

Cesareas en el Mundo

Eugene Declercq, PhD

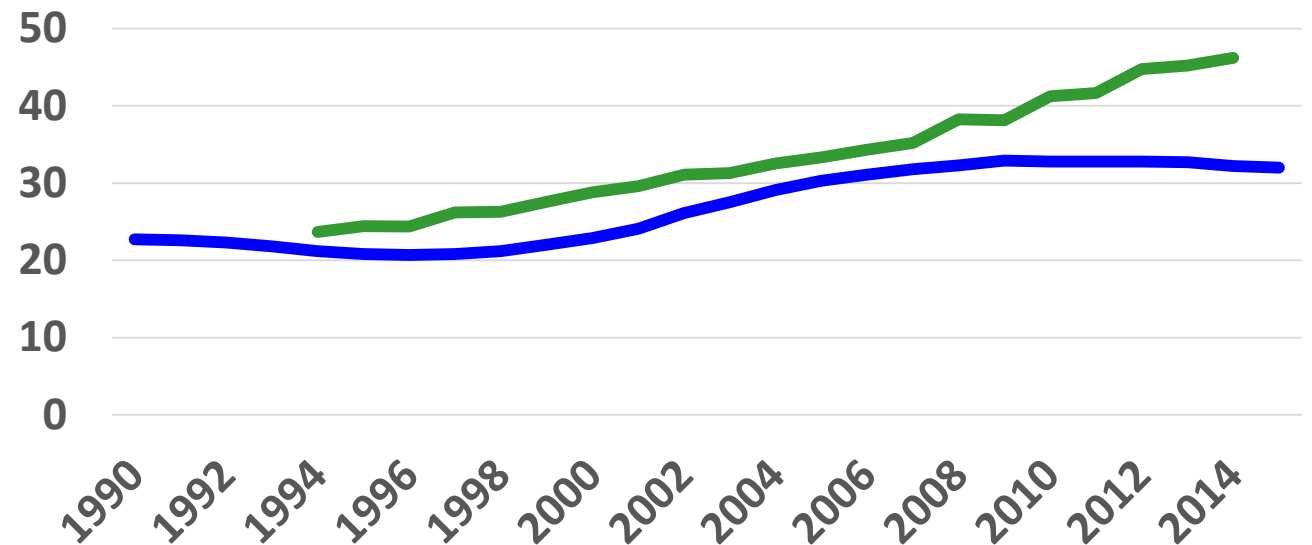
Boston University School of Public Health

3rd Foro Regional de la asociacion

Mexicana de Parteria

Monterrey Mexico

April 28, 2017



Collaborators





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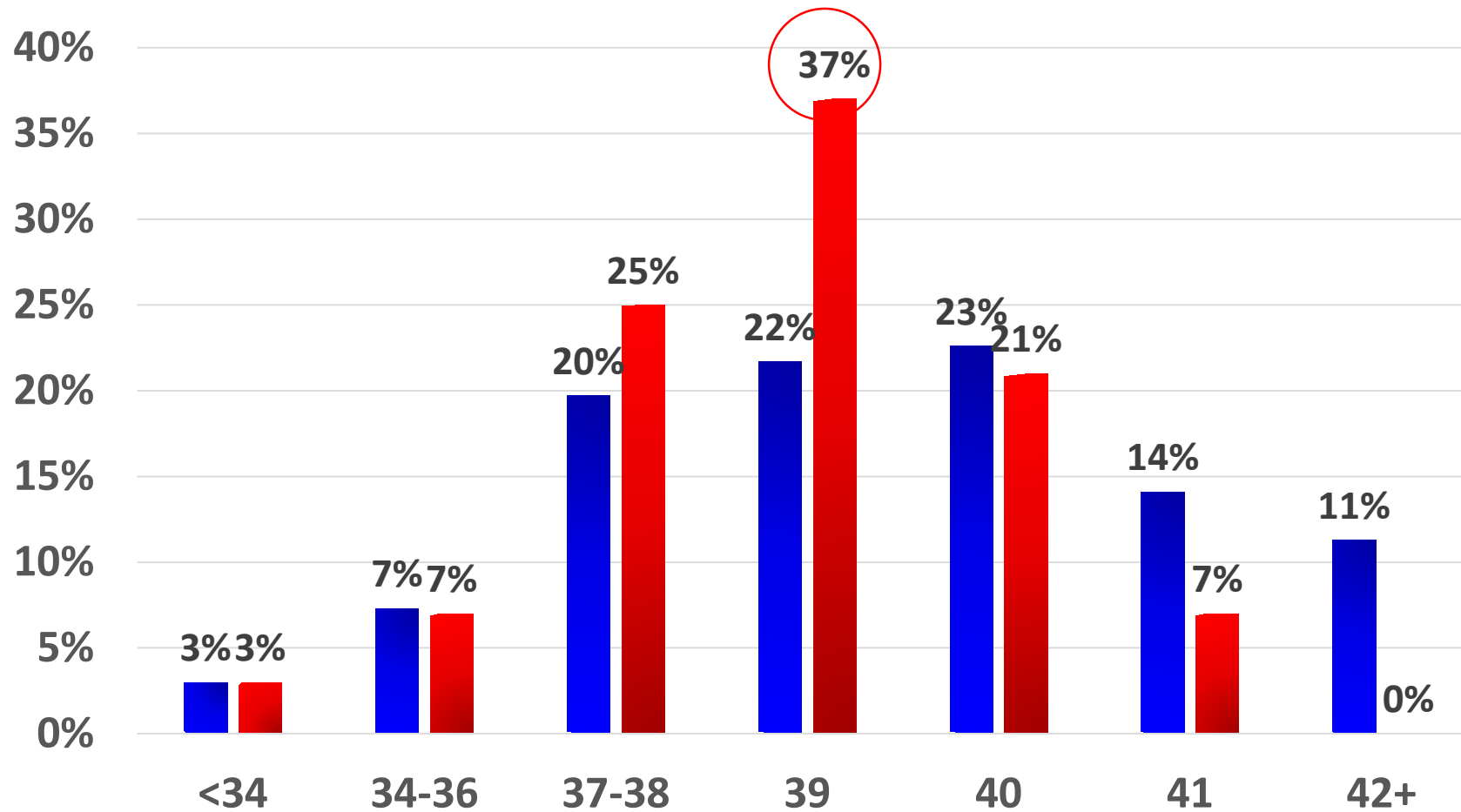
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Thank you for inviting me

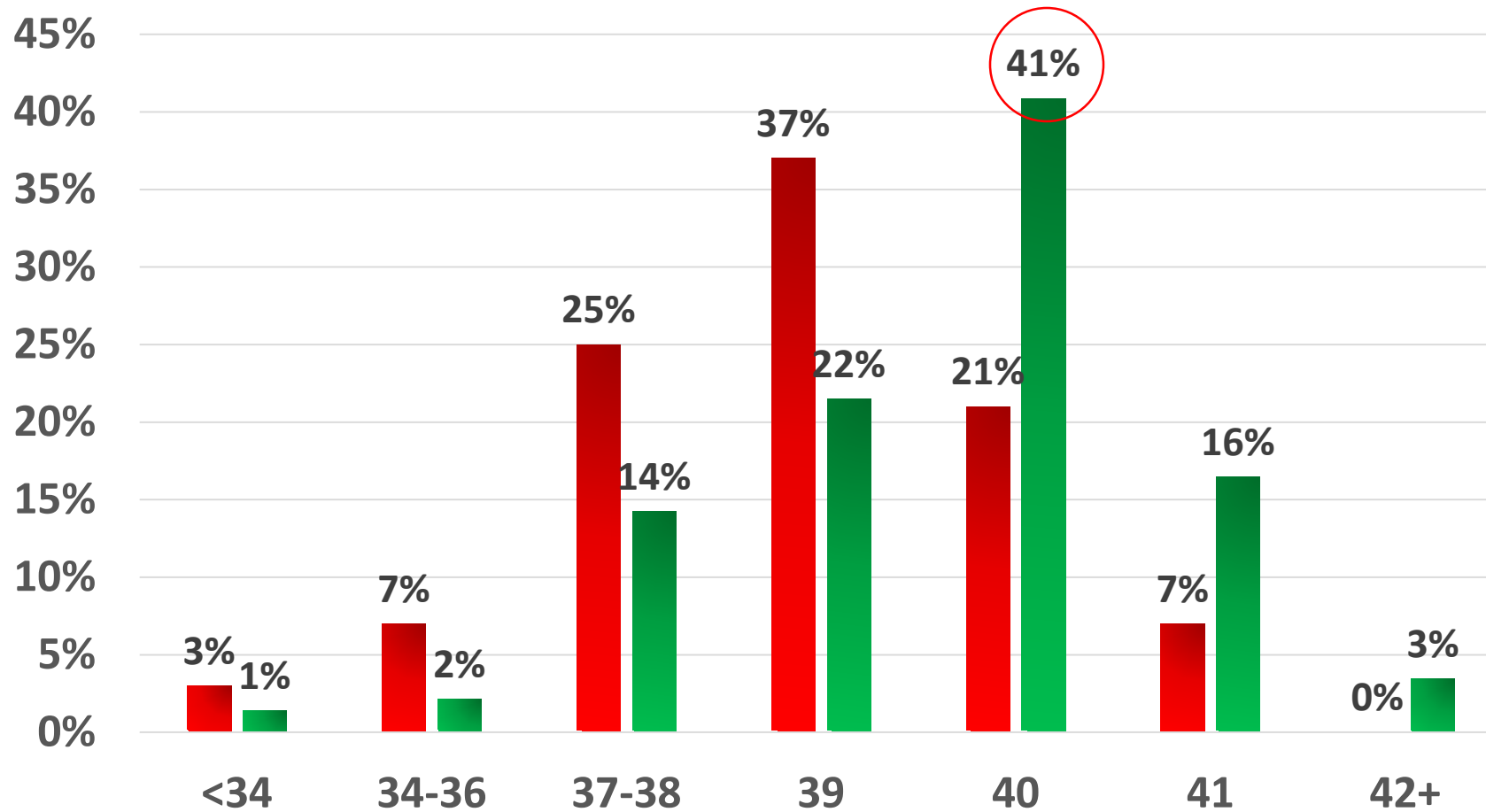
- Cris Alonso
- Samara Ferrara
- Lupita Zentano
- and one other person.....

***What's the impact of
intervention on
maternity care?***

Gestational Age, U.S. All Births, 1990, 2015



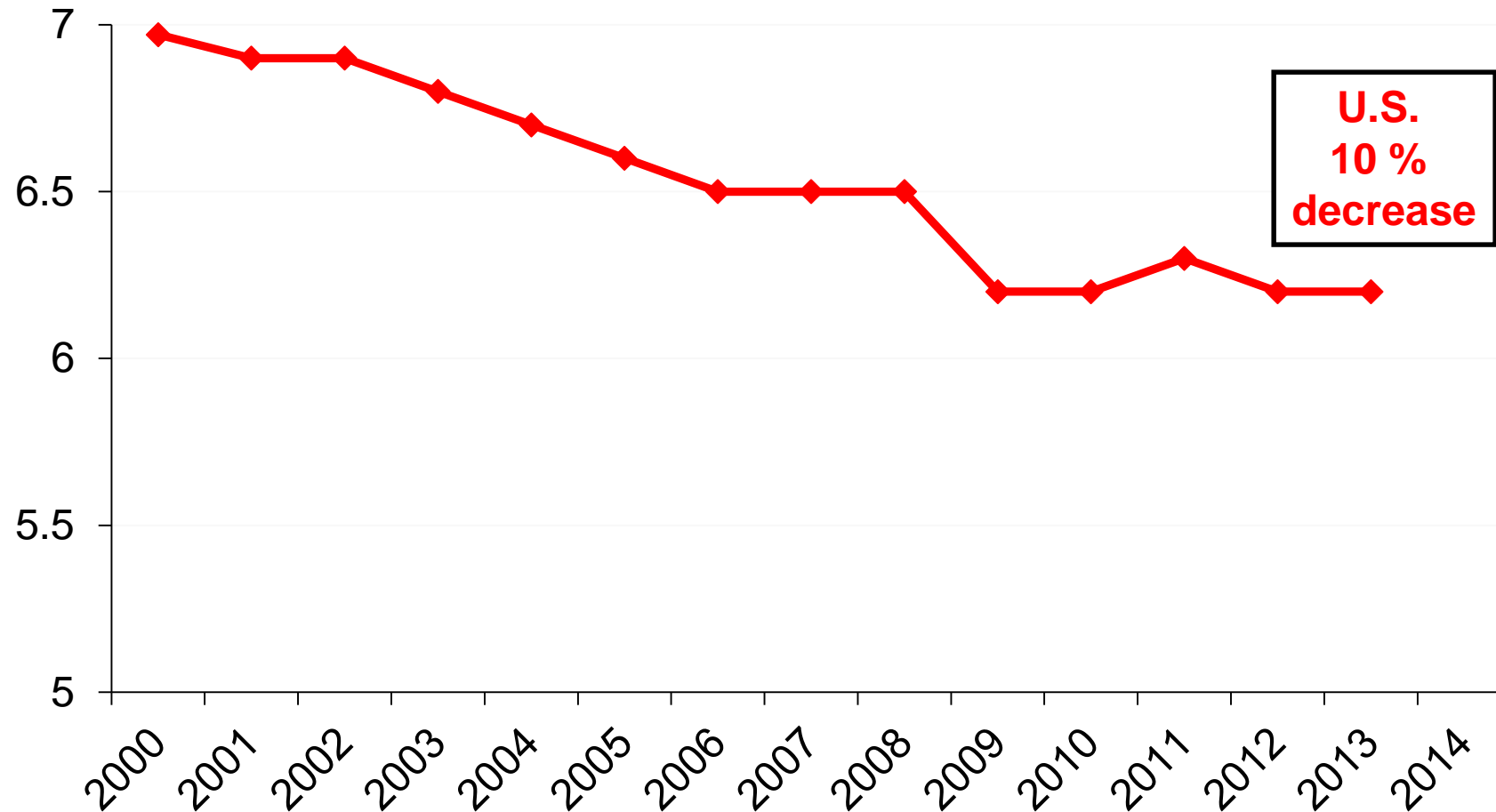
Gestational Age, U.S. All Births & Planned Home Births that Occur at Home, 2015



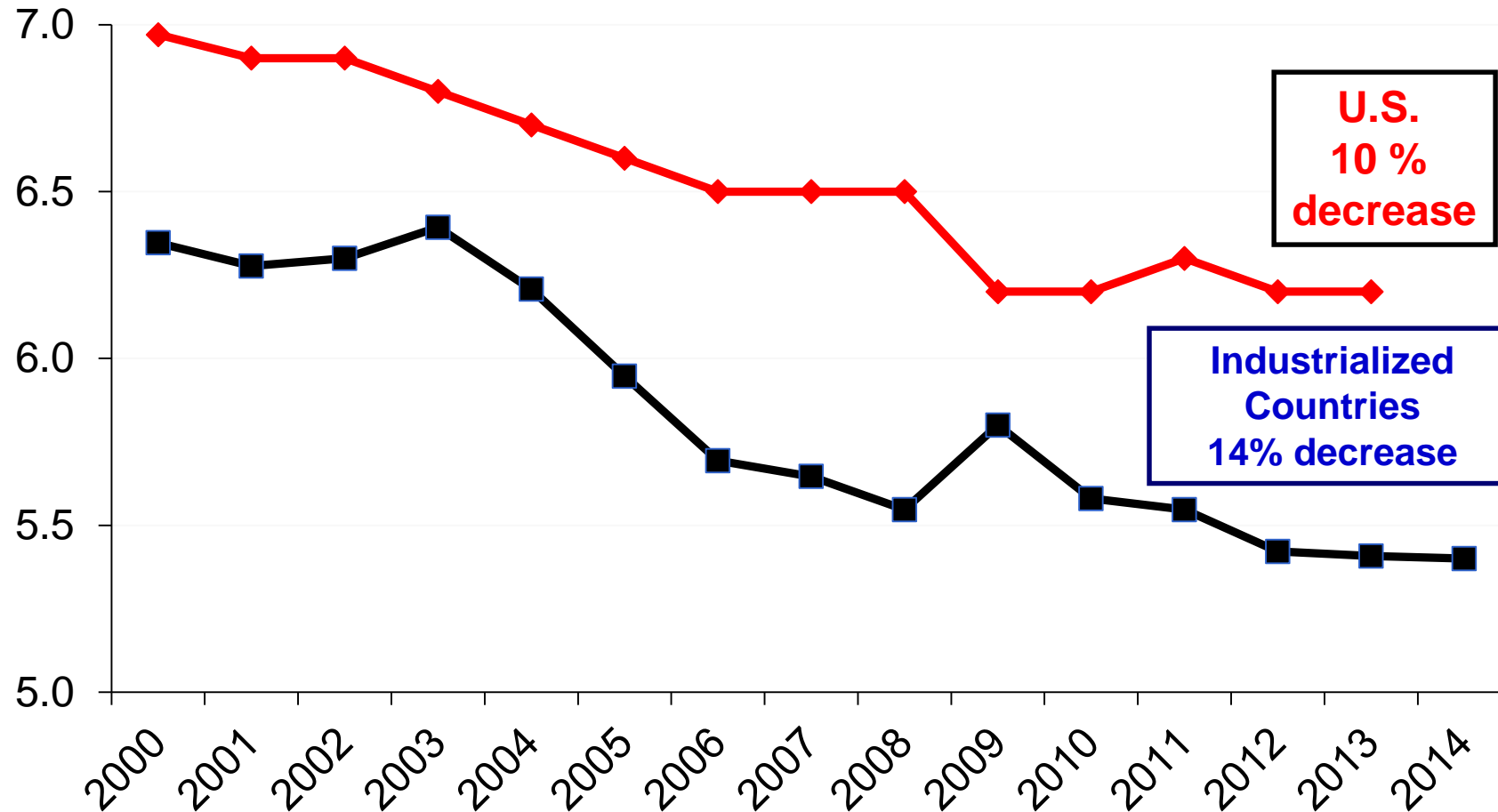
**This change could be entirely
worthwhile if it improved
outcomes.**

**Much of the focus of the change
was preventing stillbirths.**

U.S. Perinatal Mortality Rates, 2000-2014



Perinatal Mortality Rates, 2000-2014 , U.S., & Ave. for Industrialized Countries*

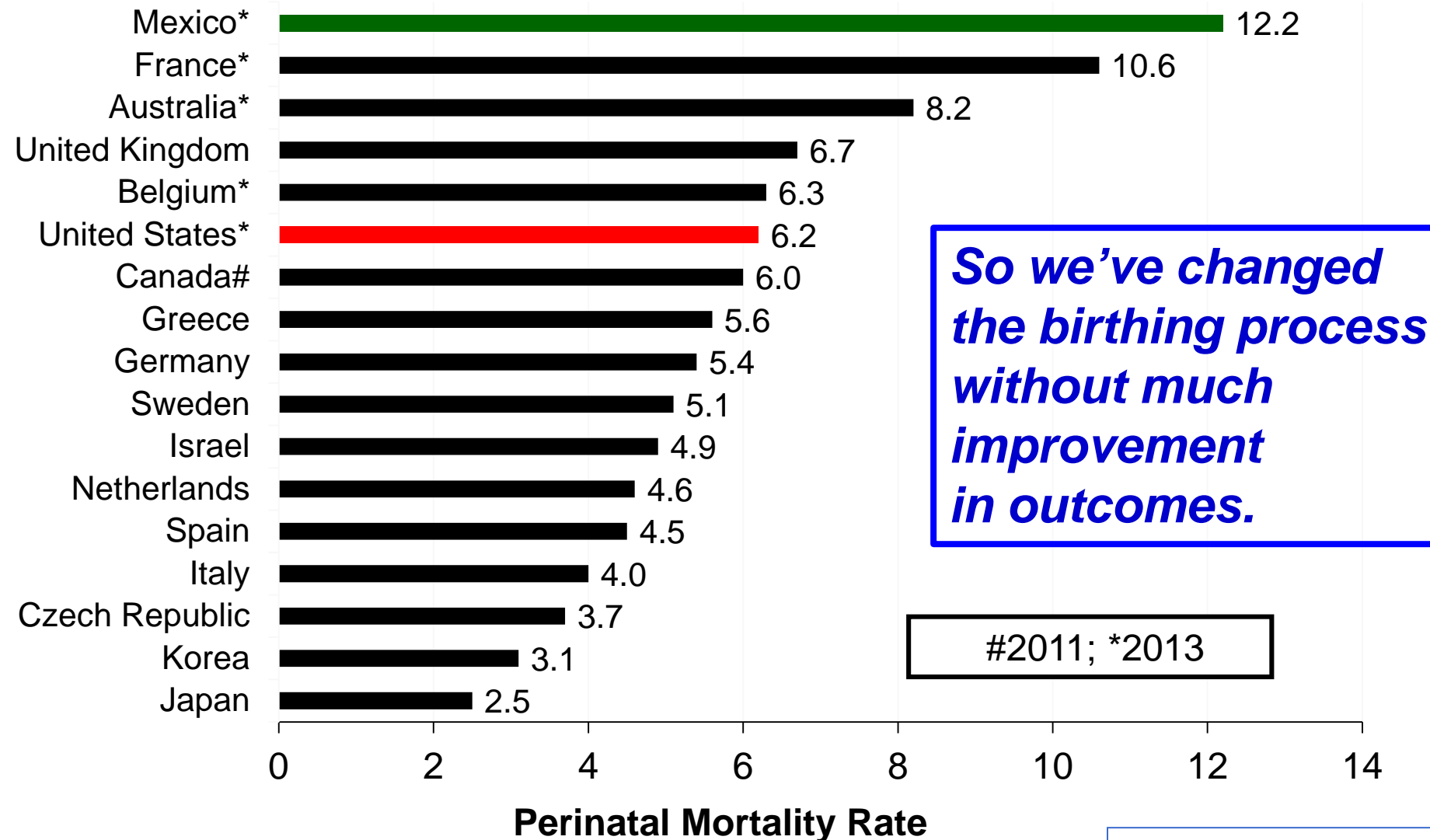


* Countries with 100,000+ births (2014): Australia, Belgium, Canada, Czech Republic, France, Germany, Greece, Israel, Italy, Japan, Netherlands, S. Korea, Spain, Sweden, United Kingdom

Sources: OECD Health Data 2016; NCHS. 2015. *Fetal & Perinatal Mortality, 2013*.

