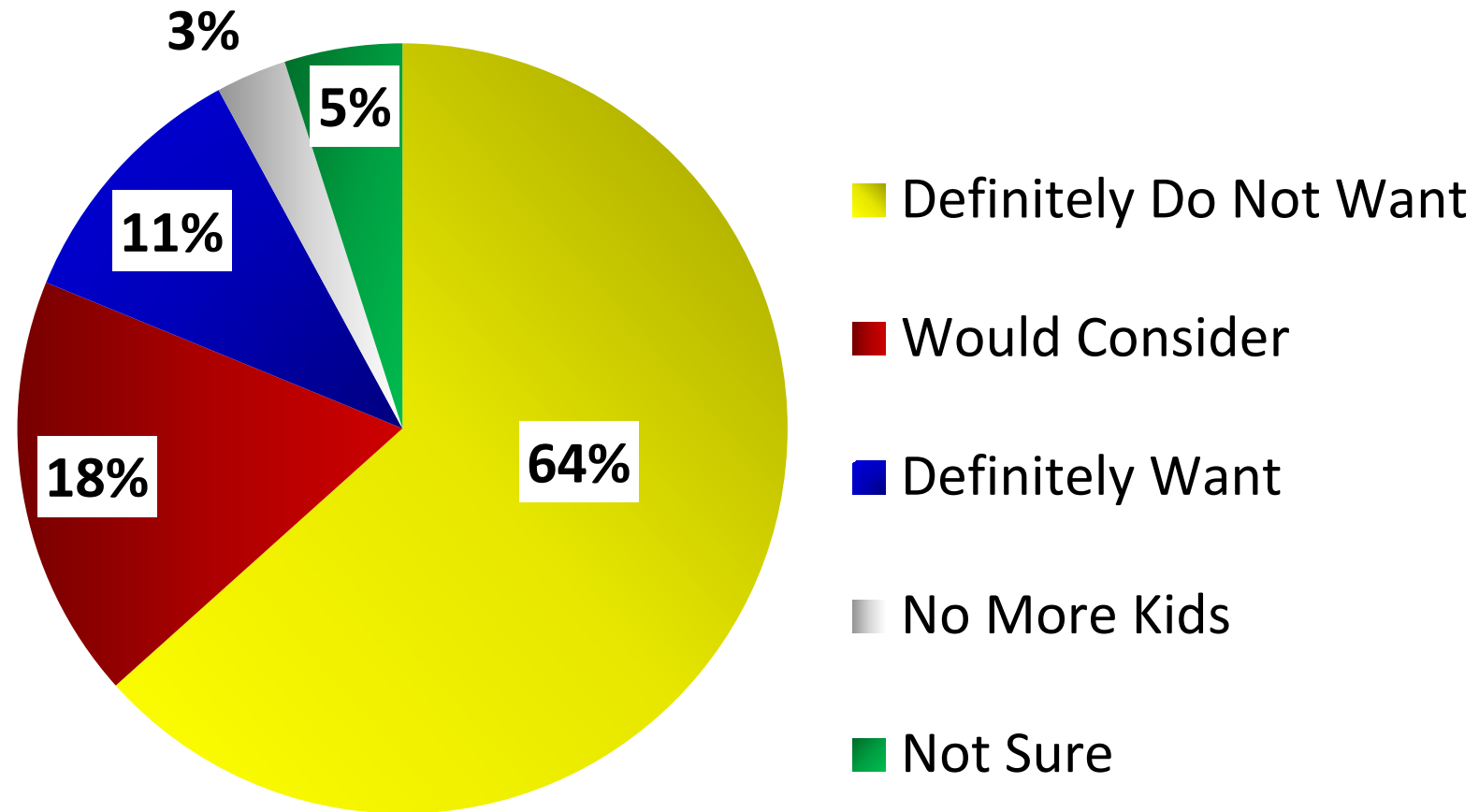
***If a woman wants to have her baby at home, she should be able to do so.***