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Perinatal Mortality Rates (per 1,000 births), 2014, Industrialized Countries 100,000+ Births



How has intervention changed the nature of birth in Mexico?

2000



20.0 - 35.4

35.5 - 39.9

40.0 - 57.5

2006



20.0 - 35.4

35.5 - 39.9

40.0 - 57.5

2012

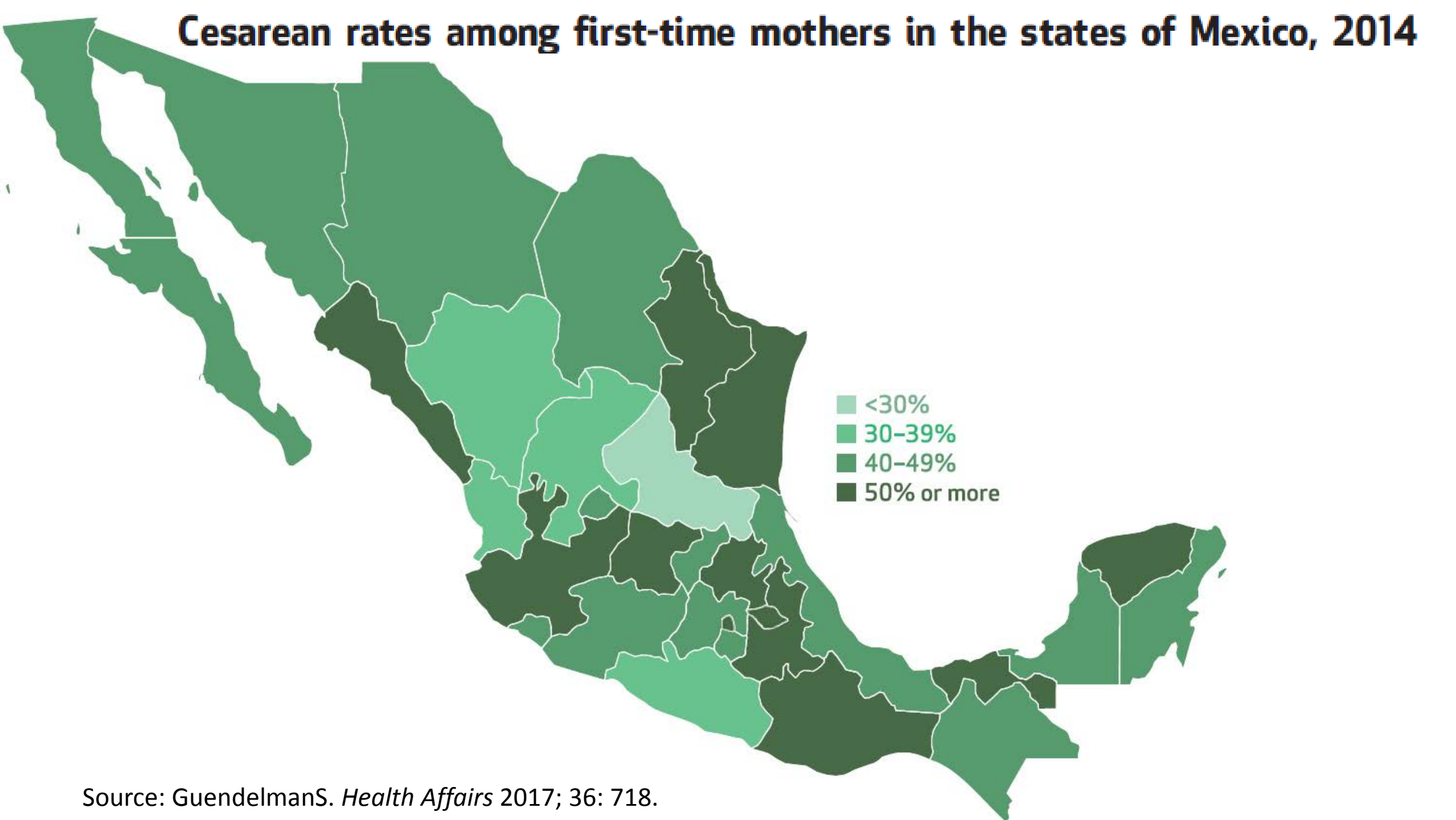


20.0 - 35.4

35.5 - 39.9

40.0 - 57.5

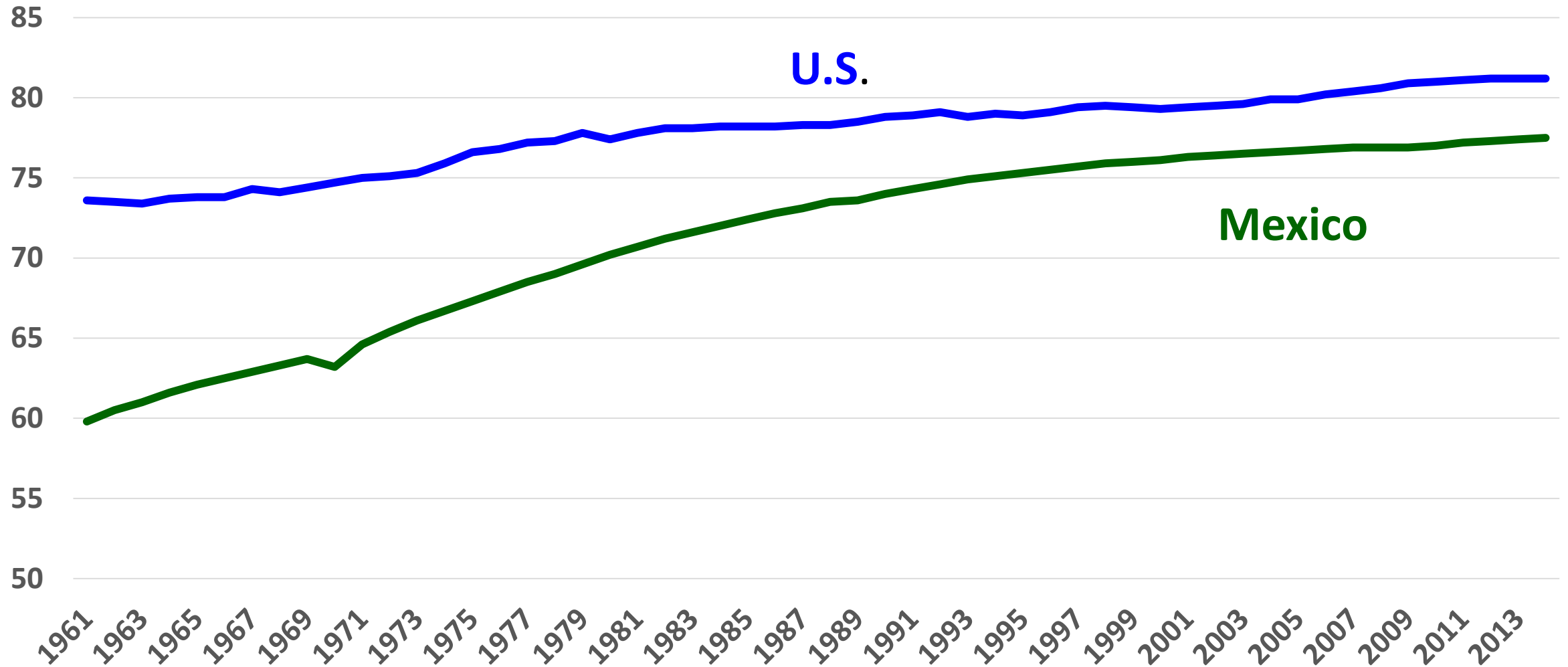
Cesarean rates among first-time mothers in the states of Mexico, 2014



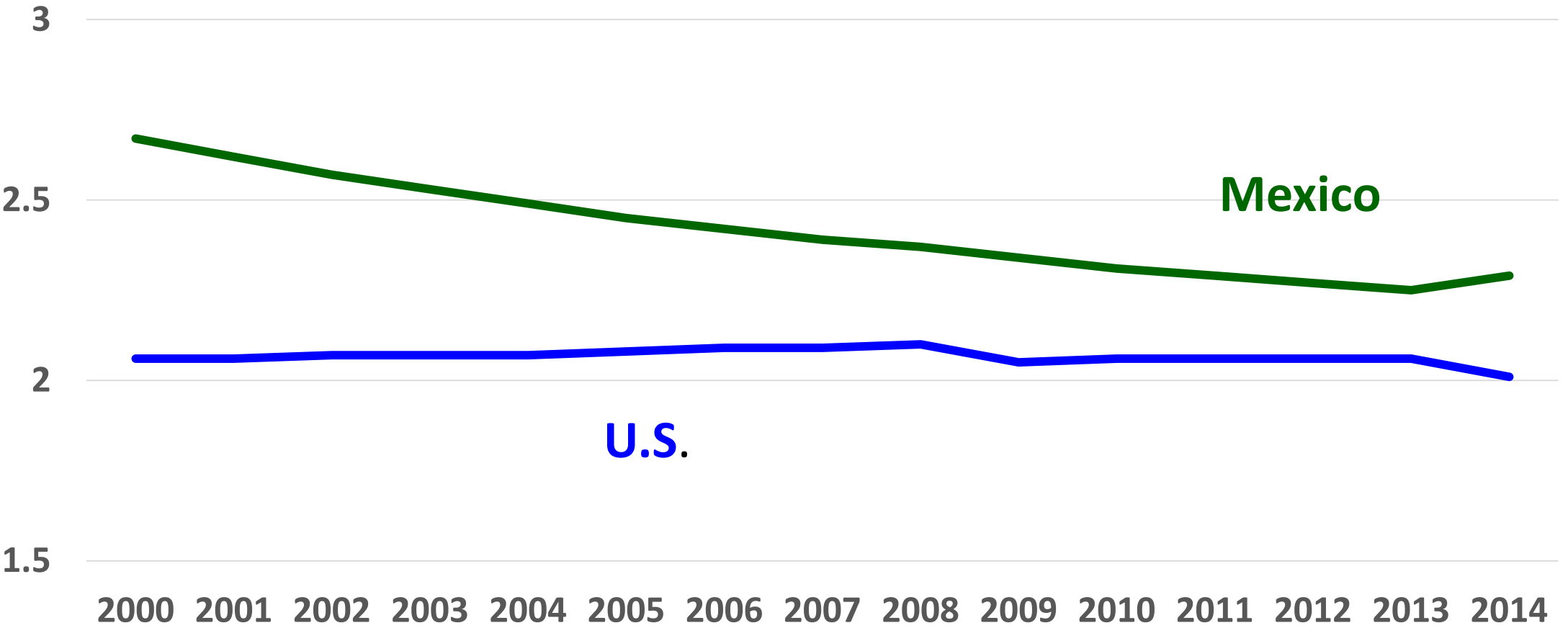
Source: Guendelman S. *Health Affairs* 2017; 36: 718.

Some basic comparisons between the U.S. and Mexico

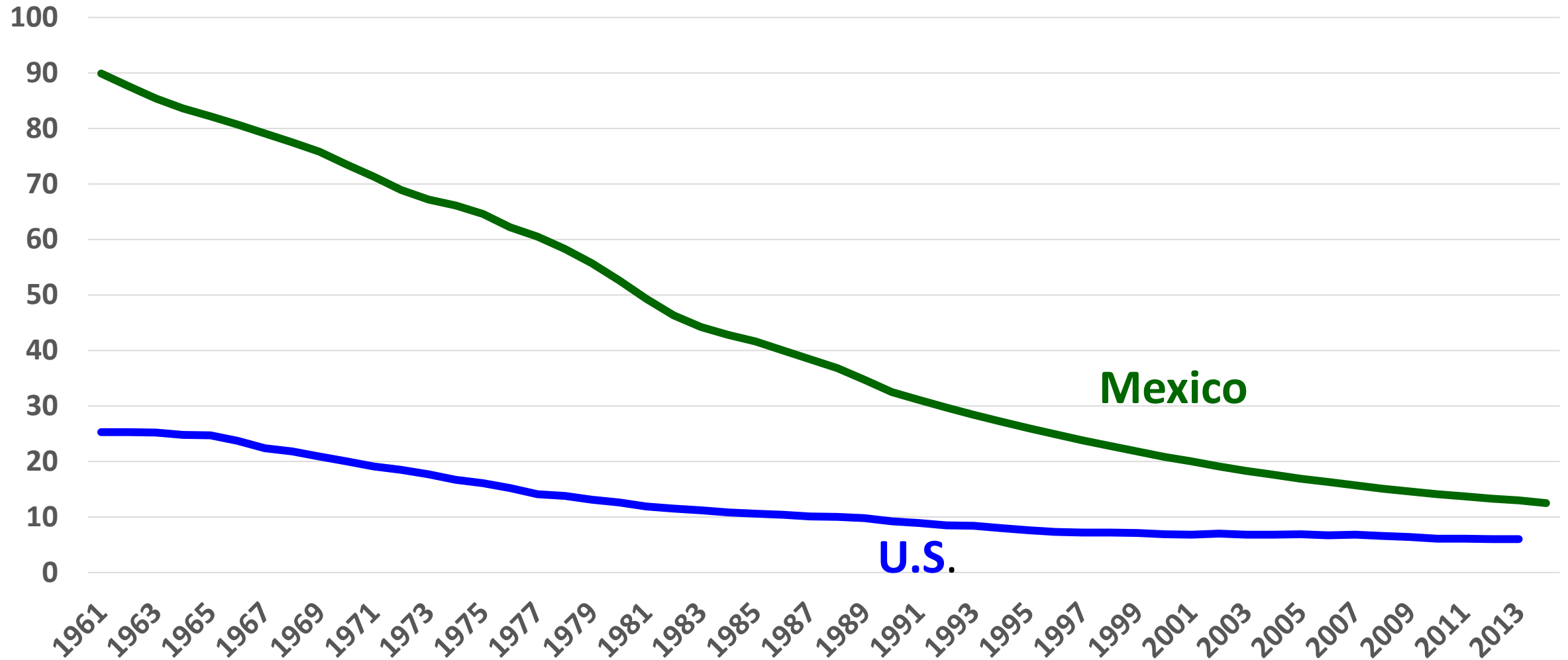
Female Life Expectancy, U.S. & Mexico, 1960-2014



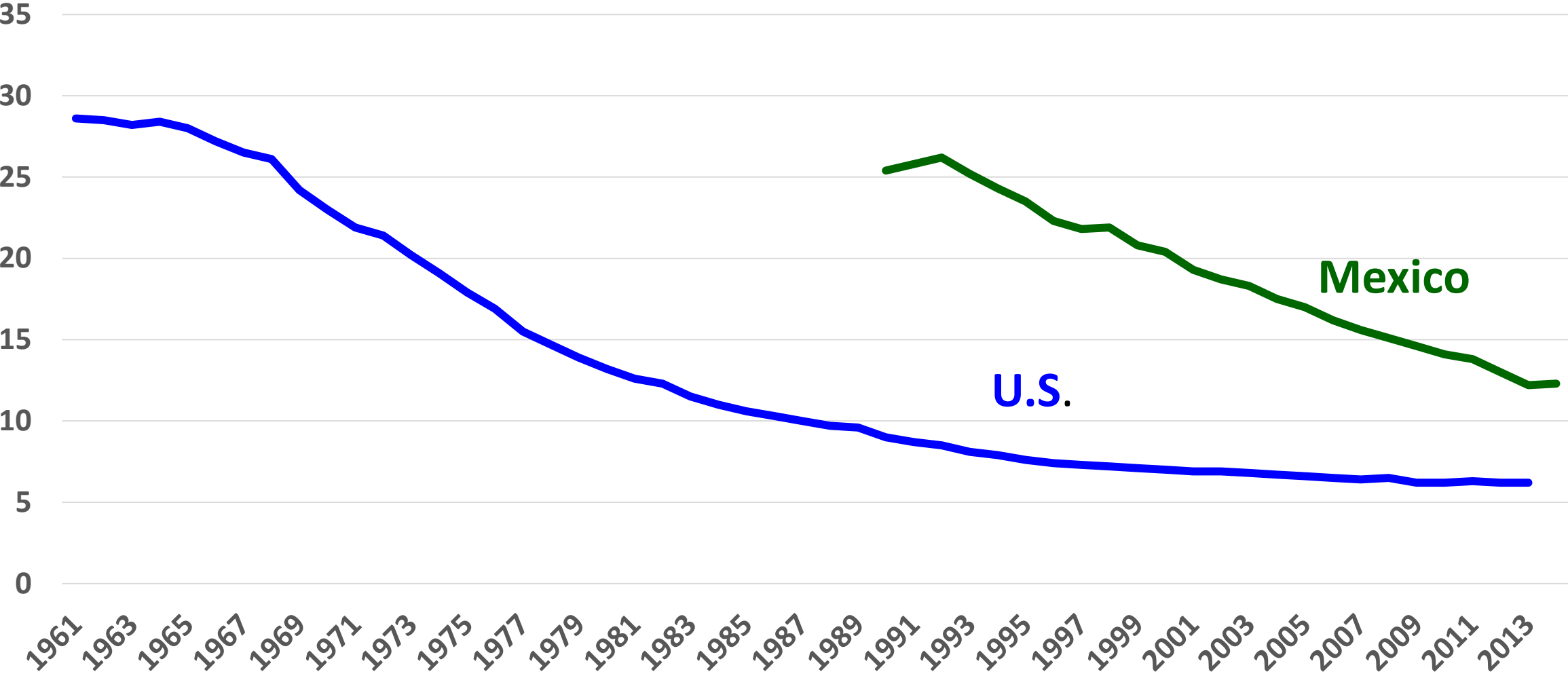
Fertility Rates, U.S. & Mexico, 2000-2015



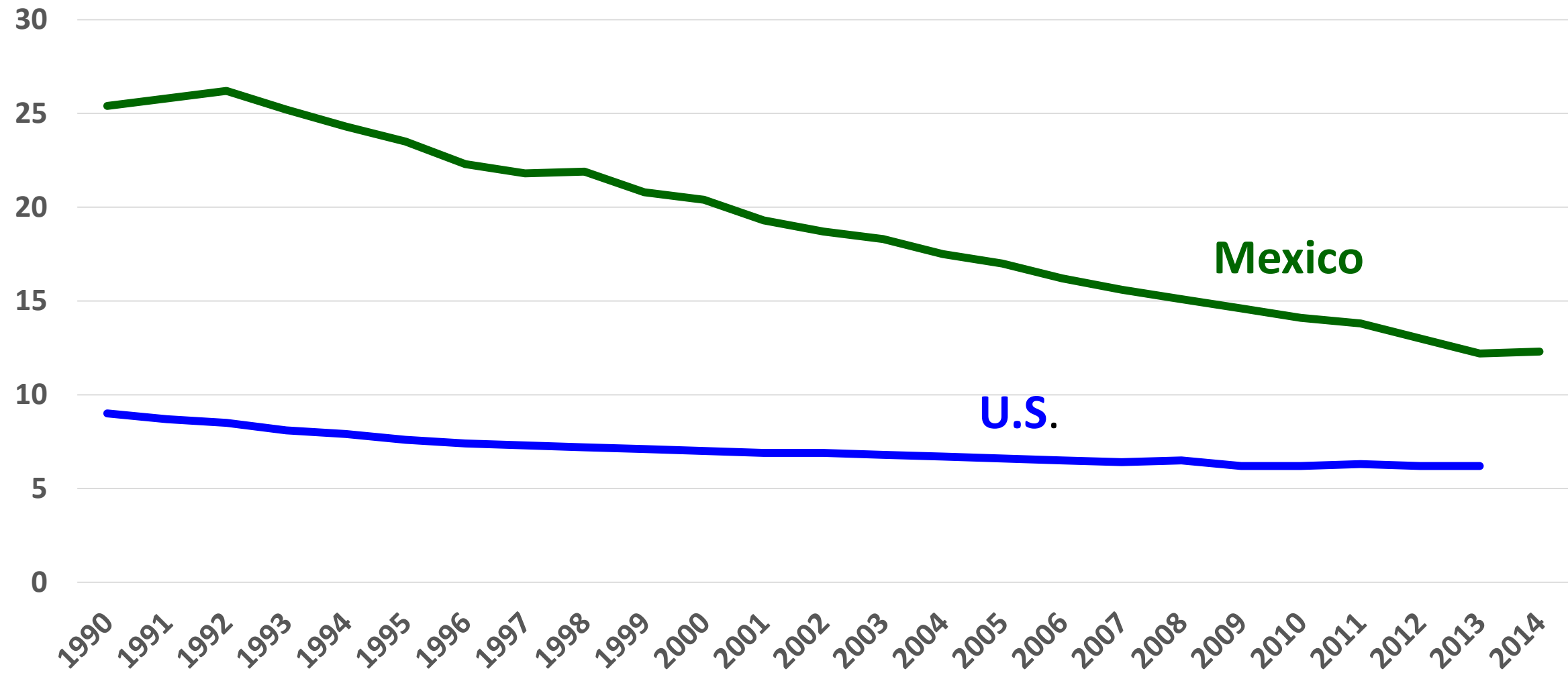
Infant Mortality Rate (per 1,000 births), U.S. & Mexico, 1960-2014



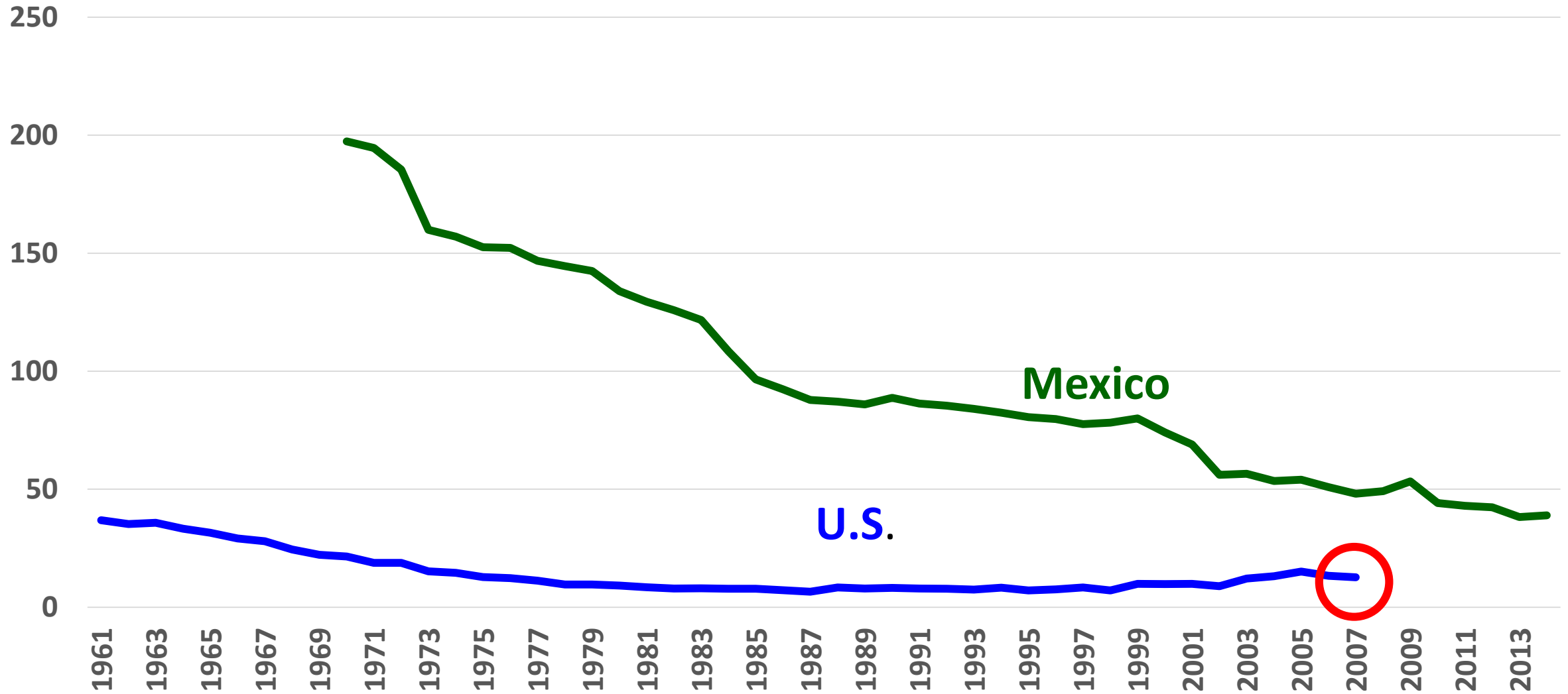
Perinatal Mortality Rate (per 1,000 births), U.S. & Mexico, 1960-2014



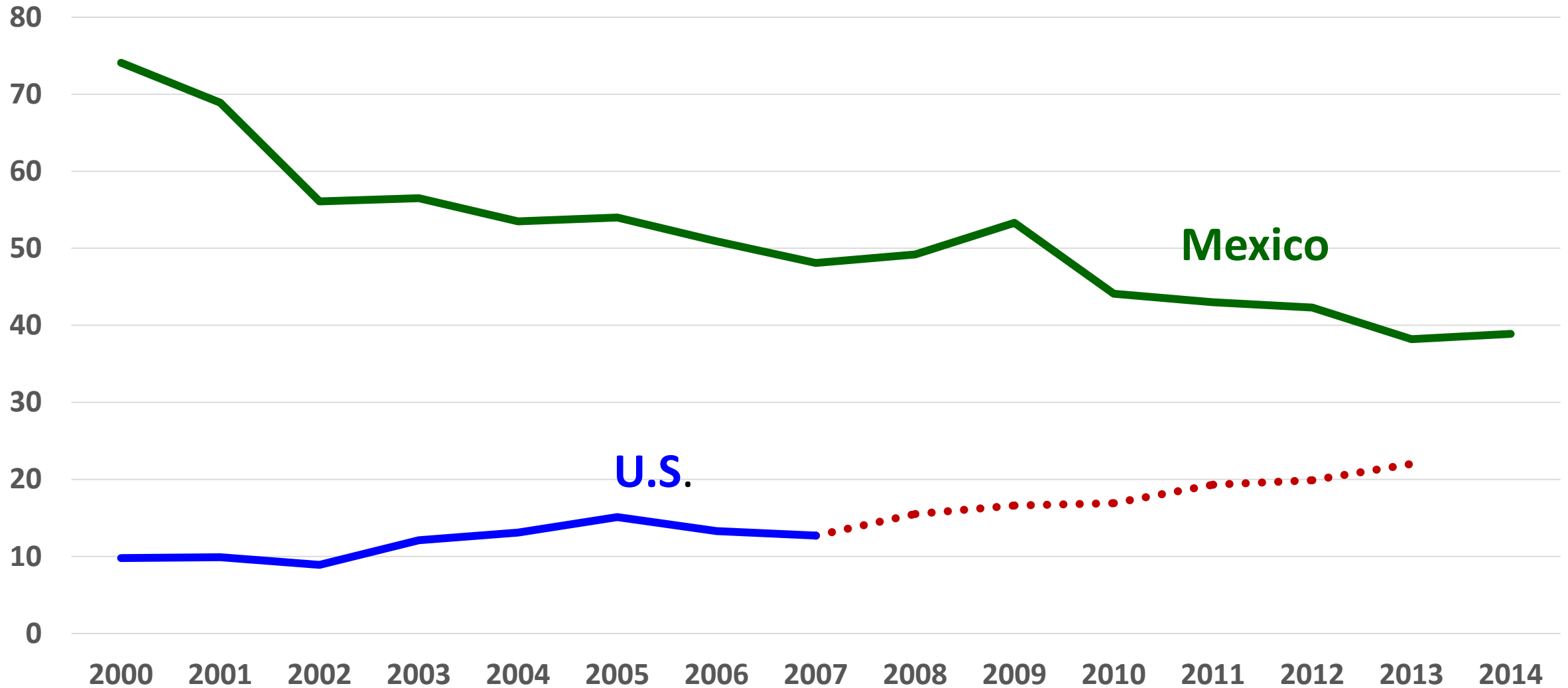
Perinatal Mortality Rate (per 1,000 births), U.S. & Mexico, 1990-2014



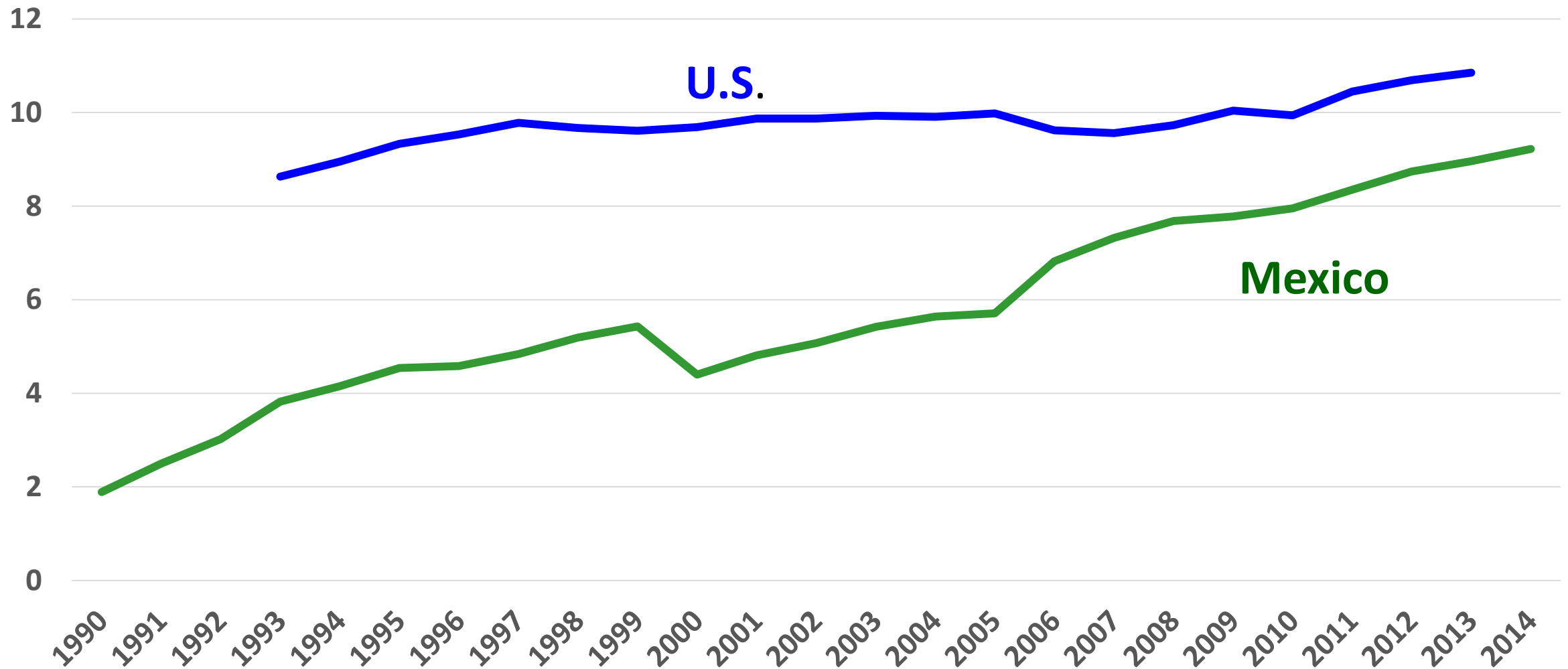
Maternal Mortality Ratio (per 100,000 births), U.S. & Mexico, 1960-2015



Maternal Mortality Ratio (per 100,000 births), U.S. & Mexico, 2000-2015



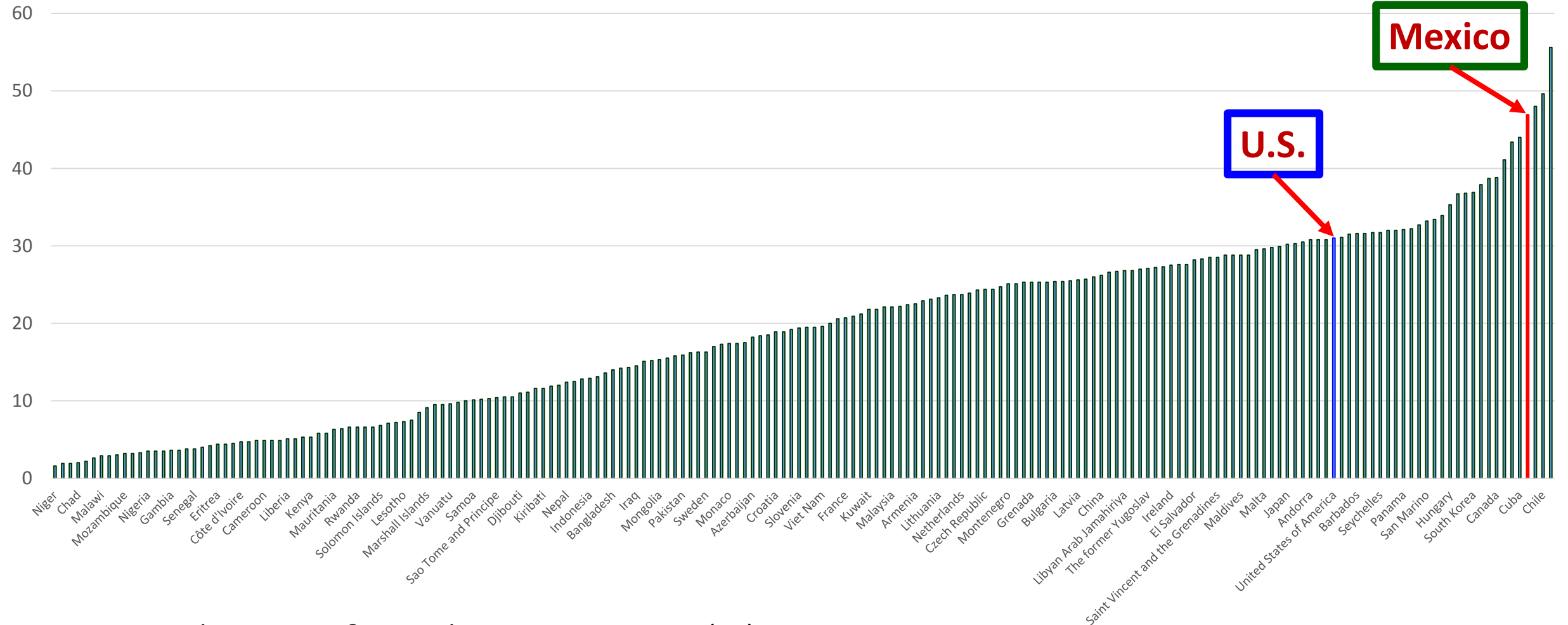
Obstetricians (per 1,000 births), U.S. & Mexico, 1990-2014



So let's look at Cesareans

First, why should we care?

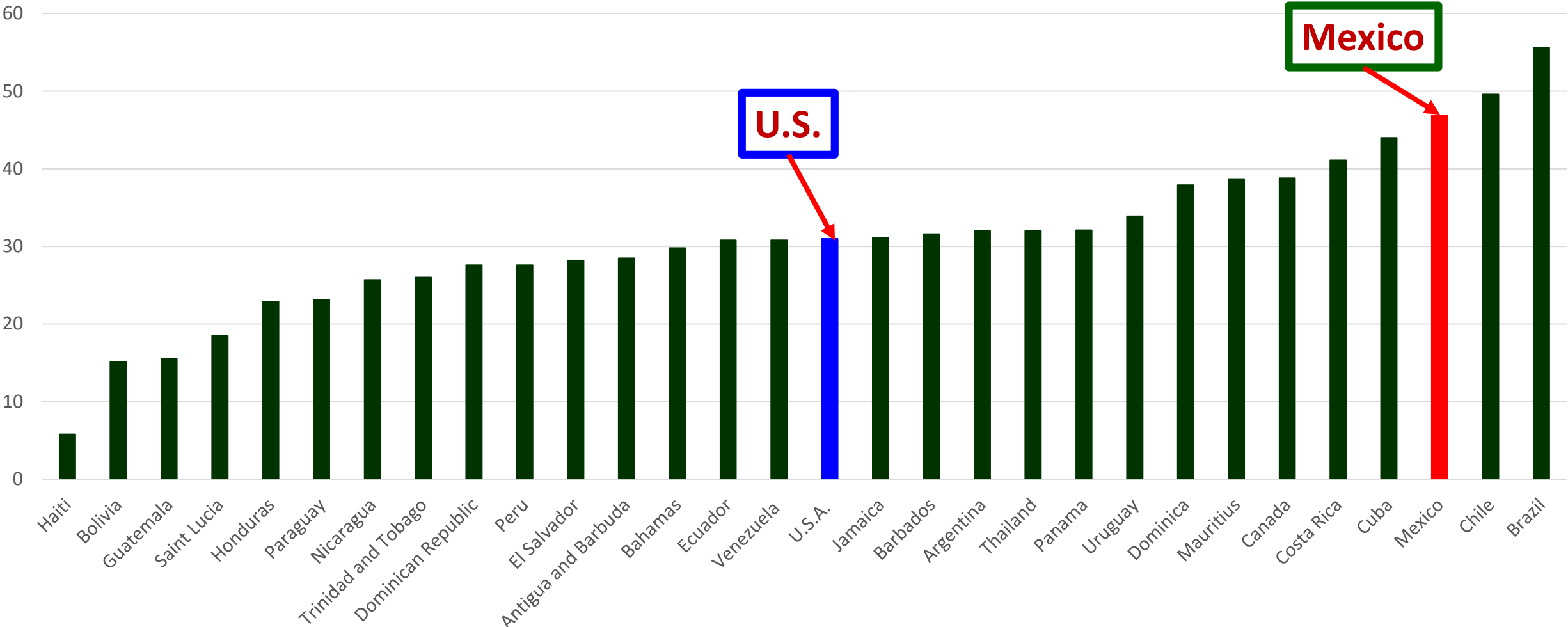
Cesarean Rates (%) Worldwide



Source: Molina G. CDR & Mortality. JAMA 2015; 314 (21): 2263-2270

BirthByTheNumbers.org

Cesarean Rates (%) Americas



Source: Molina G. CDR & Mortality. JAMA 2015; 314 (21): 2263-2270

Cesarean Rates (%), U.S. & Mexico, 1990-2015

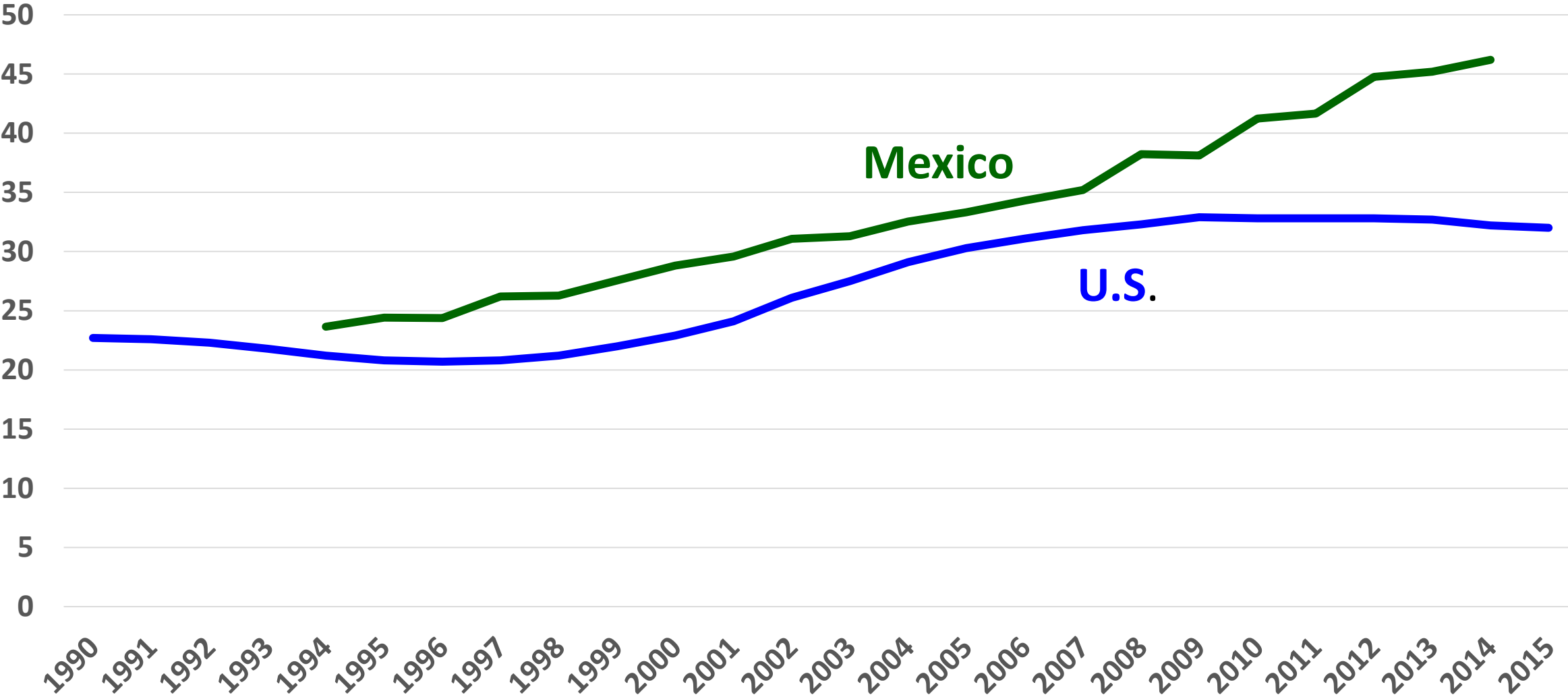


Figure 2. Relation Between Neonatal Mortality Rate (per 100 Live Births in 2012) and Cesarean Delivery Rate (per 100 Live Births) in 2012 for 191 Countries