***If a woman wants to have her baby at home, she should be able to do so.***

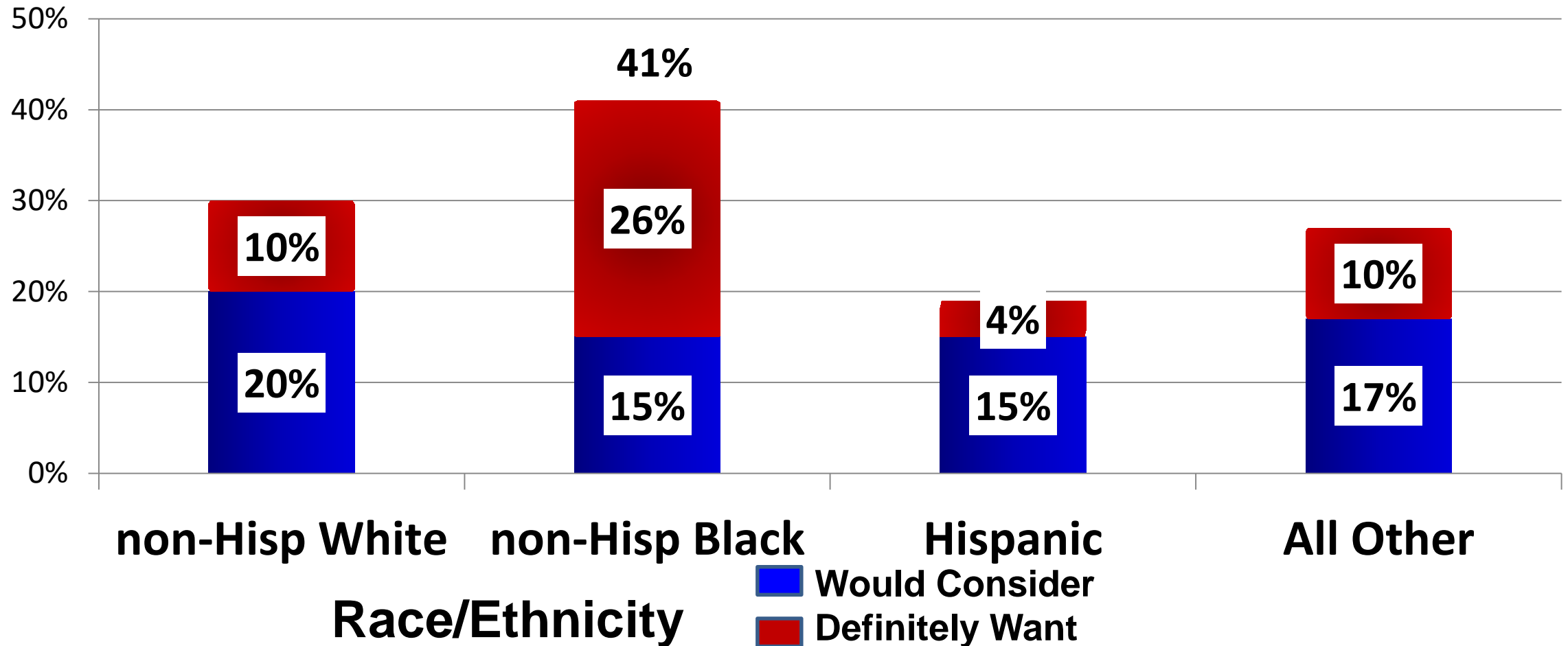


***For any future births, how open would you be to giving birth at **home**?***



# *For any future births, how open would you be to giving birth at home?*

**% Agree**



- ***So home births are really rising in the U.S. and some industrialized countries.***

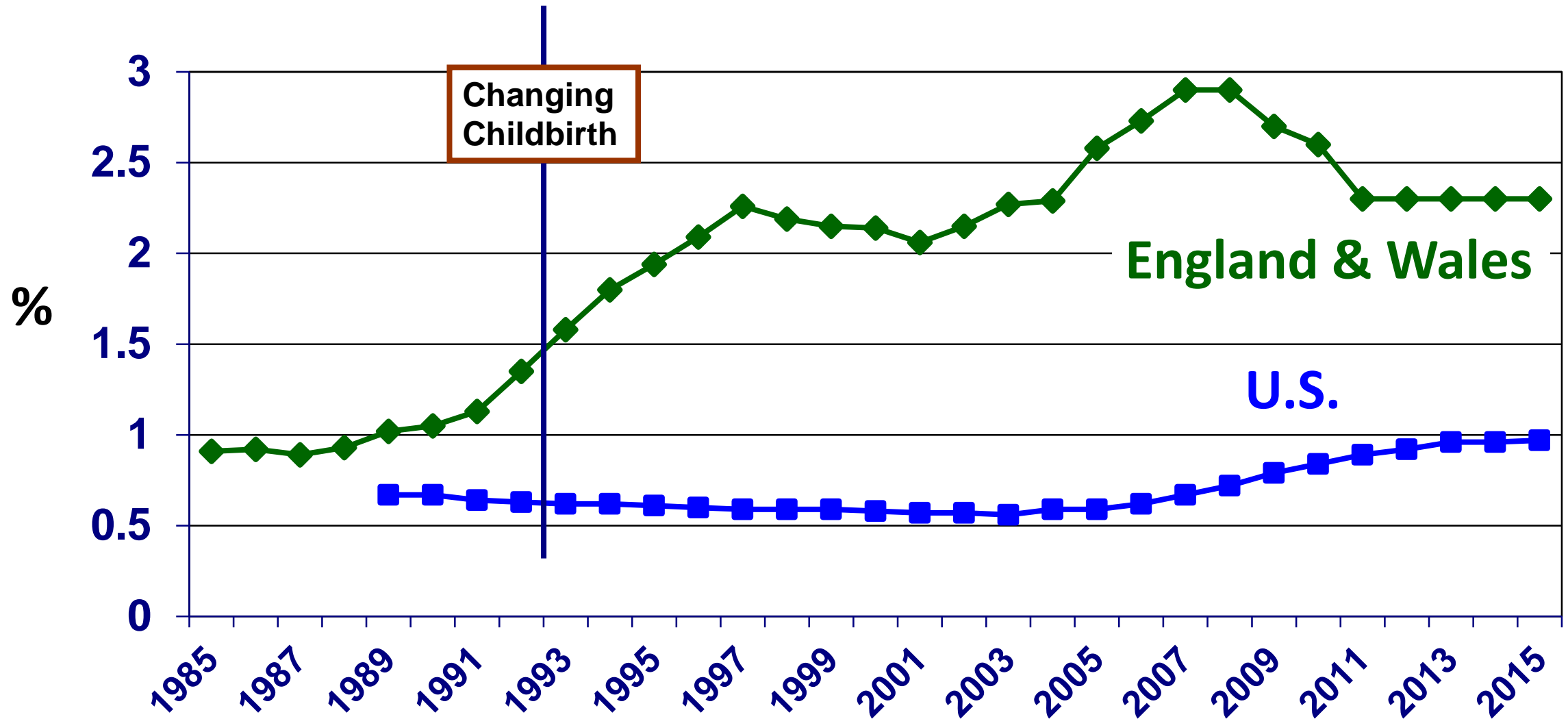
***In absolute numbers there are more home births in the U.S. than in the Netherlands.***