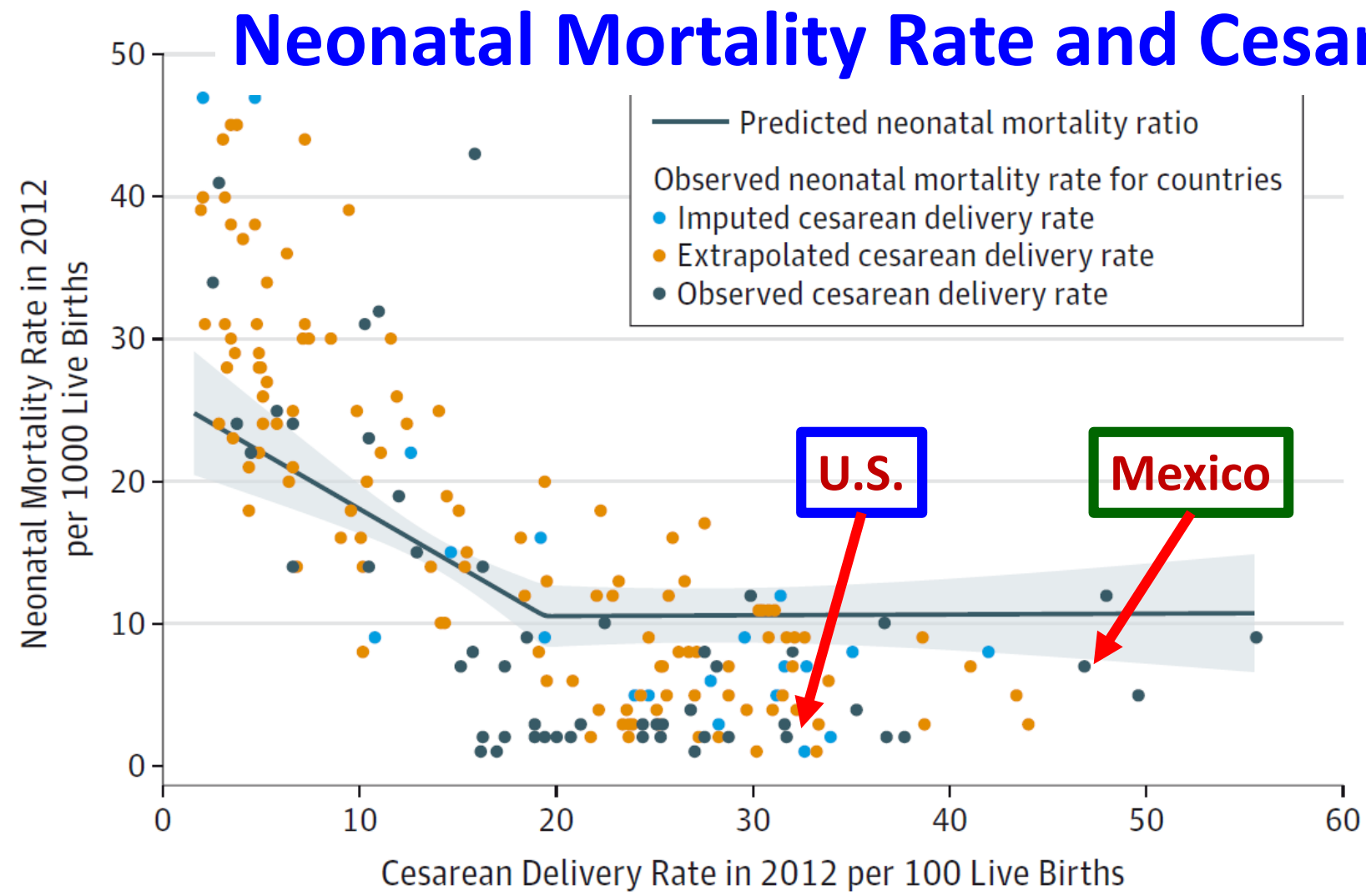


Figure 1. Relation Between Maternal Mortality Ratio in 2013 and Cesarean Delivery Rate (per 100 Live Births) in 2012 for 181 Countries

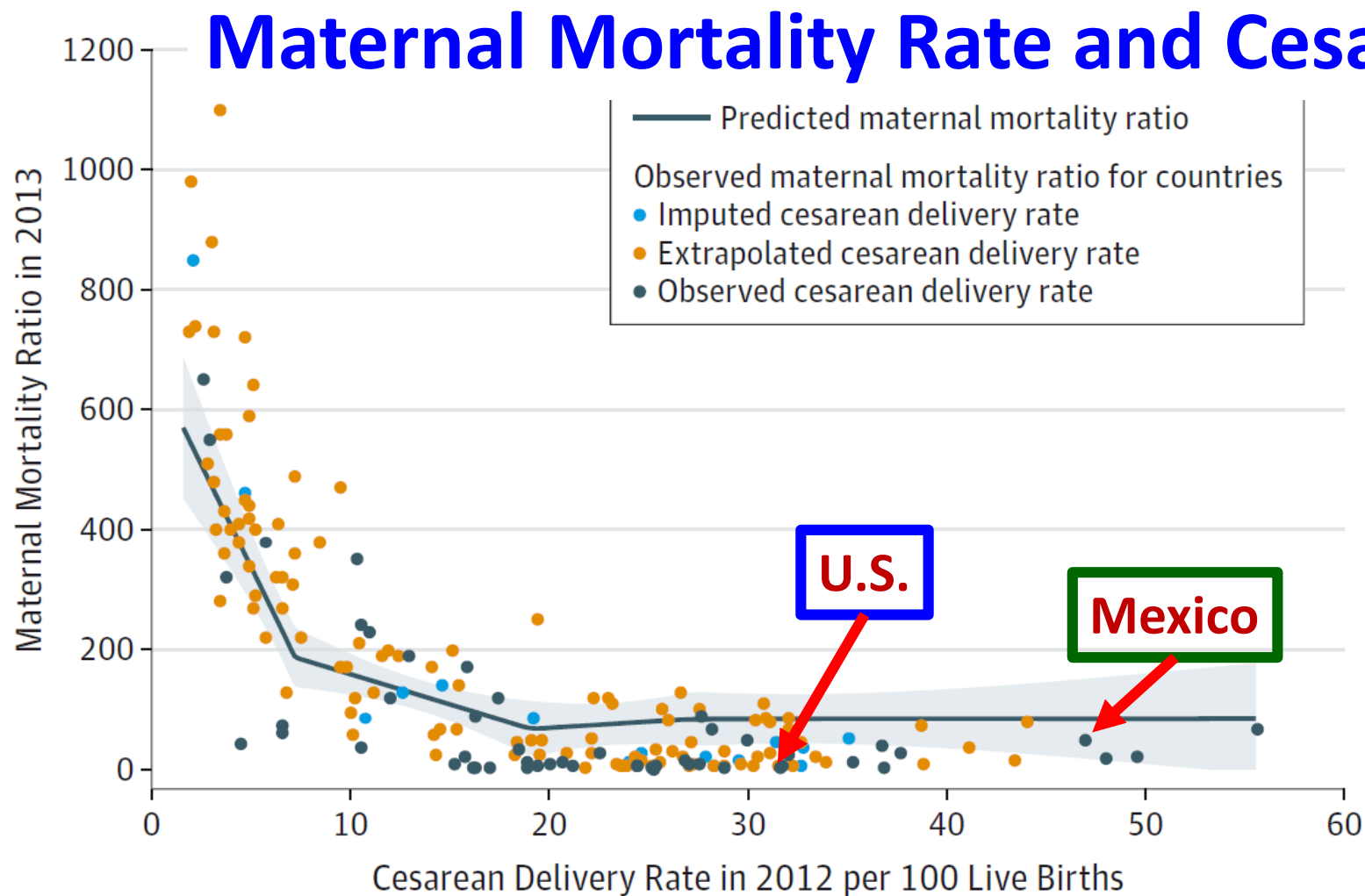
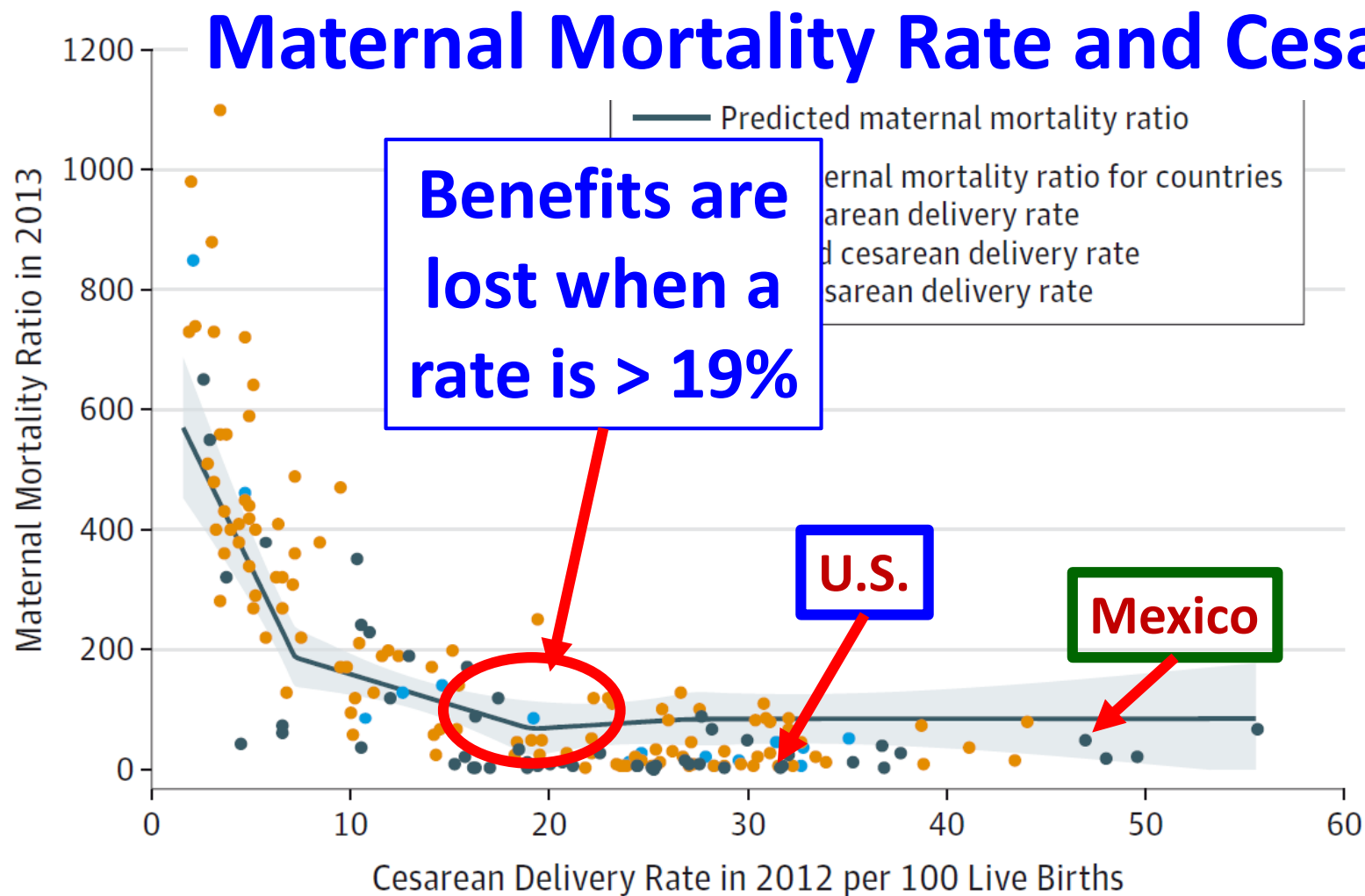


Figure 1. Relation Between Maternal Mortality Ratio in 2013 and Cesarean Delivery Rate (per 100 Live Births) in 2012 for 181 Countries



Source: Molina G. CDR & Mortality. JAMA 2015; 314 (21): 2263-2270

Cesareans can be life saving at times, but there is a point of diminishing returns

So How did we get here?

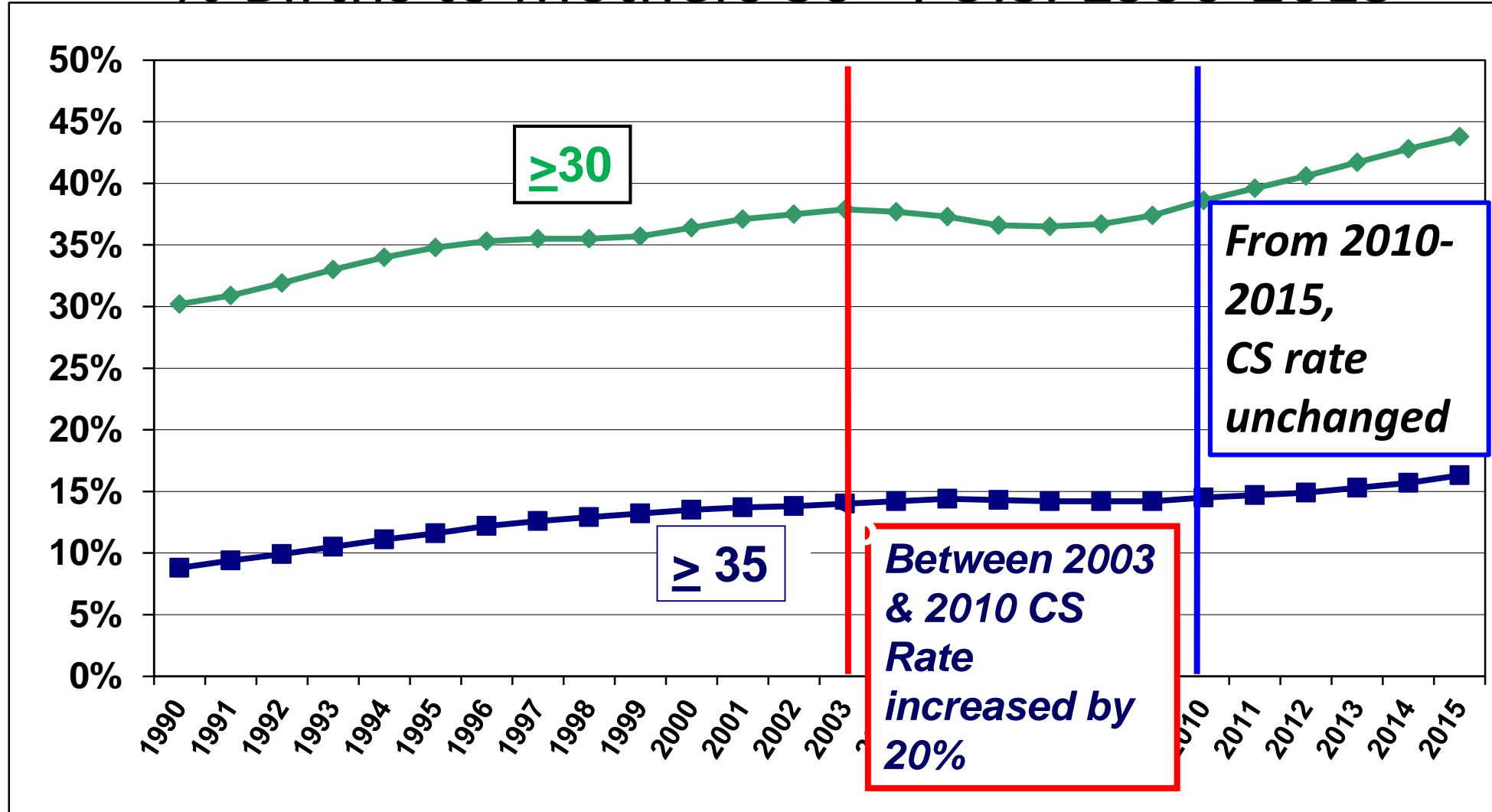
**Why are there so many
cesareans if there isn't evidence
that they improve outcomes?**

Commonly Used Explanations for the High Cesarean Rate

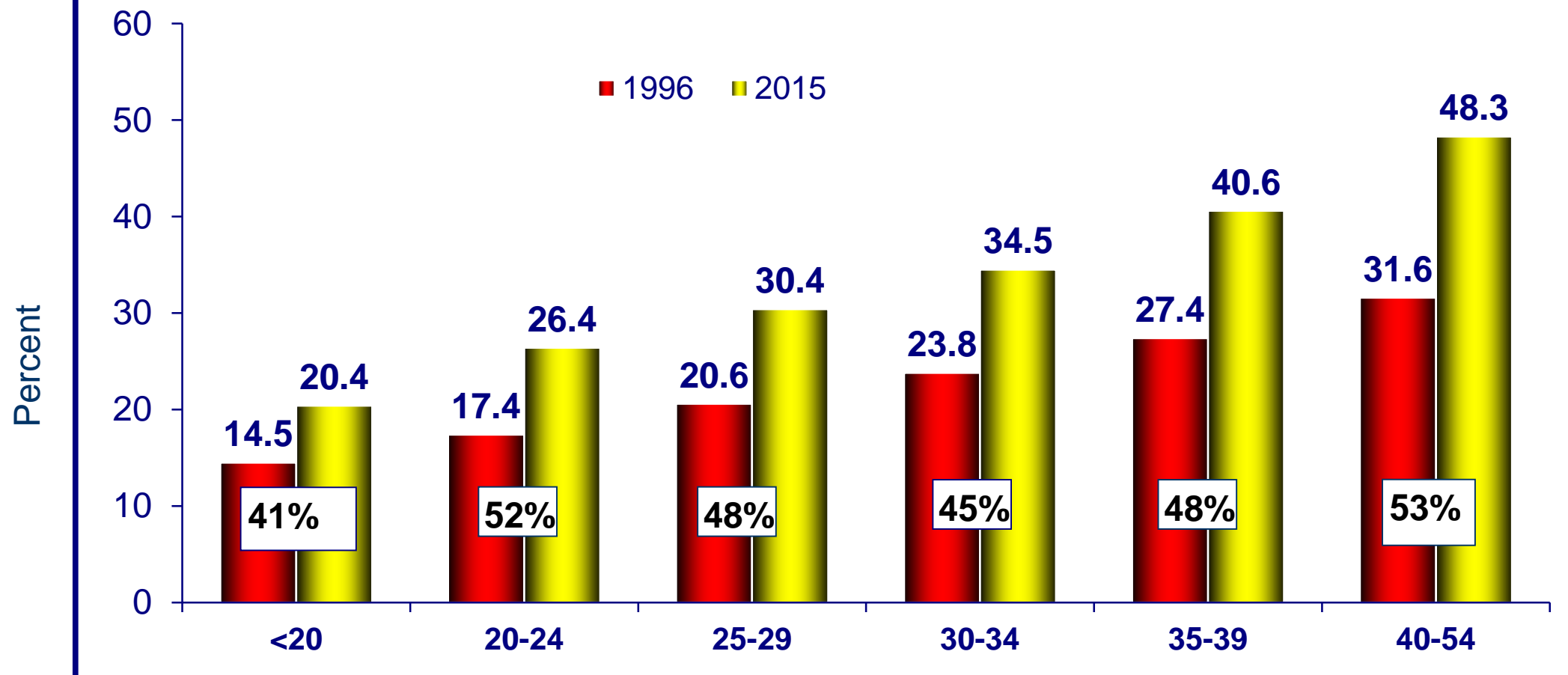
- Mothers are getting ***older***
- More ***multiples*** being born
- Babies are getting ***bigger***
- Maternal health is worse: ***obesity, diabetes & hypertension***
- Mothers are ***asking for it***

Is it Older Mothers?

% Births to Mothers 30 +, U.S. 1990-2015



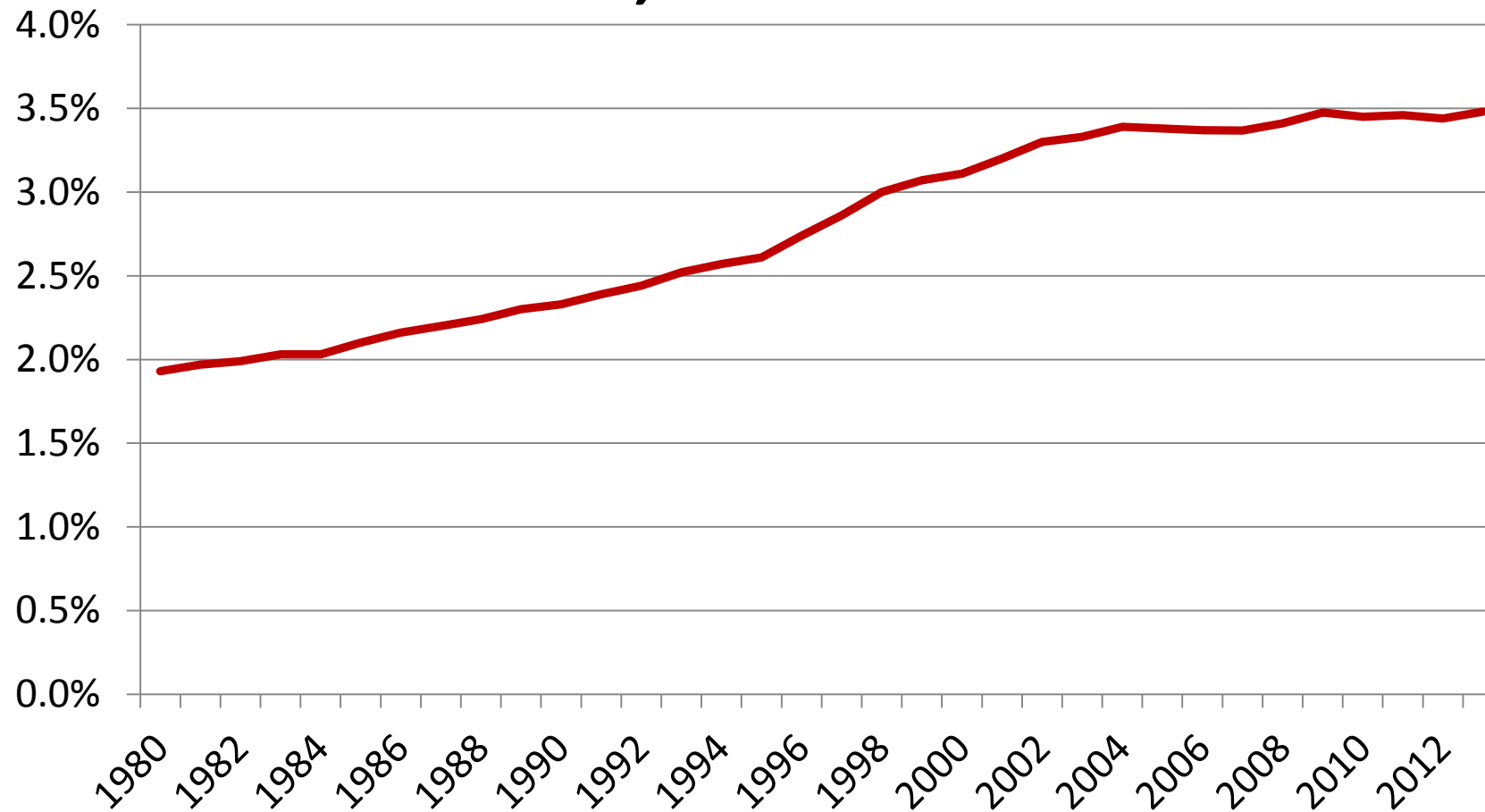
Total Cesarean Rates (per 100 births) by Age of Mother: United States, 1996 and 2015



It's not just about more mothers being older – it's about how we treat older mothers.

Is it Multiple Births?

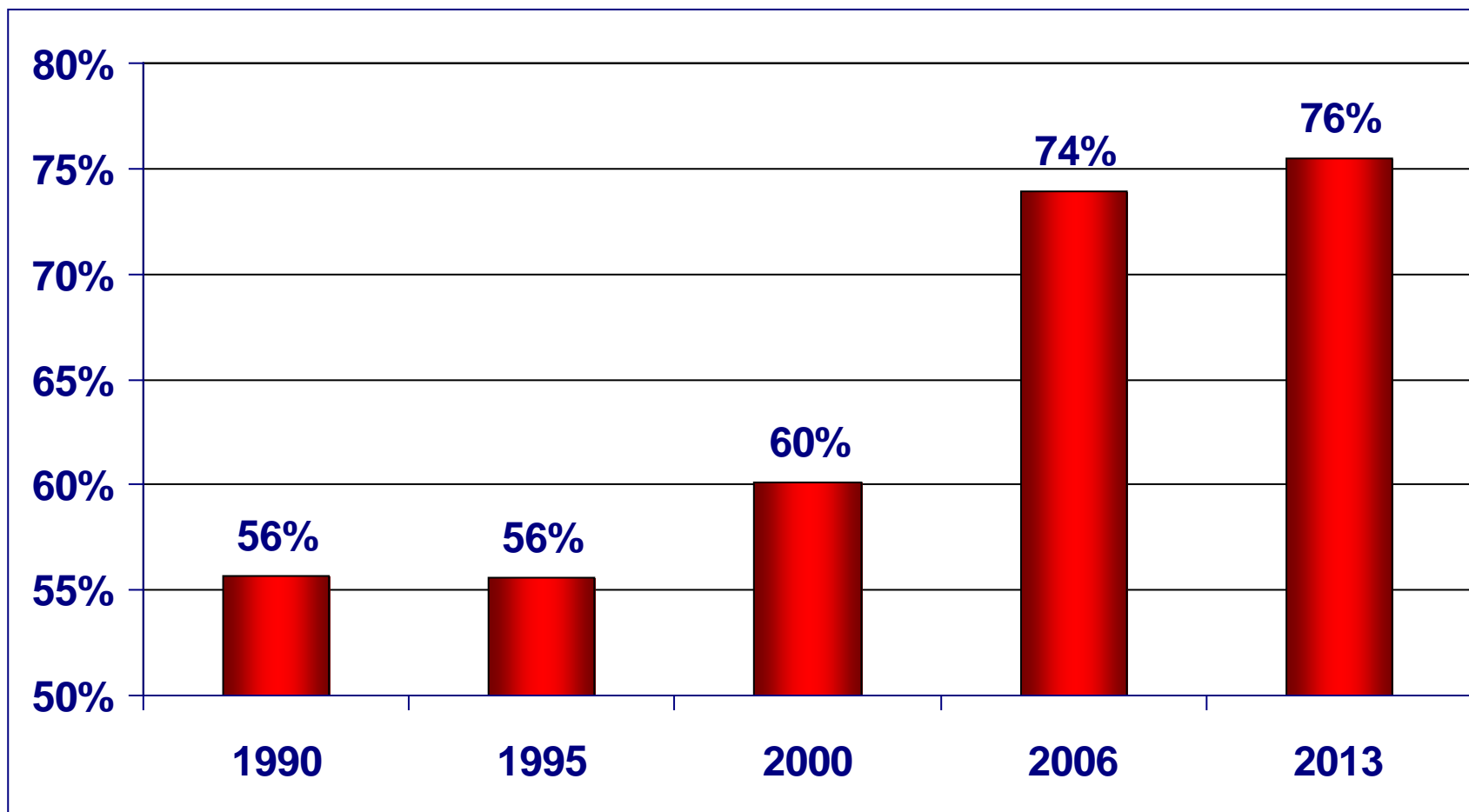
Proportion of all babies in multiple births, U.S., 1980-2013



Source: National Center for Health Statistics Annual Birth Reports

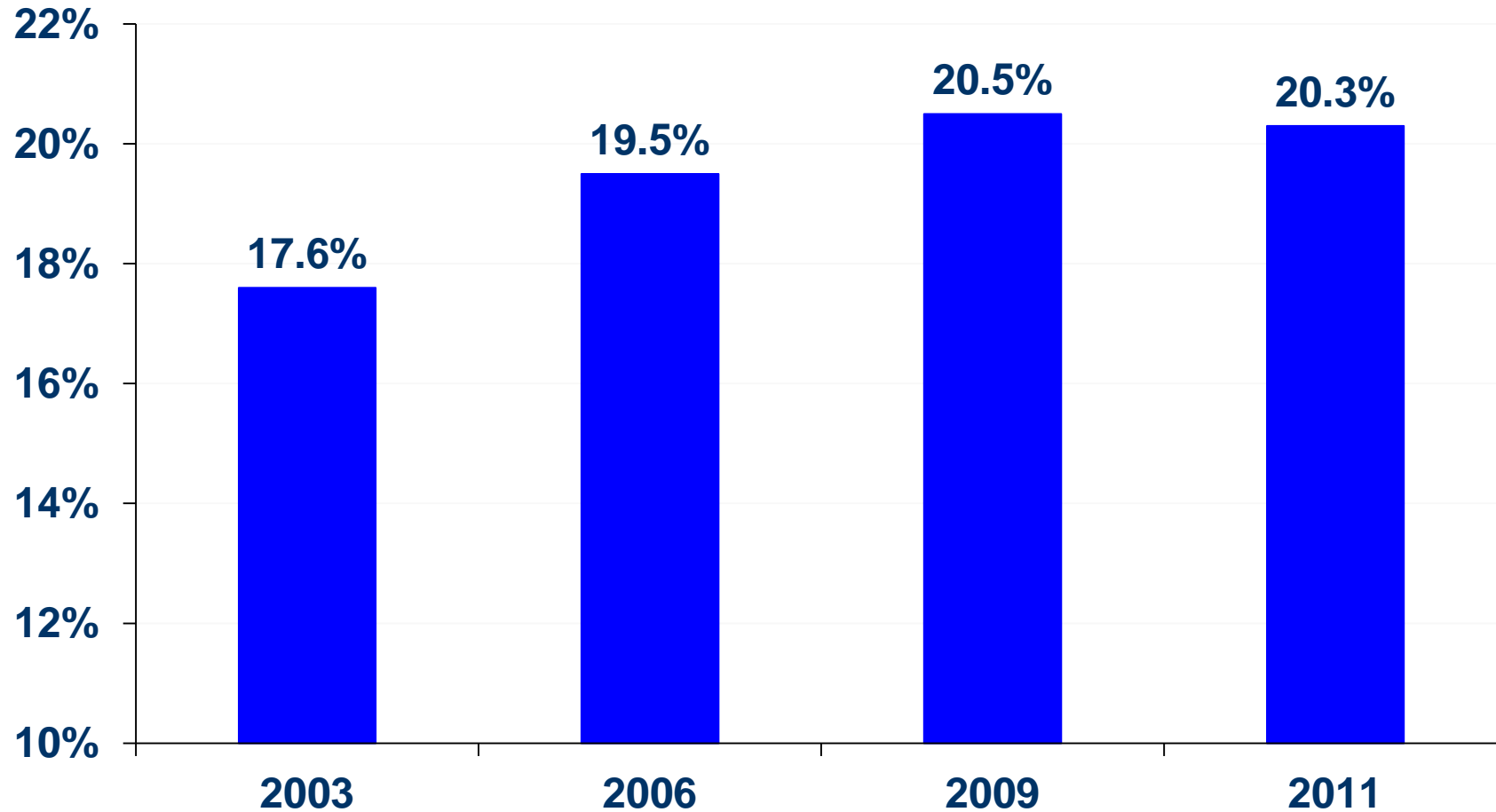
BirthByTheNumbers.org

Cesarean Rates for Multiple Births, U.S. 1990-2013



Is it Mothers' Health getting worse?

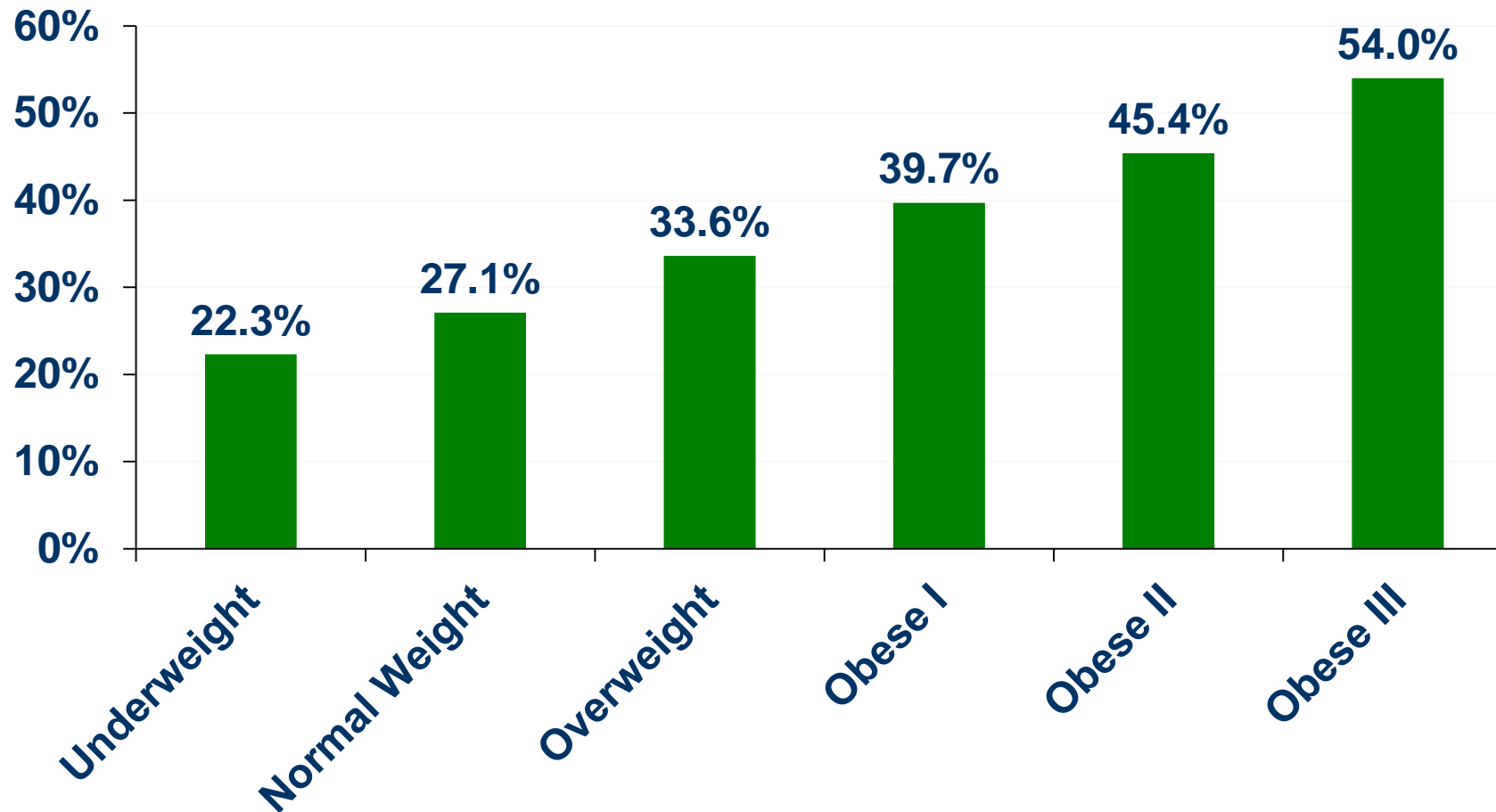
Prepregnancy Obesity, U.S. 2003, 2006, 2009, 2011



Sources: 2003-2009 -- S. Fisher. Is obesity still increasing among pregnant women?
Preventive Medicine 2013; 56: 372-378; 2011 – CDC VitalStats.

Mothers' Health?

Cesarean Rate Singleton Births by Prepregnancy Weight Range, U.S. 2013

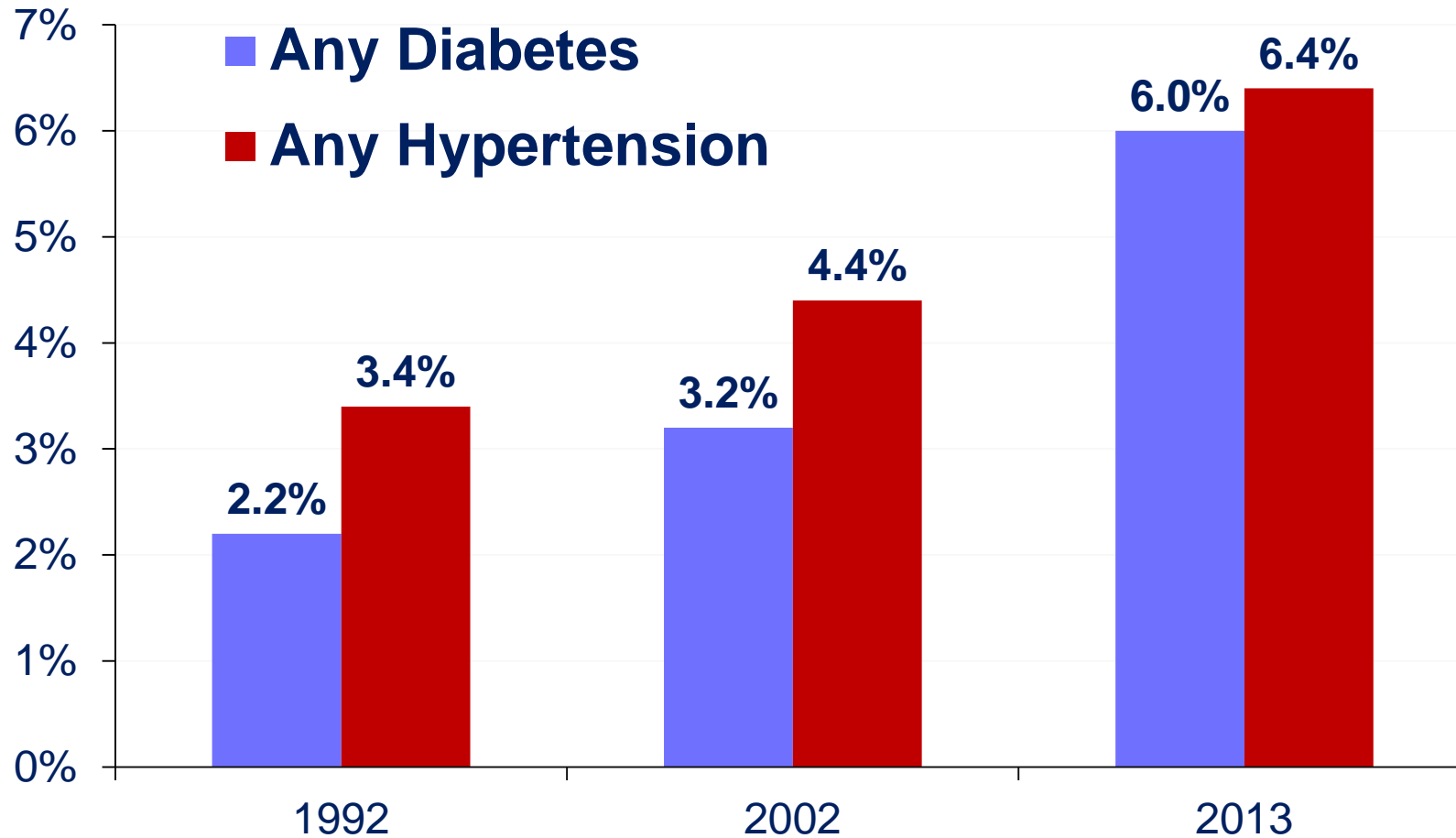


Source: CDC VitalStats, 2013.