***This trend will keep going right?***



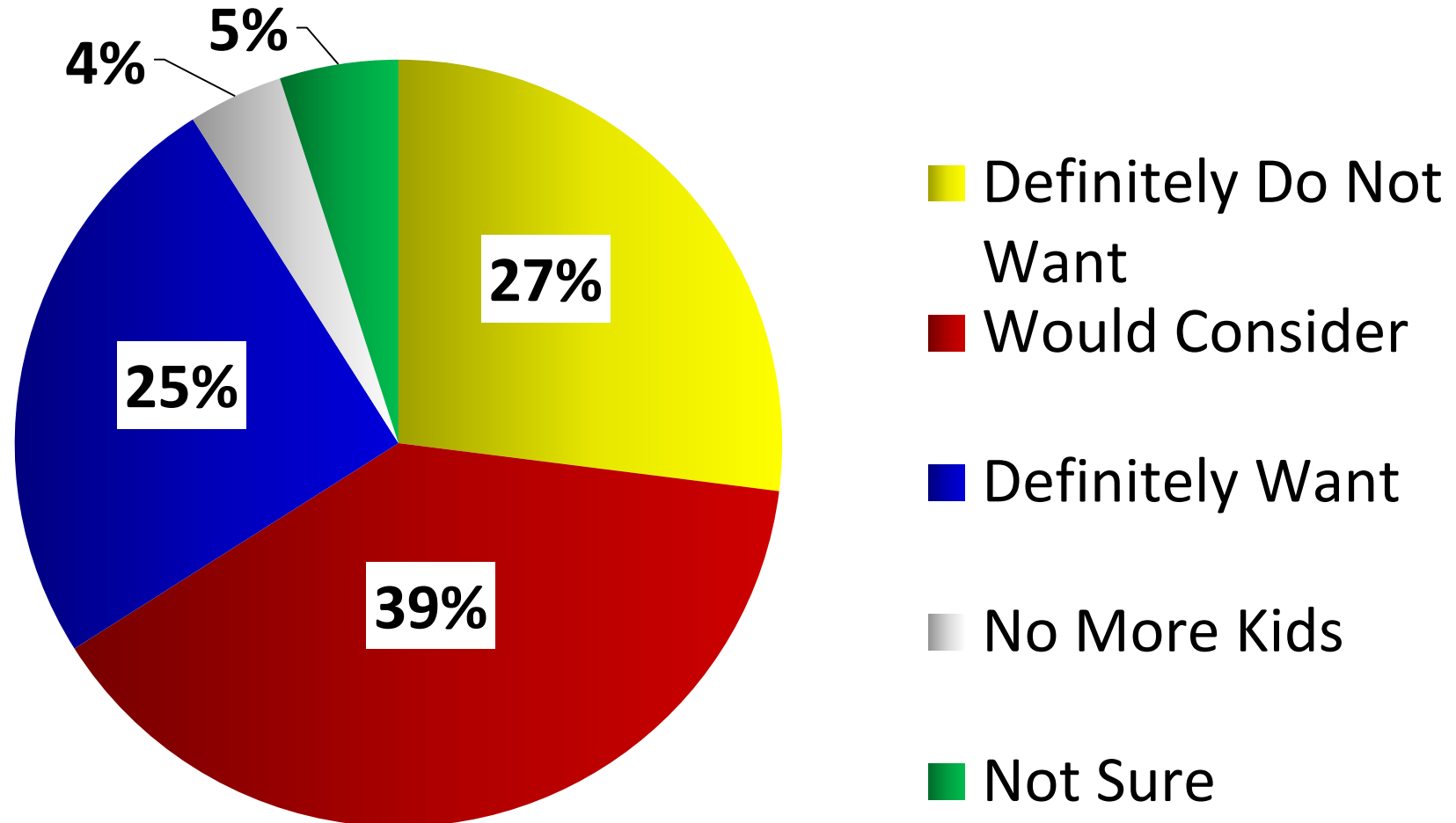
# *Not too much more*

Proportion of Home Births, England, U.S., Australia



# ***EVEN GREATER INTEREST IN BIRTH CENTERS***

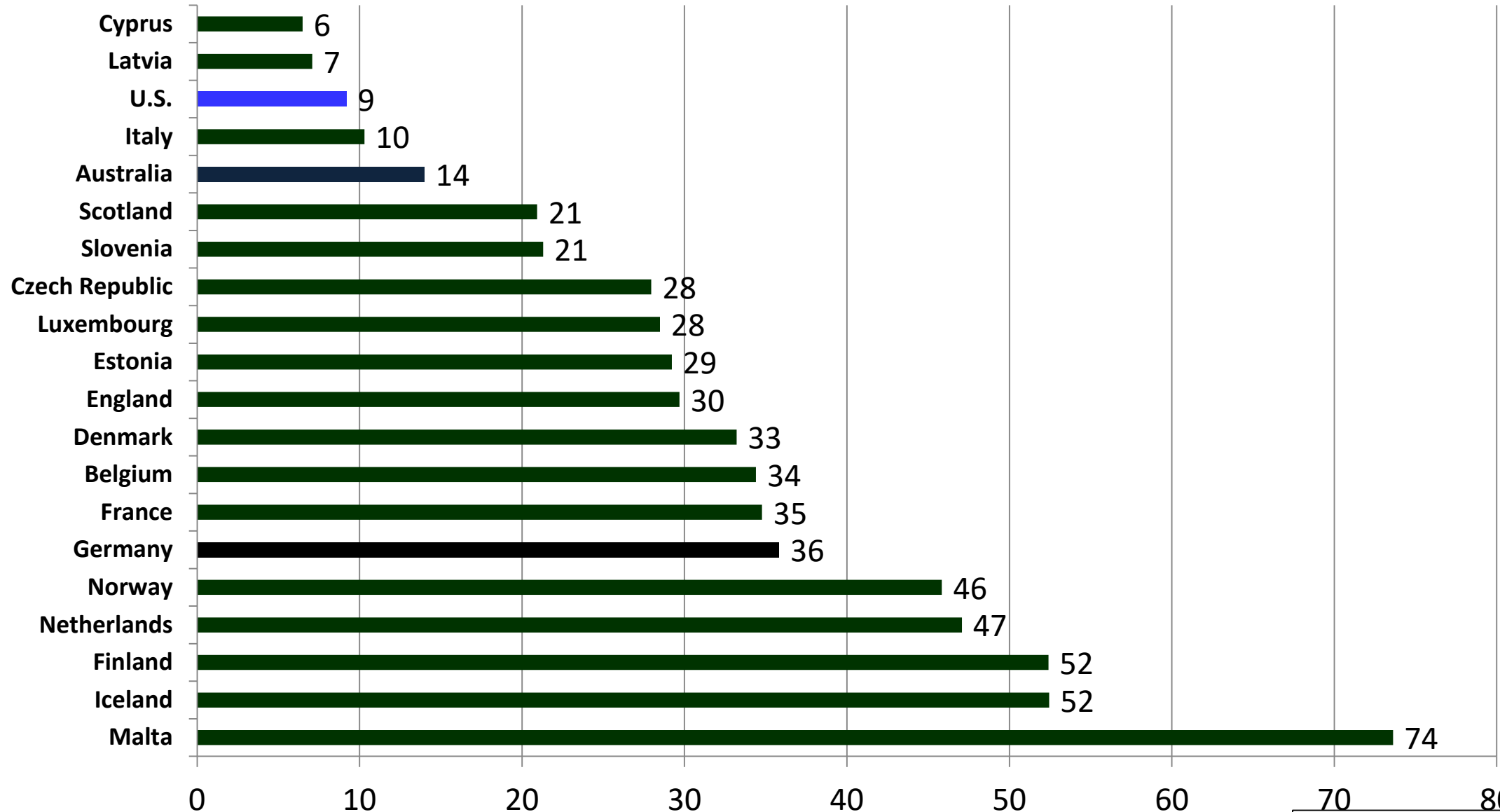
***For any future births, how open would you be to giving birth at a birth center that is separate from a hospital?***



# **3. Choice in Method of Delivery**

***Mothers' Experience with  
Vaginal Birth After Cesarean***

# VBAC Rates Industrialized Countries, 2010



# ***Bulletin followed an NIH Consensus Meeting and Publication of Evidence Report***

THE AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS  
WOMEN'S HEALTH CARE PHYSICIANS



## **PRACTICE BULLETIN**

***CLINICAL MANAGEMENT GUIDELINES FOR OBSTETRICIAN—GYNECOLOGISTS***

Number 115, **August, 2010**

(Replaces Practice Bulletin Number 34, July 2004 and Committee Opinion Number 342, August 2006), Reaffirmed 2013  
Committee on Practice Bulletins—Obstetrics. This Practice Bulletin was developed by the Committee on Practice  
Bulletins—Obstetrics with the assistance of William Grobman, MD, and Jeffrey Ecker, MD. The information is  
designed to aid practitioners in making decisions about appropriate obstetric and gynecologic care. These  
guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in  
practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the  
institution or type of practice.