BirthByTheNumbers.org

Mothers' Health?

Diabetes & Hypertension*, 1992,2002,2013*



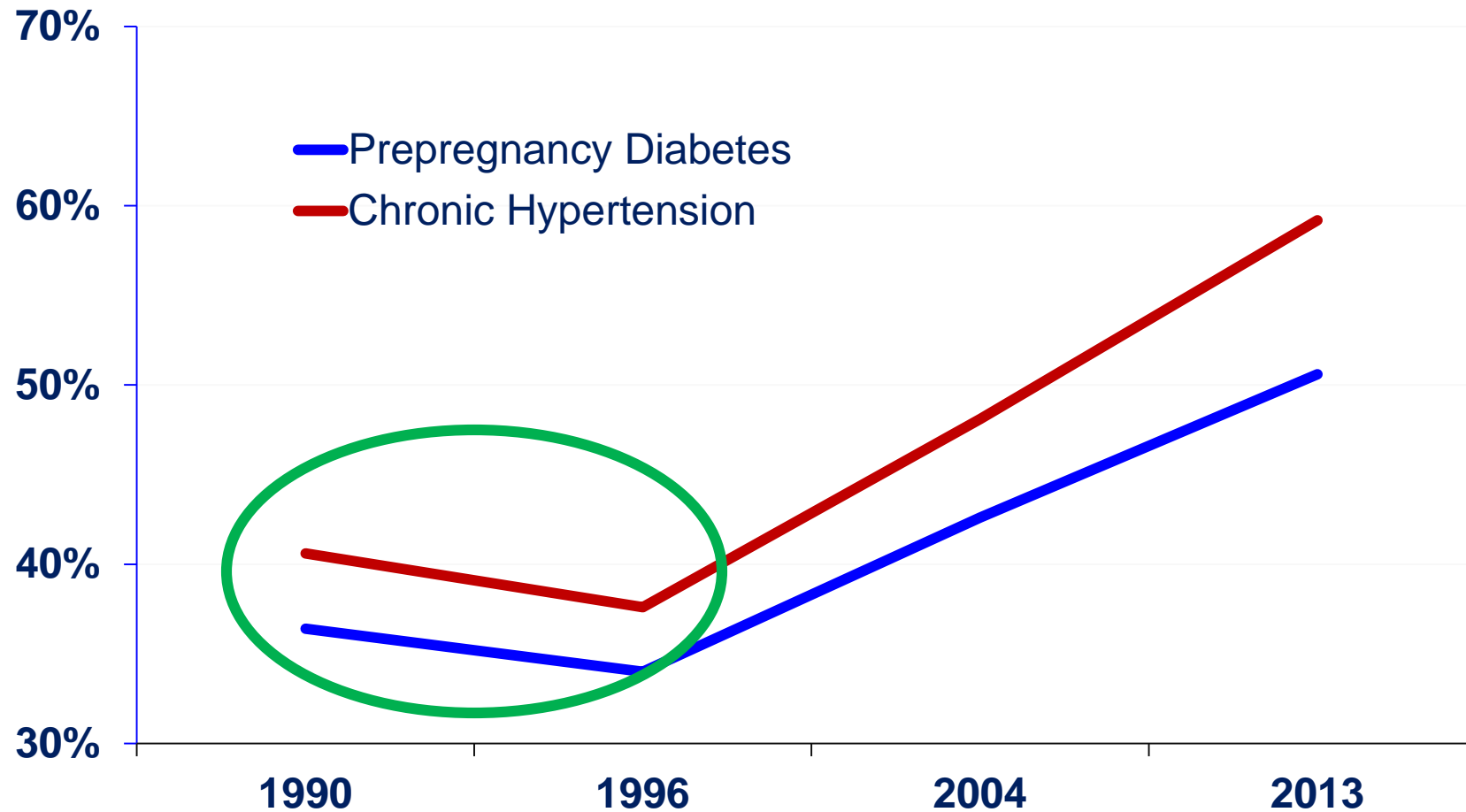
*** Either gestational or chronic condition**

Source: CDC VitalStats, selected years.

BirthByTheNumbers.org

Mothers' Health?

*Cesarean Rates, Singleton Births, U.S.,
1990, 1996, 2004, 2013*



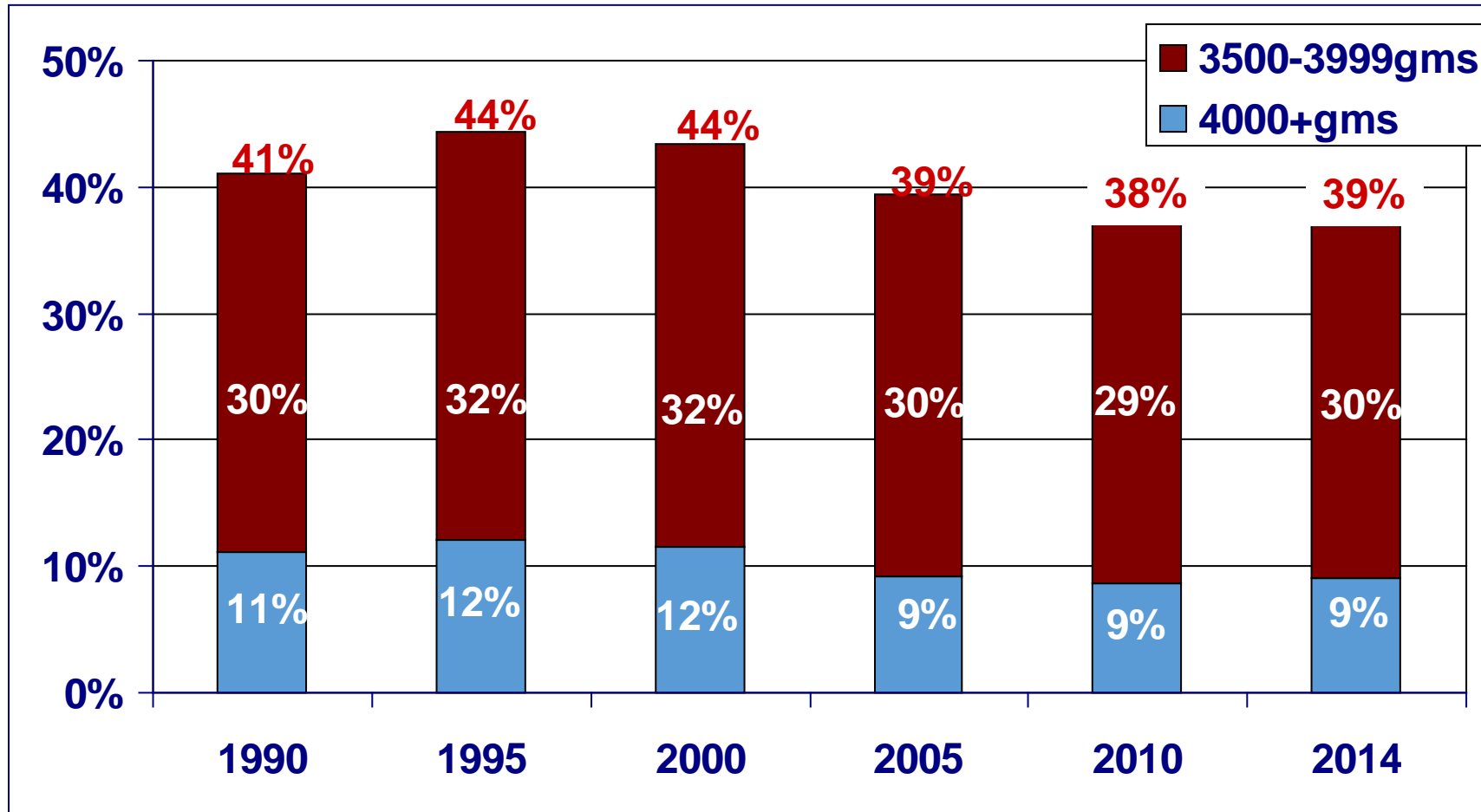
Source: CDC VitalStats, selected years.

BirthByTheNumbers.org

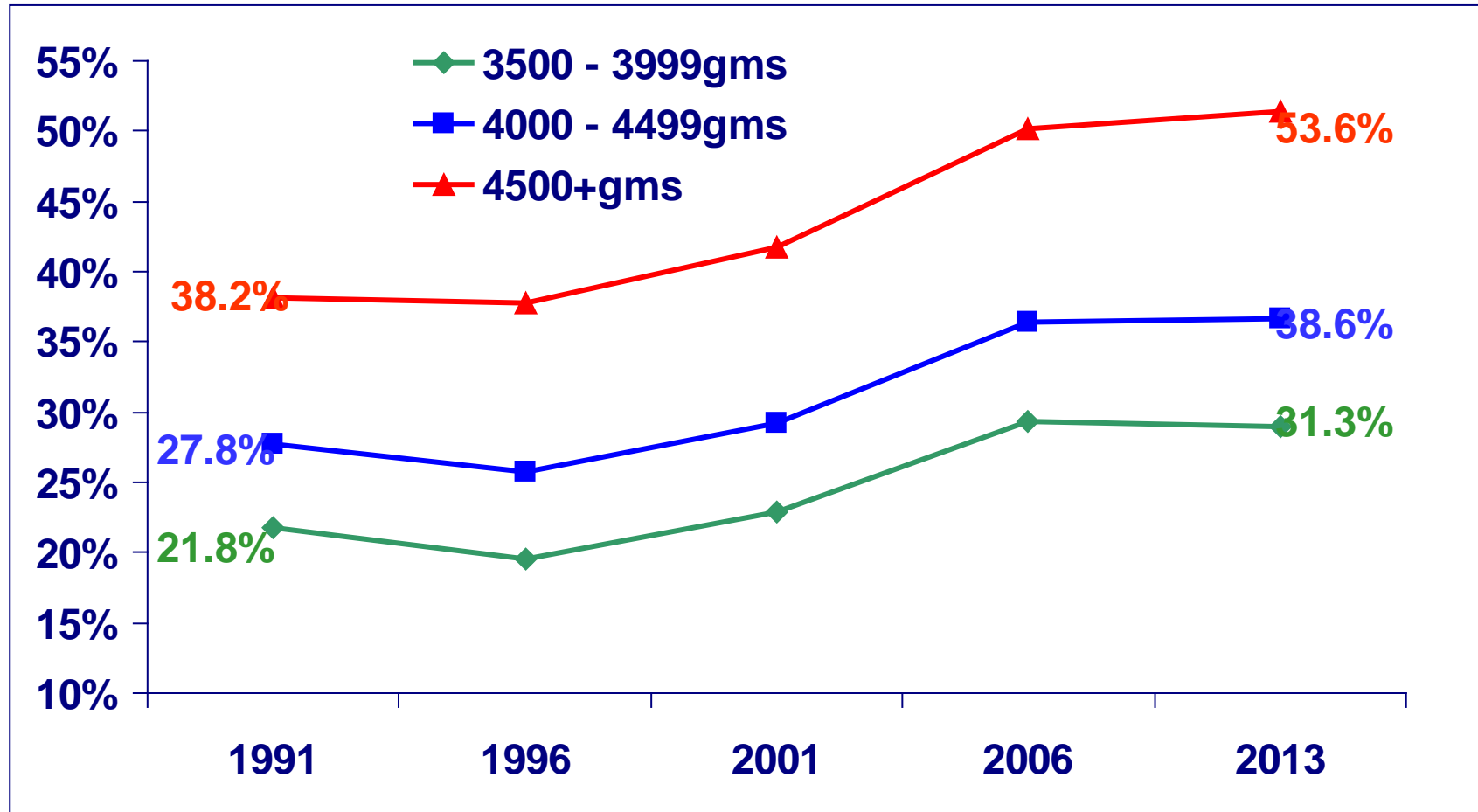
**Is it that babies are getting
bigger?**

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

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



% Cesareans in Singleton Births, U.S. by Birthweight, 1991-2013

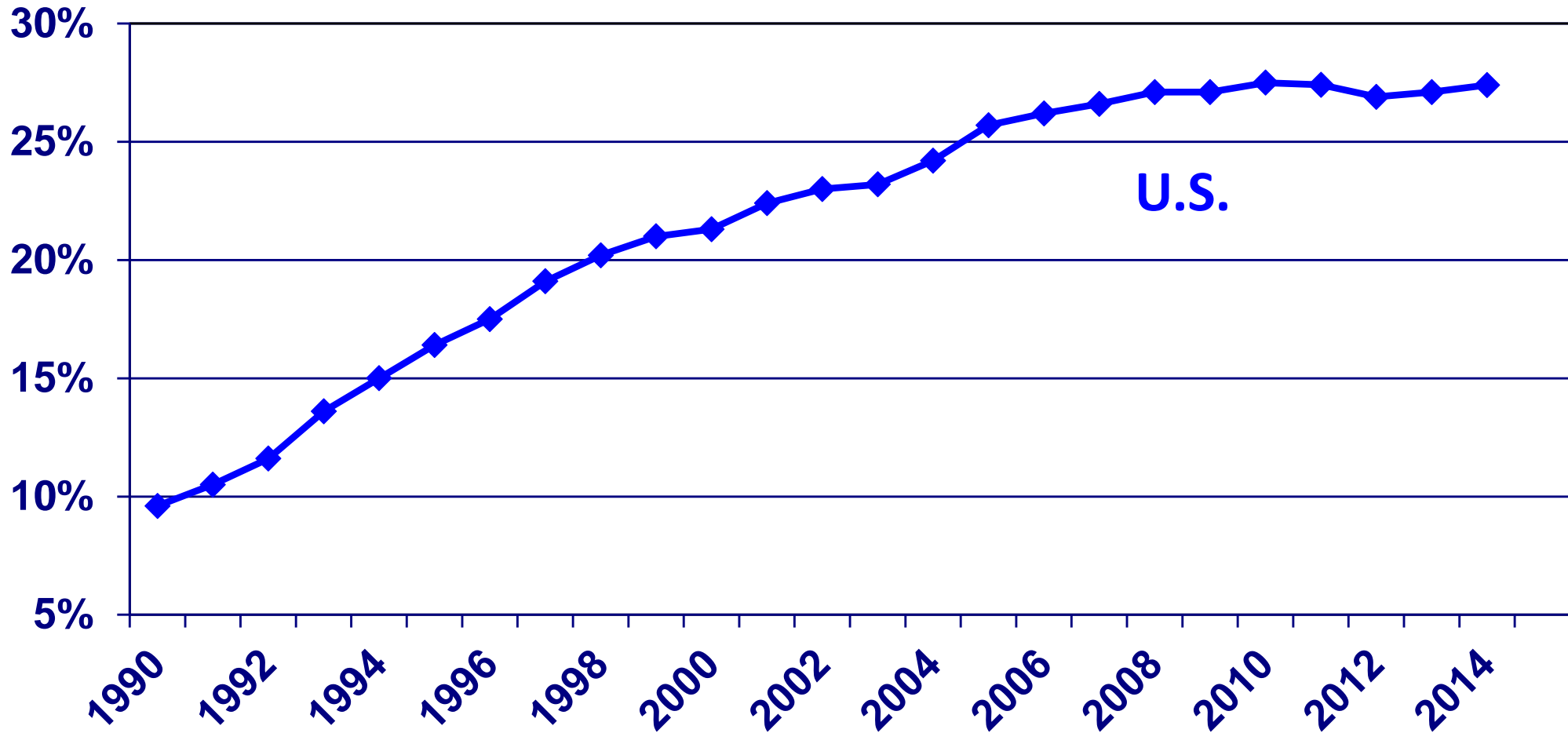


The rise of the big baby



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

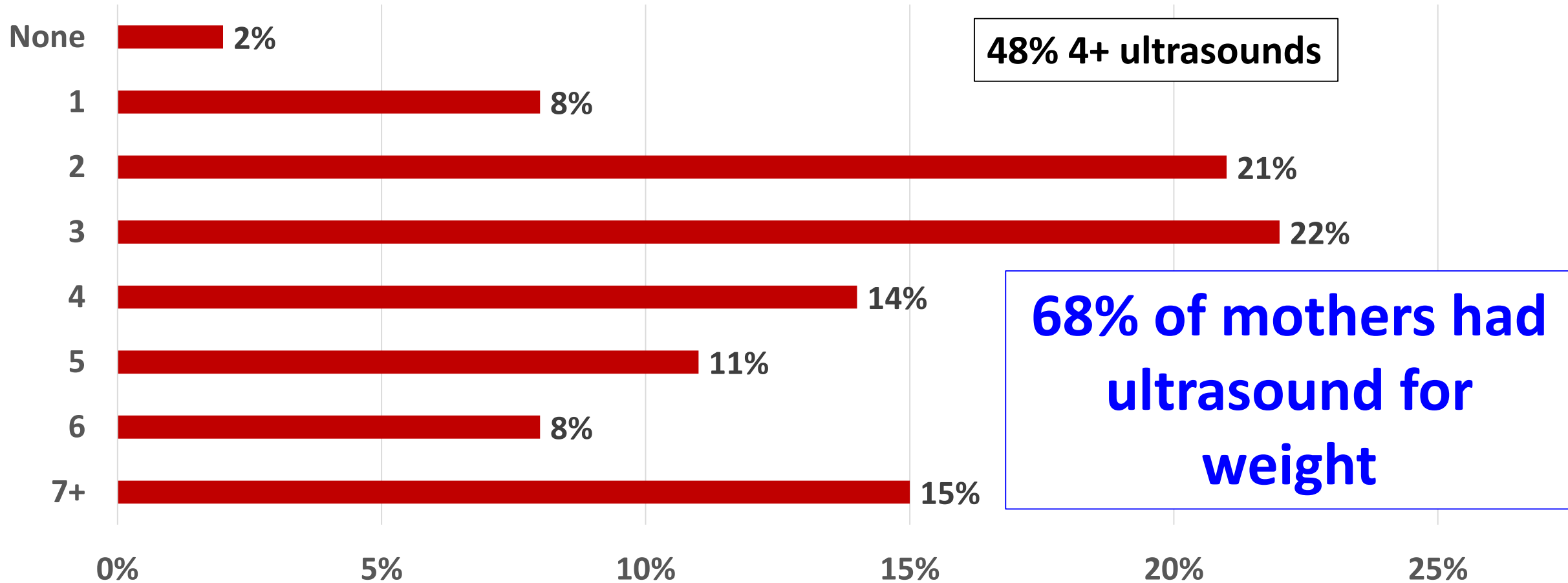
Reasons why mothers experienced **medical induction**

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 <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%
Maternity care provider worried the baby was too big	9%	2%
Provider tried to induce labor but it didn't work	8%	3%
Problem with the placenta	8%	2%
Labor was taking too long	7%	2%
Past my due date	3%	-
Afraid to labor and have baby vaginally	3%	-
No medical reason	4%	3%

Number of Ultrasounds



What's with these Big Babies?