[PDF Format](#)

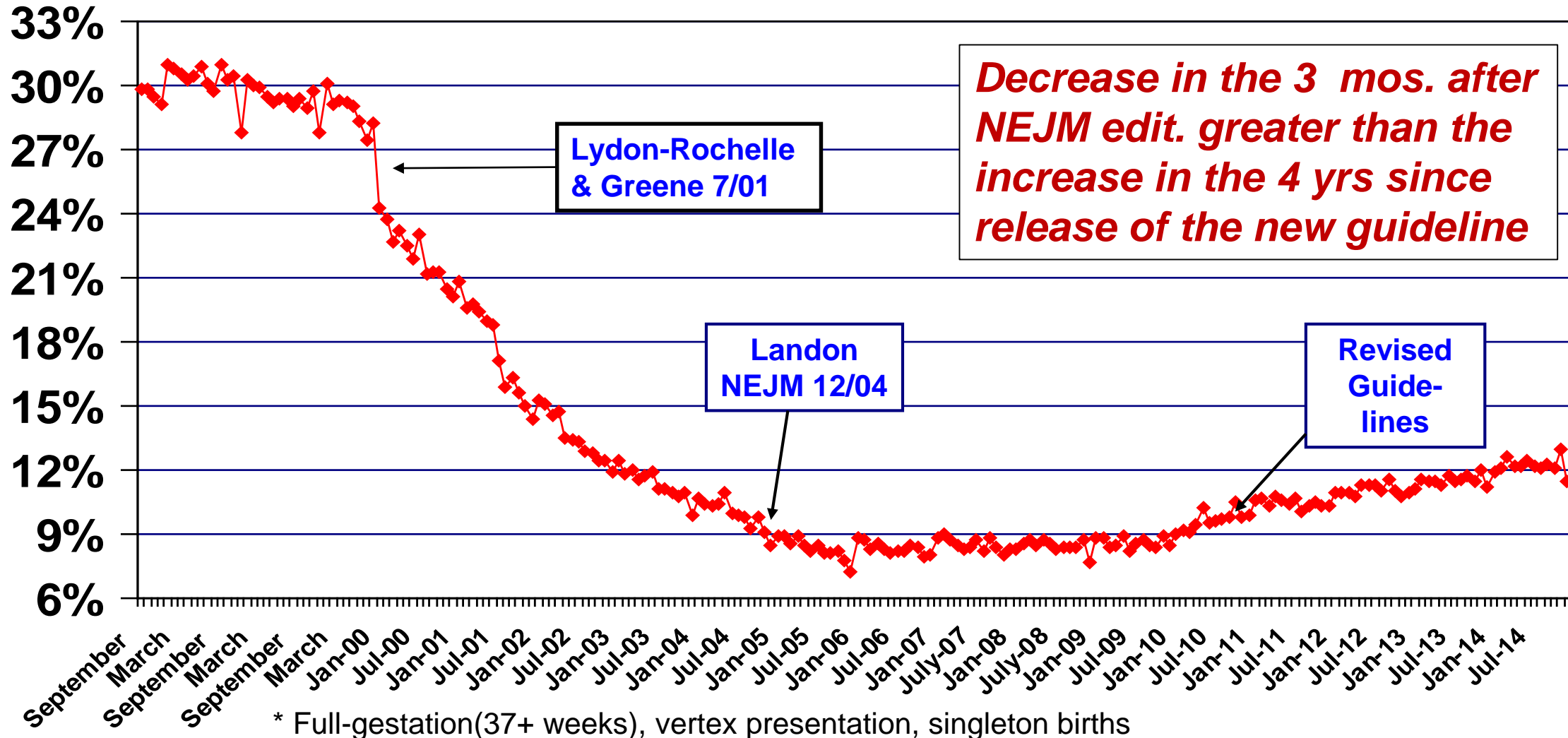
### **Vaginal Birth After Previous Cesarean Delivery**