<i>Near the end of your pregnancy, did your maternity care provider tell you that your baby might be getting quite large?</i>			
31.2% YES	ALL	Yes	No
<i>Actual Weight</i>	7 lbs 5 ounces	7 lbs 14 ounces	7 lbs 1 ounce
Baby Actually Macrosomic <i>(8lb 13ounces)</i>	9.9%	19.7%	5.5%

Source: Cheng et al. Healthcare Utilization of Mothers with Suspected Large Babies. *MCH Journal*. 2015. 19:2578–2586

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

**Is the rise in Cesareans because
mothers are asking for them?**

*Have maternal request cesareans
played a major role in these
increases?*

Listening to MothersSM III Pregnancy and Birth



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

<http://www.childbirthconnection.org>

Asking Mothers about Maternal Request Cesareans

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

May 2013

Two Components to Maternal Request Primary Cesarean

1. Mother made request for planned cesarean before labor
2. Cesarean for no medical reason

Patient Choice Primary Cesareans

- Combining reason for cesarean and timing of decision found only about 1% of respondents had a planned primary cesarean for no medical reason.

"I think that [cesarean] is... the best way ... to give birth. It is a planned way, no hassle, no pain, the baby doesn't struggle to come out, the baby is not pressed to come out ...I think that ... everybody should have the baby by cesarean section." (quote from LtM2)

Studies from England, Canada and U.S. states confirm very low rates of maternal request cesareans

**Why would a mother make
such a request?**

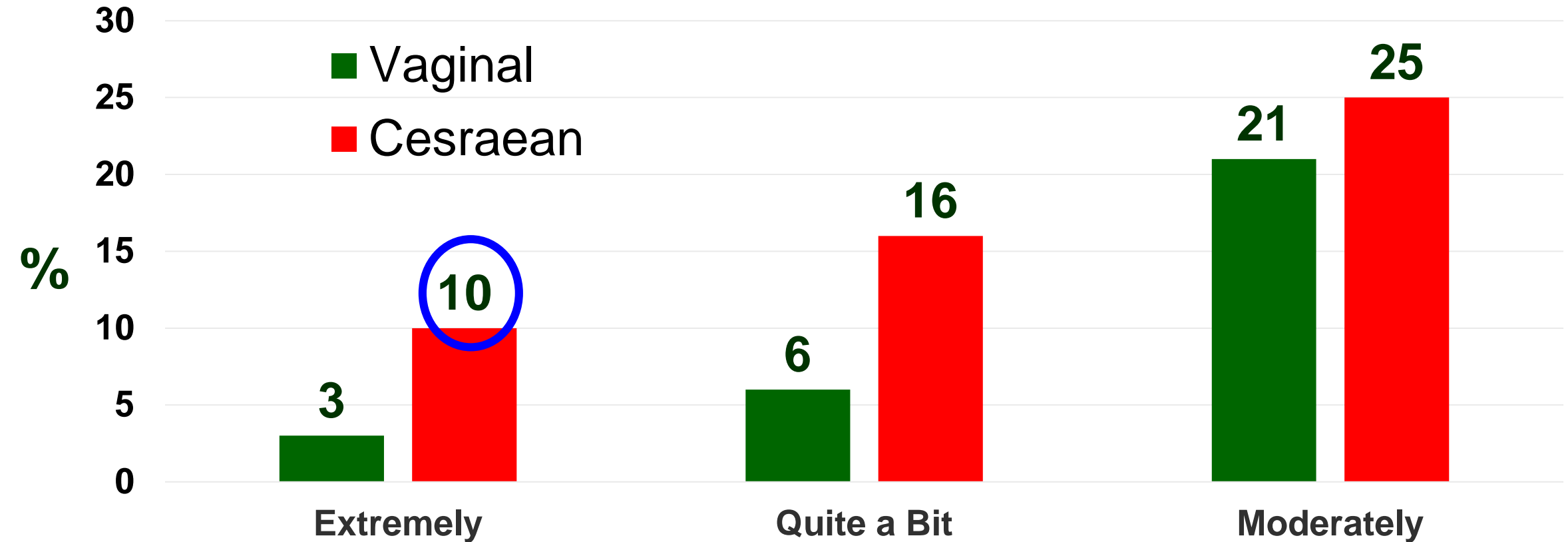
**Because she thinks she'll
avoid the pain of labor.**

Mothers' experience of new physical problems in first 2 mos. and at 6+ mos. after birth

	In first two months			Problem persisted to six months or more*
	Major new problem	Minor new problem	Maj/minor new problem	
Cesarean only <i>n</i> =744				
Cesarean incision site pain	19%	39%	58%	16%
CS incision site infection	8%	16%	24%	5%
Vaginal only <i>n</i> =1656				
Painful perineum	11%	30%	41%	7%
Infection from cut/torn perineum	5%	13%	18%	4%

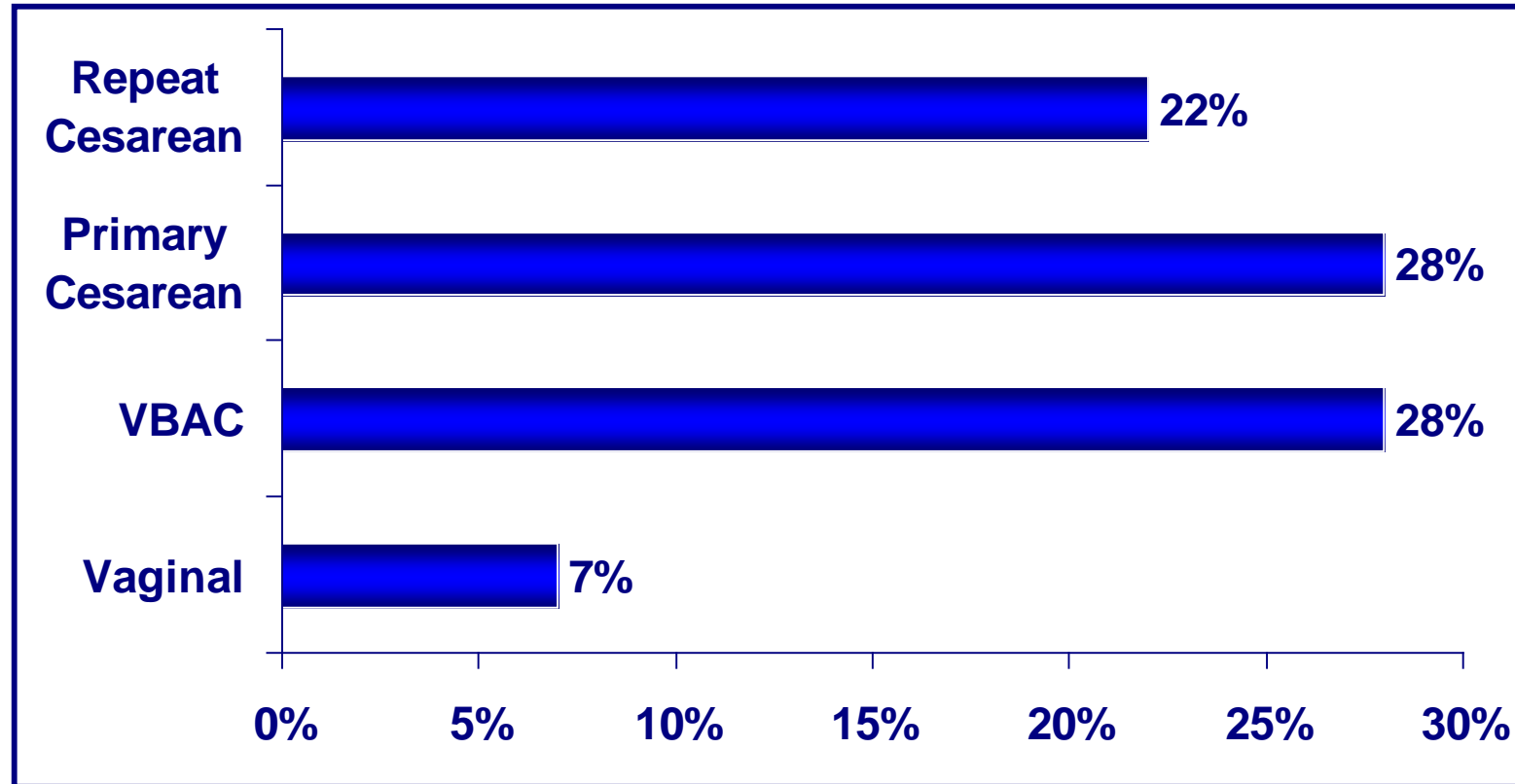
* Base: those mothers responding at six or more months after the birth with a cesarean (*n*=630) or vaginal (*n*=1365) birth or either (*n*=1995)

How much did pain interfere with routine activities in first 2 months after birth?



Pressure to Accept Interventions by Method of Delivery

Did you feel pressure from any health professional to have a cesarean? % yes



Source: Declercq et al. 2013. *Listening to Mothers III*.

BirthByTheNumbers.org

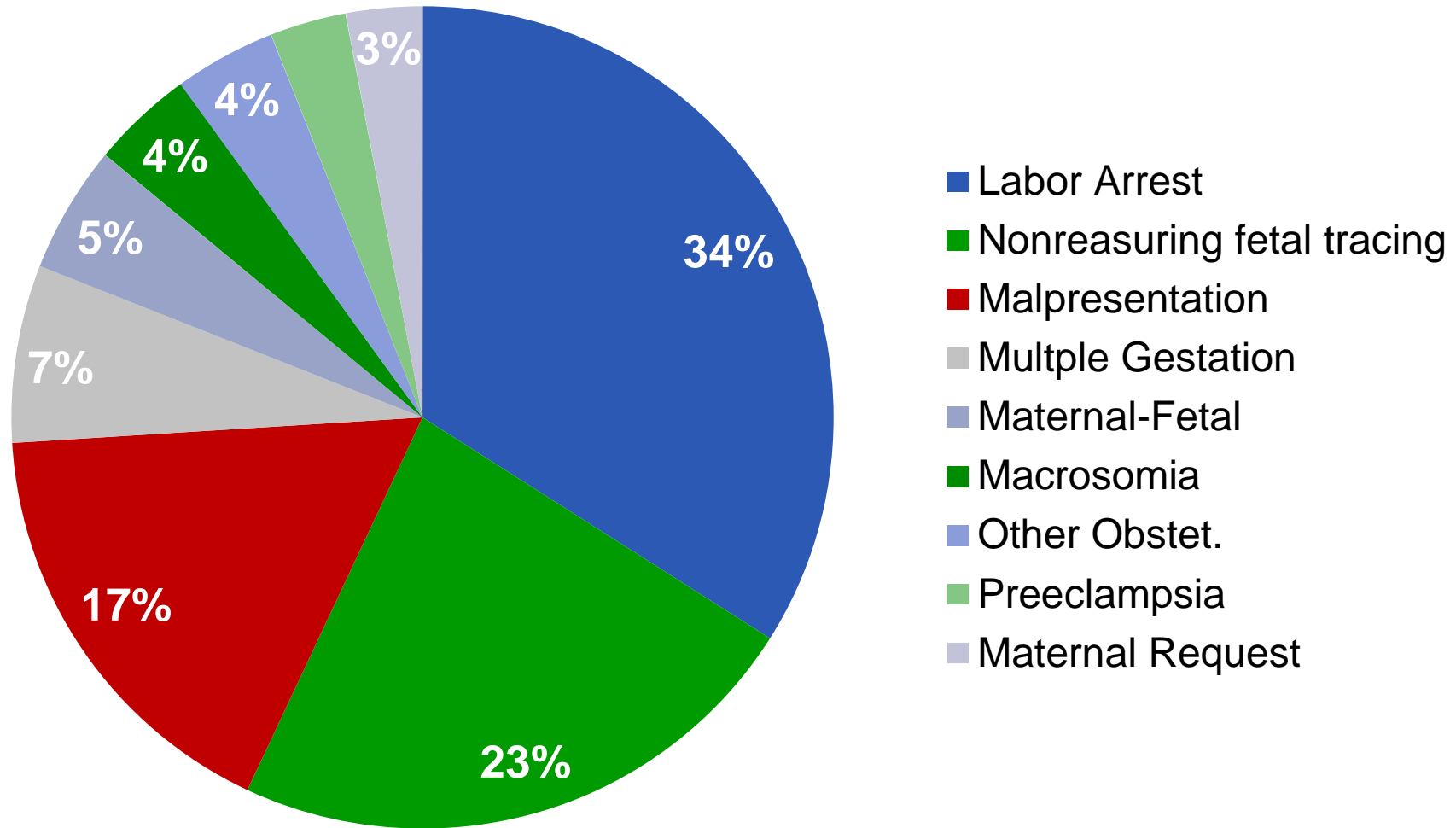
Commonly Used Explanations for the High Cesarean Rate

- Mothers are getting *older* – **NO**
- More *multiples* being born – **NO**
- Babies are getting *bigger* – **NO !!**
- Maternal health is worse: *obesity, diabetes & hypertension* – **Some**
- Mothers are *asking for it* – **NO**

*If the usual explanations
for the rising cesarean
rate don't account for the
changes what does?*

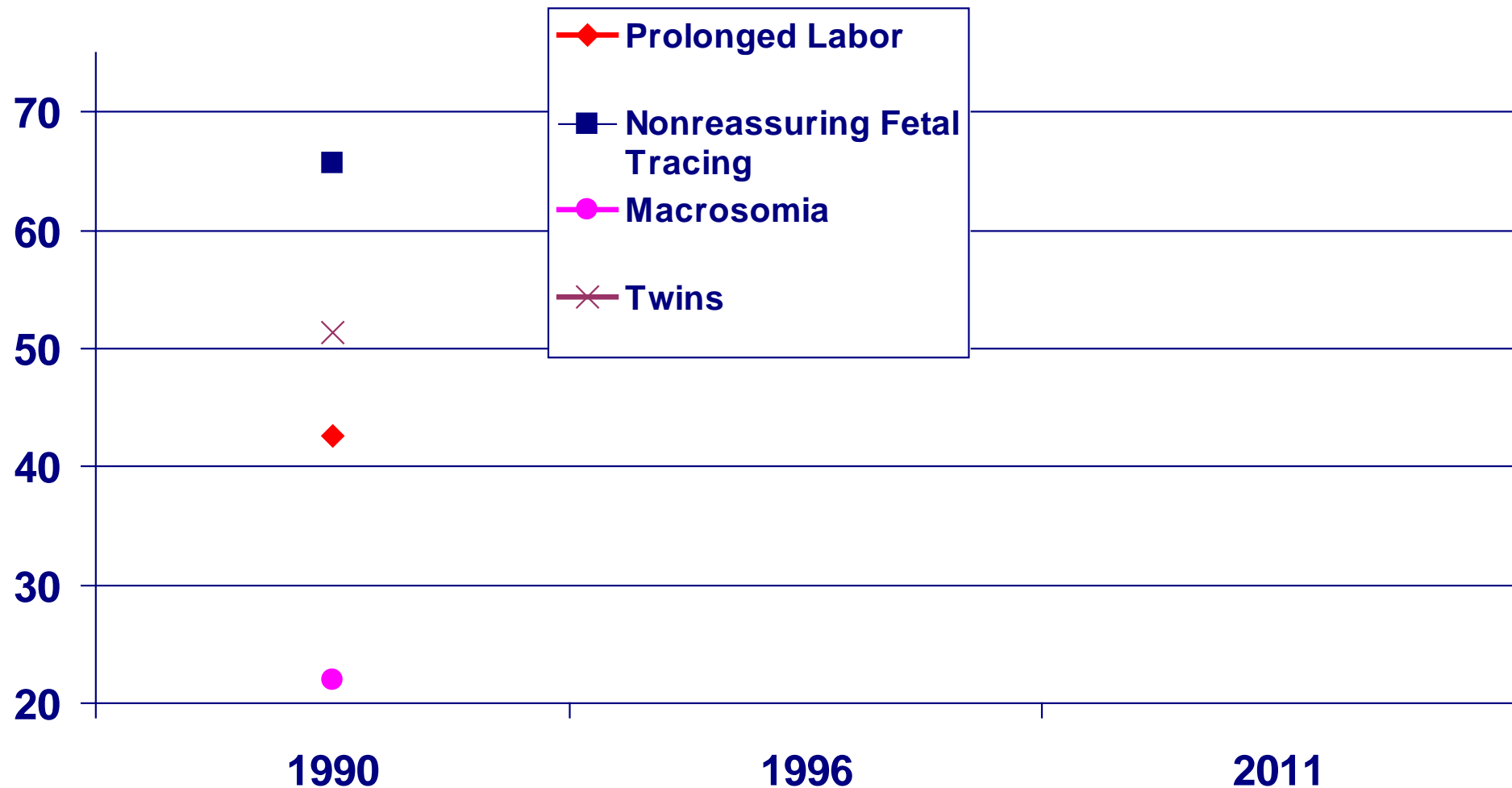
Practice Changes

Leading Indications for Cesareans



Source: ACOG & SMFM. *Safe Prevention of Primary Cesarean Delivery*. 3/2014.

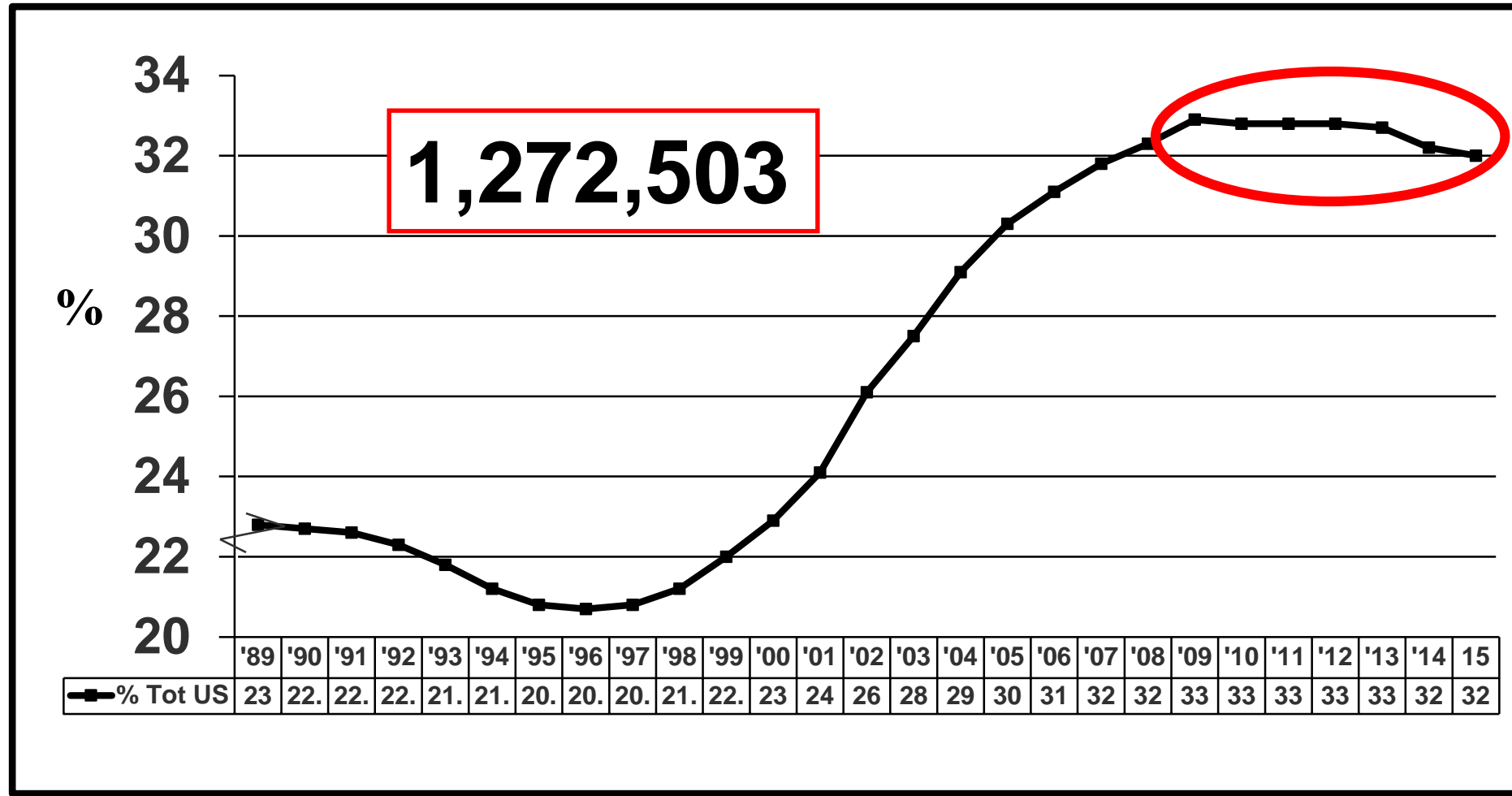
Cesarean Rates, Low Risk*, First-Time Mothers for Medical Risk Factors & Labor Complications