#### **Summary of Recommendations**

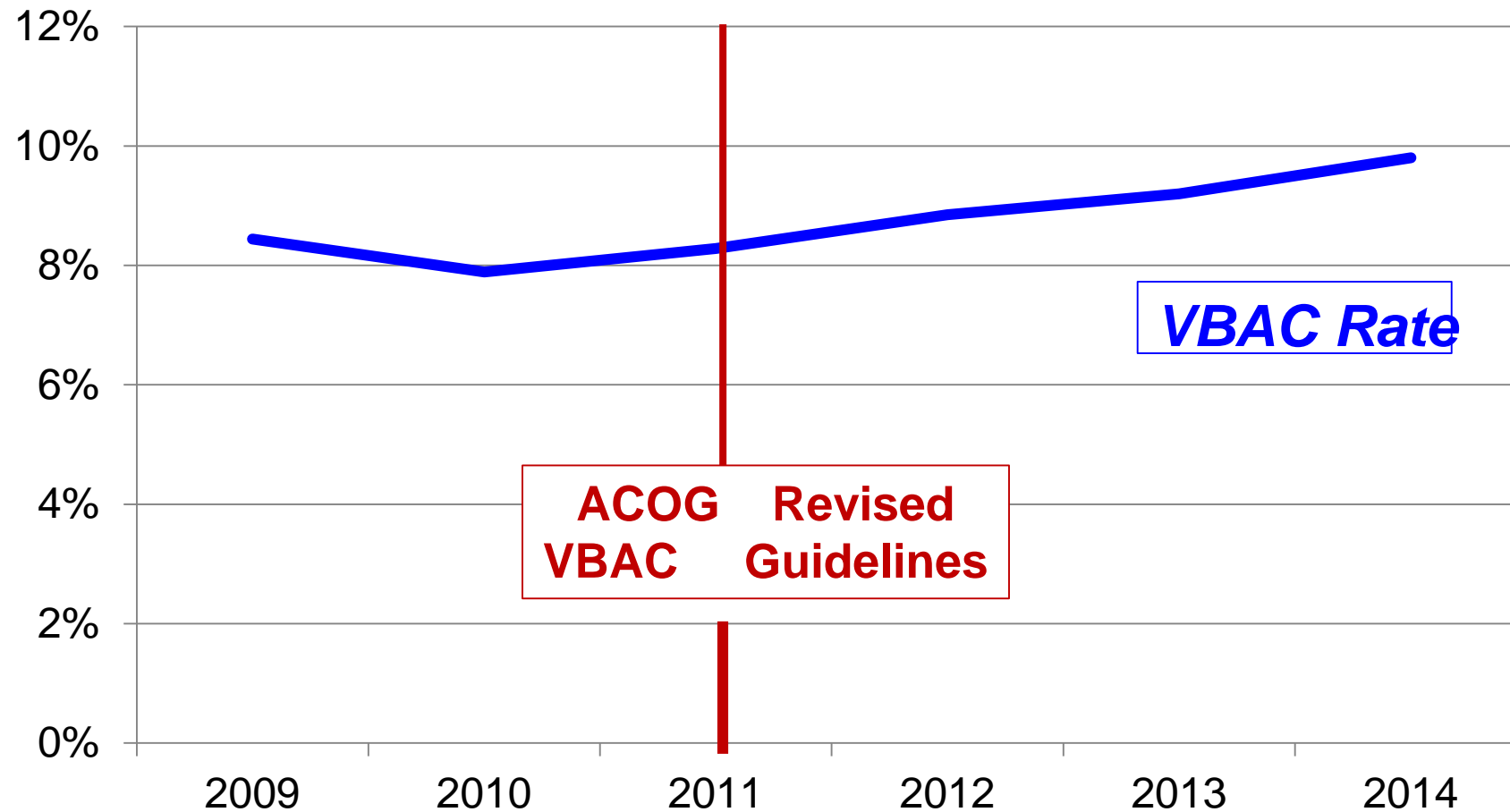
*The following recommendations are based on good and consistent scientific evidence (Level A):*

***Most women with one previous CD with a low-transverse incision are  
candidates for and should be counseled about VBAC and offered TOLAC.***

# % VBAC Lower Risk\* Mothers, U.S., Monthly Rates, 2000-2014



# VBAC Rate Low Risk Births\*, 28 States with revised Birth Certificate, 2009-2014



**\* Singleton, Vertex, Gest Age 37+ weeks, 1 cesarean.**

**If ACOG puts out new  
guidelines, why so little  
effect?**

**Try asking mothers**



## Mothers' Interest in and Access to VBACs

| Base: had cesarean in the past and for most recent birth       | LTM I<br>2000-02 | LTM II<br>2005 | LTM III<br>2011-12 |
|--|------------------|----------------|--------------------|
| Was interested in the option of a vaginal birth after cesarean | n.a.             | 45%            | 48%                |
| Did not have the option of a vaginal birth, or VBAC            | 42%              | 52%            | 56%                |

**New VBAC Guidelines**

# U.S. Mothers Report of Experience Seeking a VBAC, 2000, 2005, 2012

| <i>Mother had cesarean in the past, and did not have the option of a VBAC for recent birth.</i> | LTM I<br>2000-02 | LTM II 2005 | LTM III<br>2011-12 |
|---|------------------|-------------|--------------------|
| <i>Did not have the option because caregiver was unwilling to do a VBAC</i>                     | 36%              | 45%         | 24%                |
| <i>Did not have the option because hospital was unwilling to allow a VBAC</i>                   | 12%              | 23%         | 15%                |
| <b><i>Medical reason unrelated to prior cesarean</i></b>  | <b>38%</b>       | <b>20%</b>  | <b>45%</b>         |

Source: *Listening to Mothers 3.*

**New VBAC Guidelines**

**4. Opportunity for  
Shared decision making  
(Induction and repeat  
cesareans)**

# Decision-Making Process Reported by Medicare Patients Who Had Coronary Artery Stenting or Surgery for Prostate Cancer

*Floyd J. Fowler Jr PhD<sup>1,2</sup>, Patricia M. Gallagher, PhD<sup>1</sup>, Julie P. W. Bynum, MD<sup>3,7</sup>, Michael J. Barry, MD<sup>2,4</sup>, F. Leslie Lucas, PhD<sup>5</sup>, and Jonathan S. Skinner, PhD<sup>6,7</sup>*

<sup>1</sup>Center for Survey Research, University of Massachusetts Boston, Boston, MA, USA; <sup>2</sup>Foundation for Informed Medical Decision Making, Boston, MA, USA; <sup>3</sup>Department of General Internal Medicine, Dartmouth Hitchcock Medical Center, Hanover, NH, USA; <sup>4</sup>General Medicine Division, Massachusetts General Hospital, Boston, MA, USA; <sup>5</sup>Center for Outcomes Research, Maine Medical Center, Portland, ME, USA; <sup>6</sup>Department of Economics, Dartmouth College, Hanover, NH, USA; <sup>7</sup>The Dartmouth Institute, Dartmouth College, Hanover, NH, USA.

## Original Investigation

# How Patient Centered Are Medical Decisions? Results of a National Survey

Floyd J. Fowler Jr, PhD; Bethany S. Gerstein, BA; Michael J. Barry, MD

# Patient Centered care requires....

*“..... a partnership between the provider and the patient with shared power and responsibility in decision making and care management [and] giving the patient access to understandable information and decision support tools that help patients manage their health and navigate the health care delivery system.”*

# Mothers' experiences of making labor & birth decisions

**Induction mentioned because baby might be getting quite large.  $n=163$**

|  |                 |
|--|-----------------|
| How much did you and your maternity care provider talk about the reasons you <u>might want</u> to have an induction (% “some” or “a lot”)?     | <b>61</b>       |
| How much did you and your maternity care provider talk about the reasons you <u>might not want</u> to have an induction (% “some” or “a lot”)? | <b>38</b>       |
| Did your maternity care provider explain that there were <u>choices</u> (% yes)?   | <b>82</b>       |
| Did your maternity care <u>provider ask you</u> whether or not you <u>wanted</u> to have... (% yes)?   | <b>77</b>       |
| Did maternity care provider express opinion about whether or not you should have induction?  | <b>81</b>       |
| Did your maternity care provider think you should or should <u>not</u> have (% should have induction among those who expressed opinion)?       | <b>80</b>       |
| Who made the final decision whether or not to have induction?(% mother's /% MCP/% shared)?   | <b>46/20/34</b> |
| If you knew then what you know now, do you think you would make the same decision about having ... (% definitely yes)?                         | <b>64</b>       |

# Mothers' experiences of making labor & birth decisions

## Repeat cesarean or VBAC decision for mothers with 1 or 2 prior CS. N= 321

|  |          |
|--|----------|
| How much did you and your maternity care provider talk about the reasons you <u>might want</u> to have an induction (% “some” or “a lot”)?     | 61       |
| How much did you and your maternity care provider talk about the reasons <u>you might not want</u> to have an induction (% “some” or “a lot”)? | 38       |
| Did your maternity care provider explain that there <u>were choices</u> (% yes)?   | 82       |
| Did your maternity care <u>provider ask you</u> whether or not you <u>wanted</u> to have... (% yes)?   | 77       |
| Did maternity care provider express opinion about whether or not you should have induction?  | 81       |
| Did your maternity care provider think you should or should <u>not</u> have (% should have induction among those who expressed opinion)?       | 80       |
| Who made the final decision whether or not to have induction?(% mother's /% MCP/% shared)?   | 46/20/34 |
| If you knew then what you know now, do you think you would make the same decision about having ... (% definitely yes)?                         | 64       |

***If this is a shared process how  
did so many mothers end up  
with the intervention?***



# Mothers' reported experience of pressure to have interventions, by whether mothers had intervention

| Intervention     | Experience of pressure among mothers who did not have intervention* | Experience of pressure among mothers who had intervention |
|------------------|---|---|
| Labor induction  | 8%  | 25%   |
| Primary cesarean | 7%  | 28%   |
| Repeat cesarean  | 28%*  | 22%   |

\* Mothers having a VBAC

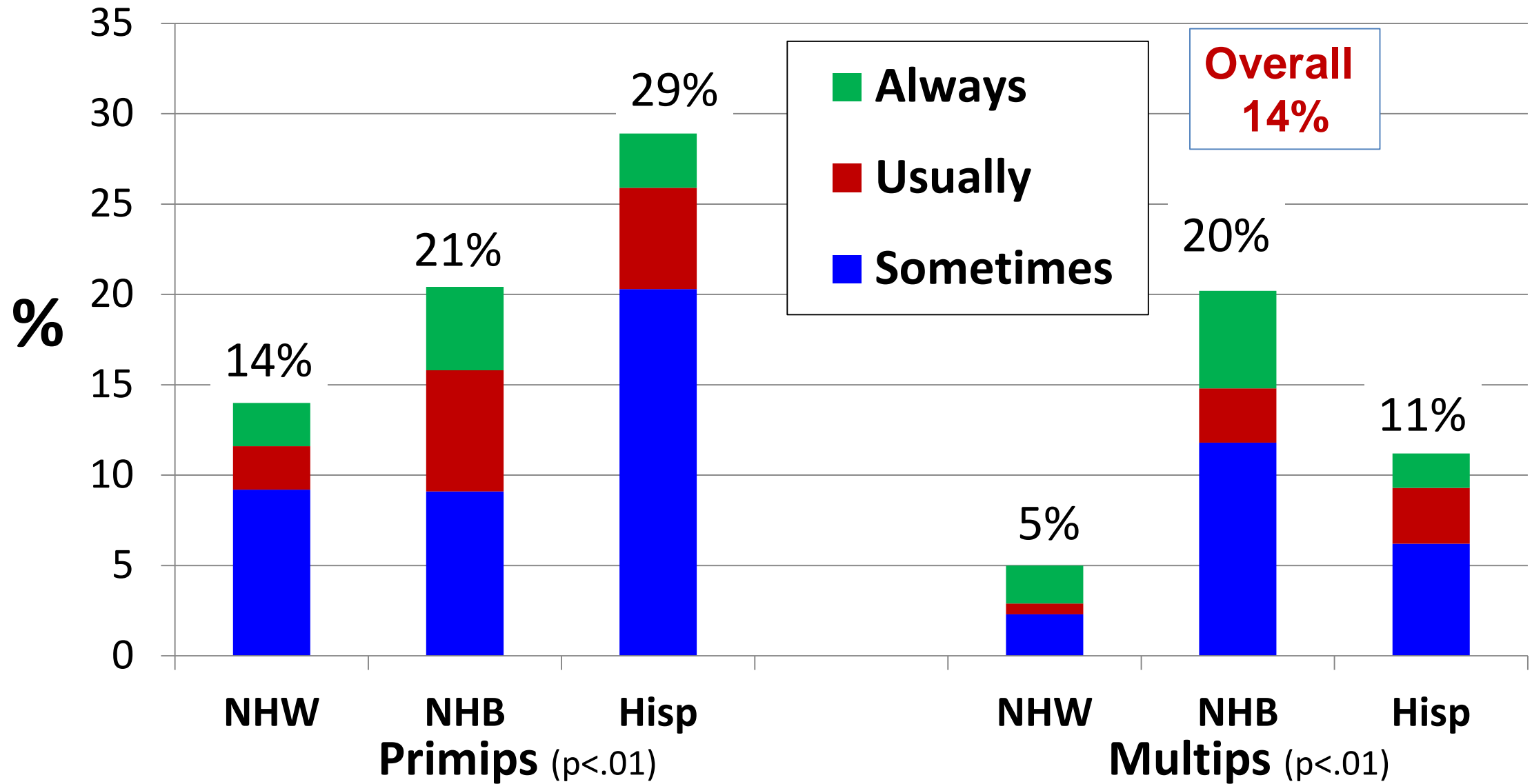
## **5. Mothers' Reported Experiences with Discrimination**

# Mothers' experience of discrimination during childbirth hospital stay

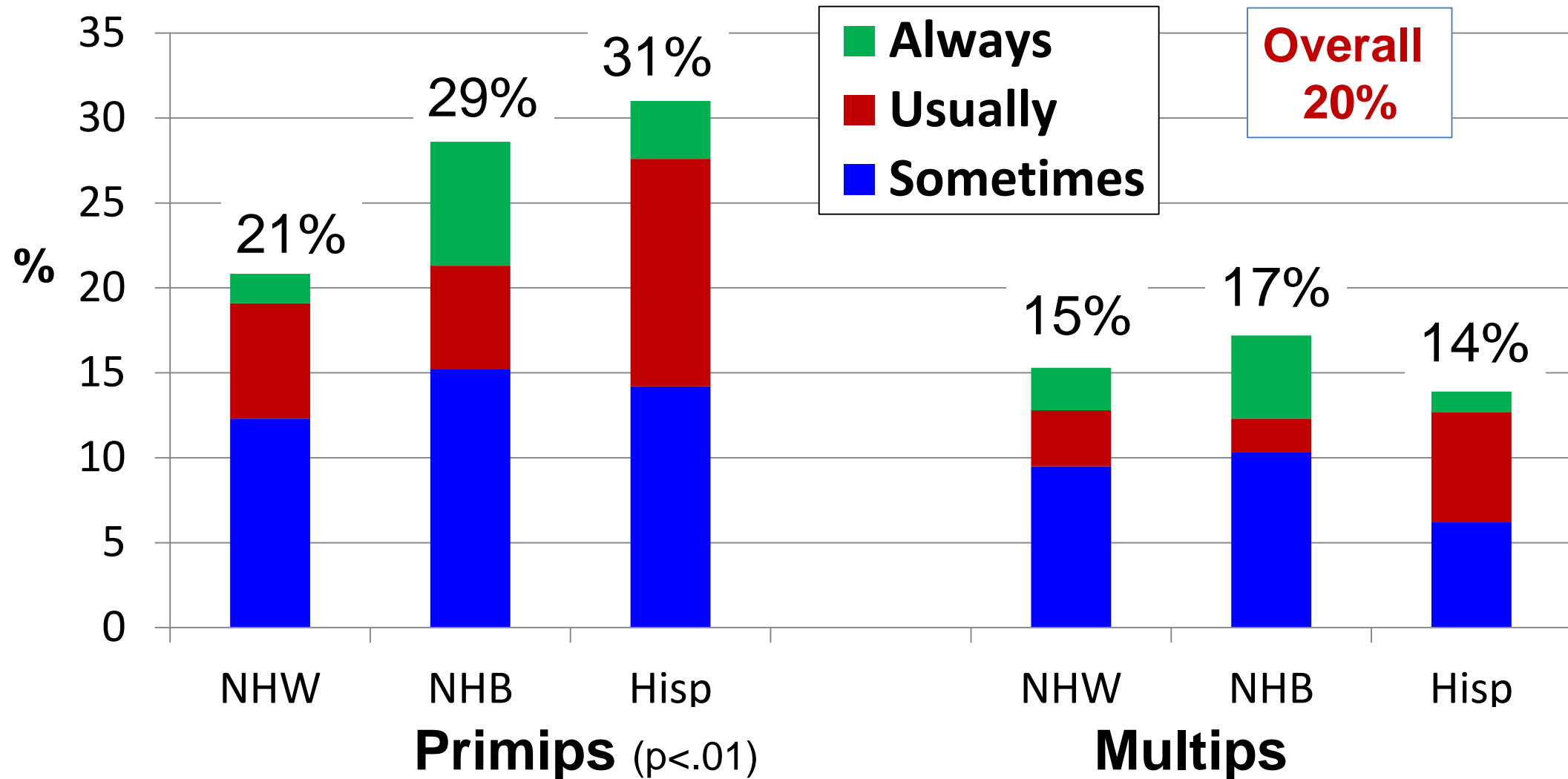
*During your recent hospital stay when you had your baby, how often were you treated poorly because of...?:*

| Base: all mothers<br><i>n</i> =2400   | Never | Sometimes | Usually | Always | At Least<br>"Some" |
|---|-------|-----------|---------|--------|--------------------|
| Your race, ethnicity, cultural background, or language                                      | 86%   | 8%        | 3%      | 3%     | <b>14%</b>         |
| Your health insurance situation   | 84%   | 8%        | 5%      | 4%     | <b>17%</b>         |
| A difference of opinion with your caregivers about the right care for yourself or your baby | 80%   | 11%       | 6%      | 3%     | <b>20%</b>         |

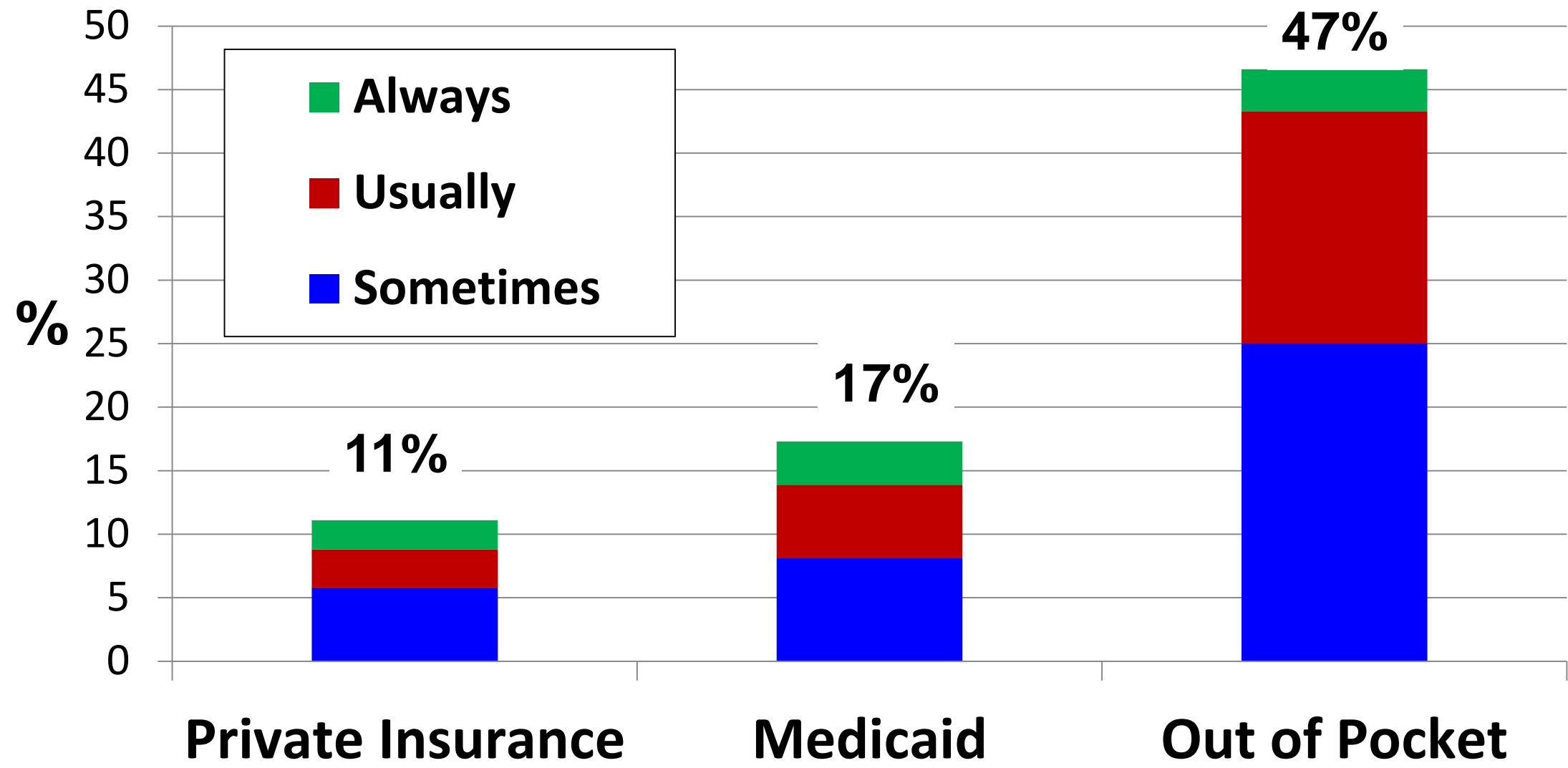
***During your recent hospital stay when you had your baby, how often were you treated poorly because of  
your race, ethnicity, cultural background or language?***



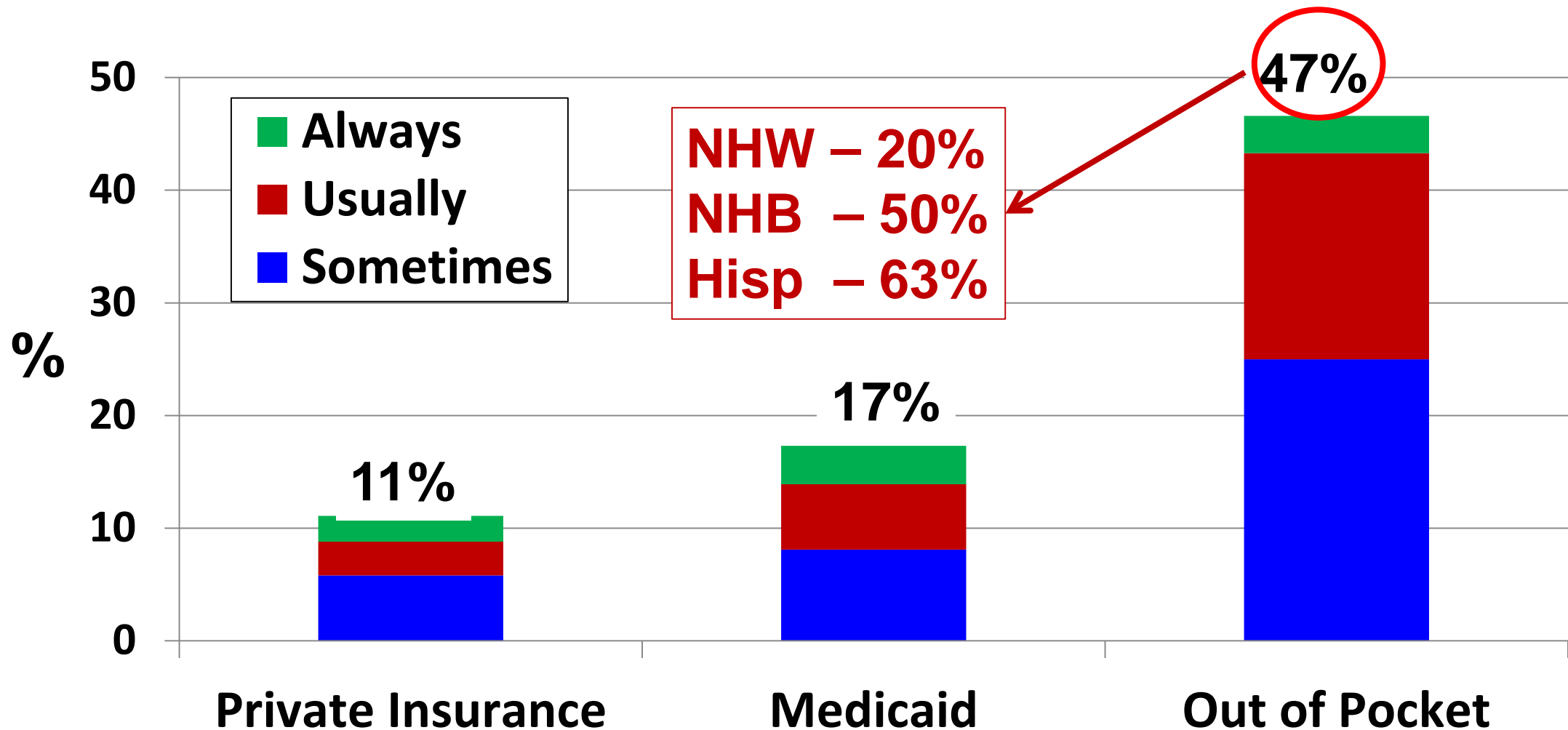
**.....treated poorly because of a difference of opinion with your caregivers about the right care for yourself or your baby?**



*..... treated poorly because of  
your health insurance situation?*



*.....treated poorly because of  
your health insurance situation?*



**Bonus Insight!!**

**Trends in U.S. Mothers  
Attitudes toward  
Intervention in Birth**



# Trends in Mothers Attitudes toward intervention in birth

| <i>Birth is a process that should not be interfered with unless medically necessary</i> | LTM I<br>2000-02<br><i>n=1583</i> | LTM II 2005<br><i>n=1573</i> | LTM III<br>2011-12<br><i>n=2400</i> |
|---|-----------------------------------|------------------------------|-------------------------------------|
| <b>Disagree strongly or somewhat</b>  | 31%                               | 24%                          | 16%                                 |
| <b>Neither agree nor disagree</b>   | 24%                               | 25%                          | 26%                                 |
| <b>Agree somewhat or strongly</b>   | 45%                               | 50%                          | 58%                                 |

**NOTE: CA LtM ~ 74% agreement**

[www.birthbythenumbers.org](http://www.birthbythenumbers.org)



**Birth by the Numbers Team**

**8 doulas**