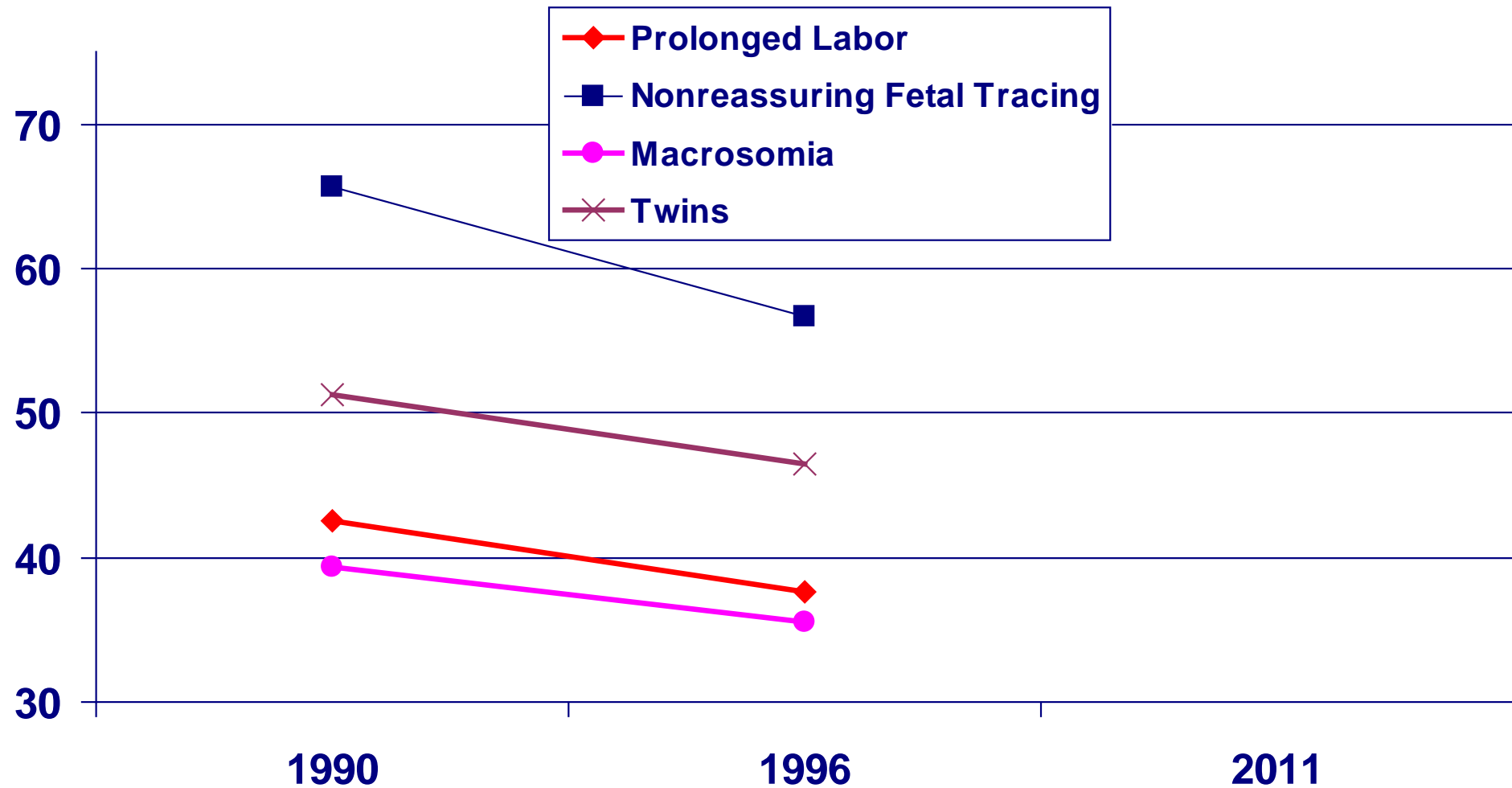
*Singleton, Vertex, Full Gestation Births

BirthByTheNumbers.org

US Cesarean Rates, 1989-2015



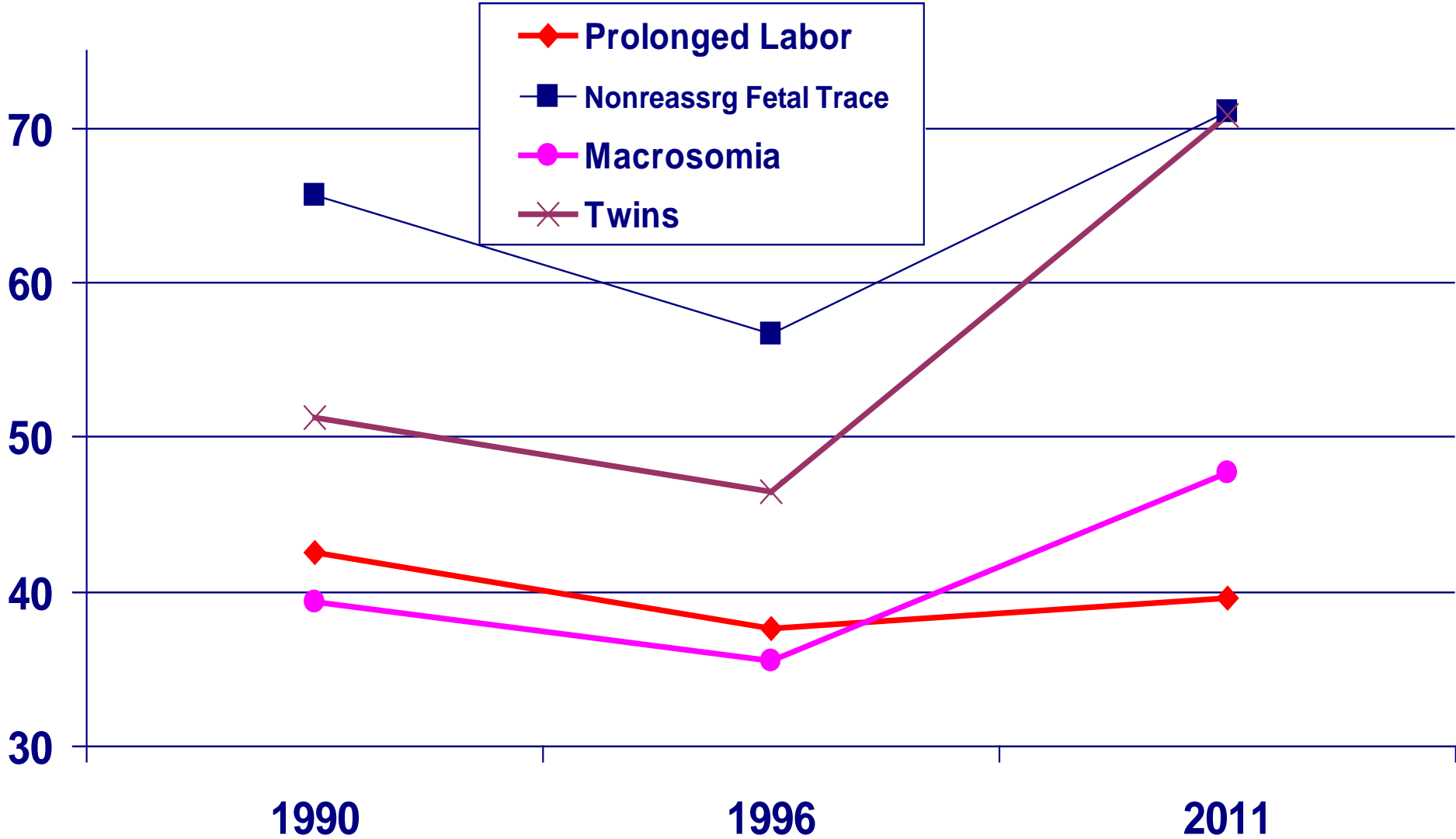
Cesarean Rates, Low Risk*, First-Time Mothers for Medical Risk Factors & Labor Complications



*Singleton, Vertex, Full Gestation Births

BirthByTheNumbers.org

Cesarean Rates, Low Risk*, First-Time Mothers for Medical Risk Factors & Labor Complications



*Singleton, Vertex, Full Gestation Births

British Journal of Obstetrics and Gynaecology
June 1998, Vol. 105, pp. 621-626

The rise in caesarean section rate: the same indications but a lower threshold

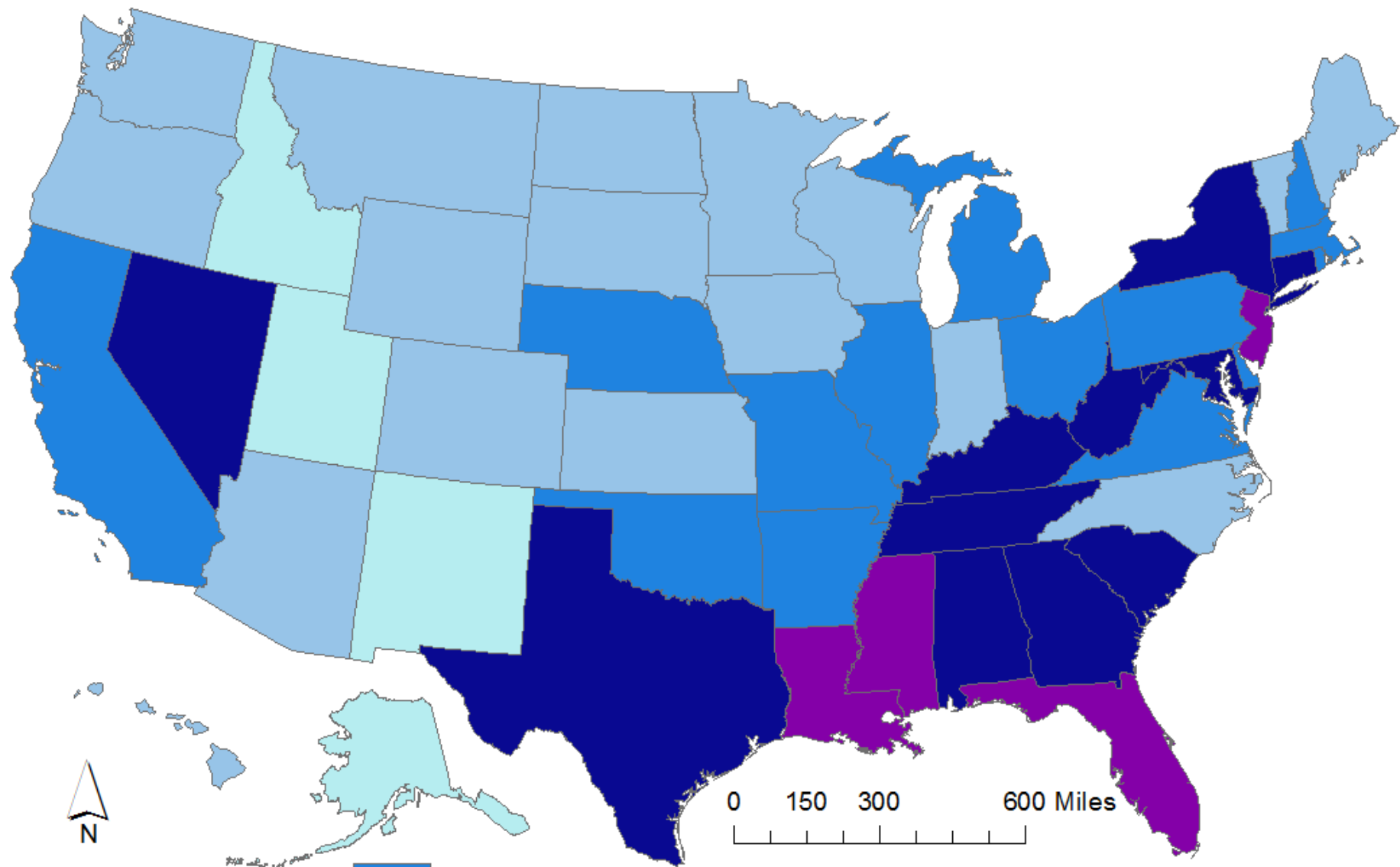
*C. R. Leitch Senior Registrar, J. J. Walker Professor (Obstetrics and Gynaecology)
University Department of Obstetrics and Gynaecology, Glasgow Royal Maternity Hospital*

***Women have not changed nearly
as much as practice patterns have***

***Any other evidence that
this is about a culture of
practice?***

Let's look at variation.

If the practice of maternity care is evidence based, then differences in rates should be based primarily on different risk profiles of mothers.



2015 rate



< 20.0%



20.0% - 24.9%



25.0% - 29.9%



30.0% - 32.9%



33.0% - 35.9%



36.0% +

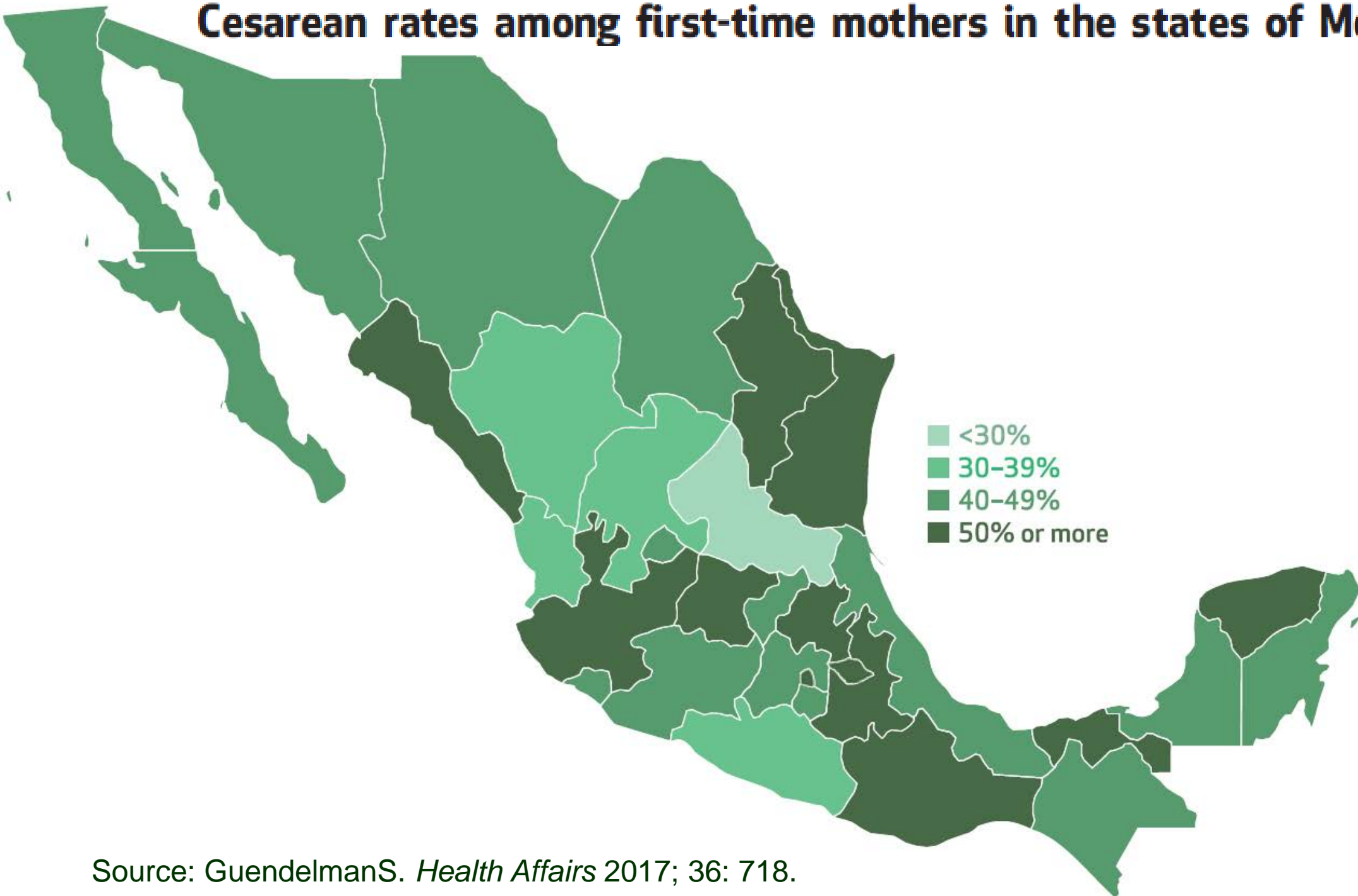
BirthByTheNumbers.org

Maps available at Birth by the Numbers (www.birthisbythenumbers.org).

Data presented in the map were provided by Dr. Eugene Declercq.

Map created by Dr. Veronica Vieira, July 2016.

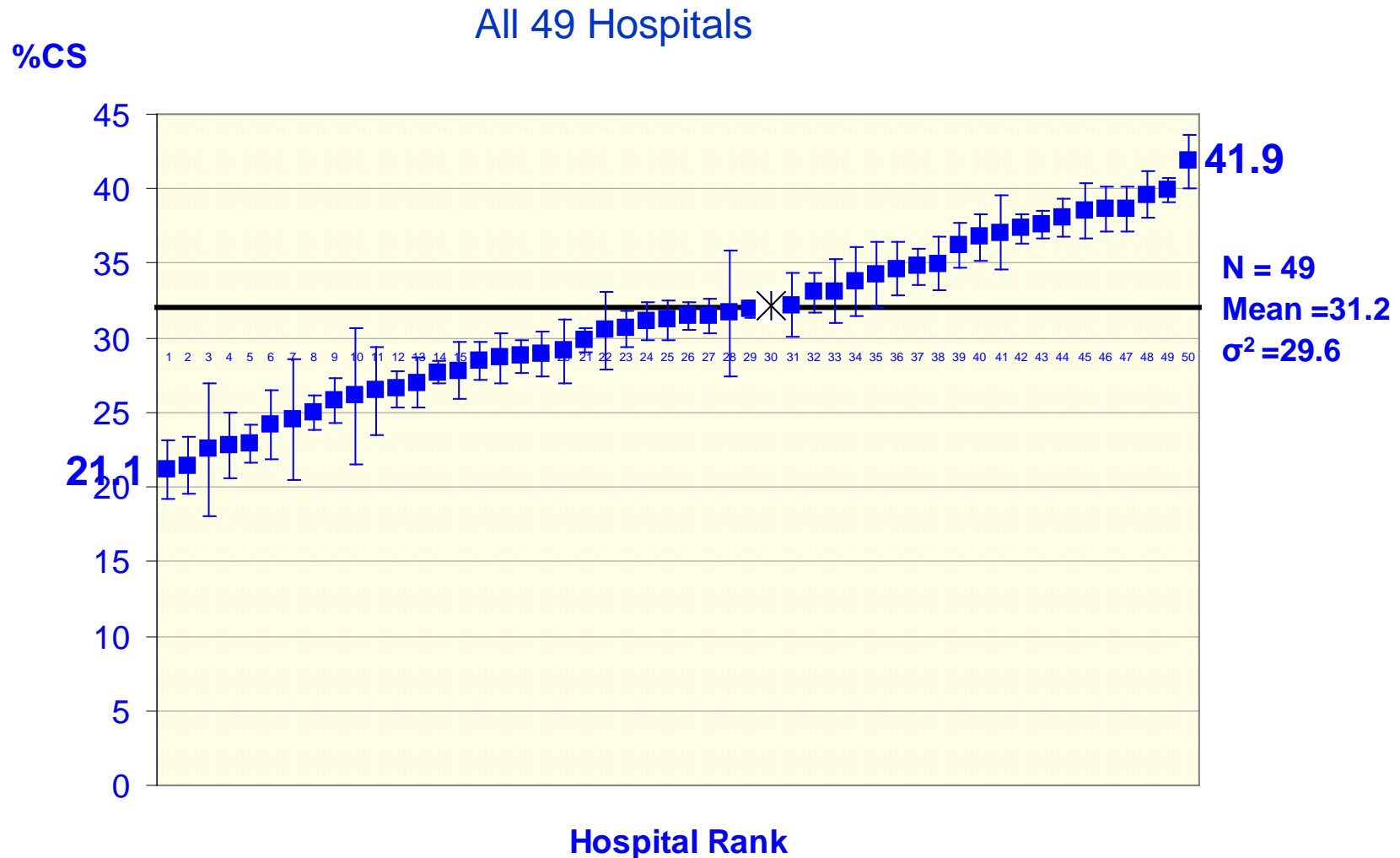
Cesarean rates among first-time mothers in the states of Mexico, 2014



Source: Guendelman S. *Health Affairs* 2017; 36: 718.

***Variation is not just at the
state level but at the
hospital level as well***

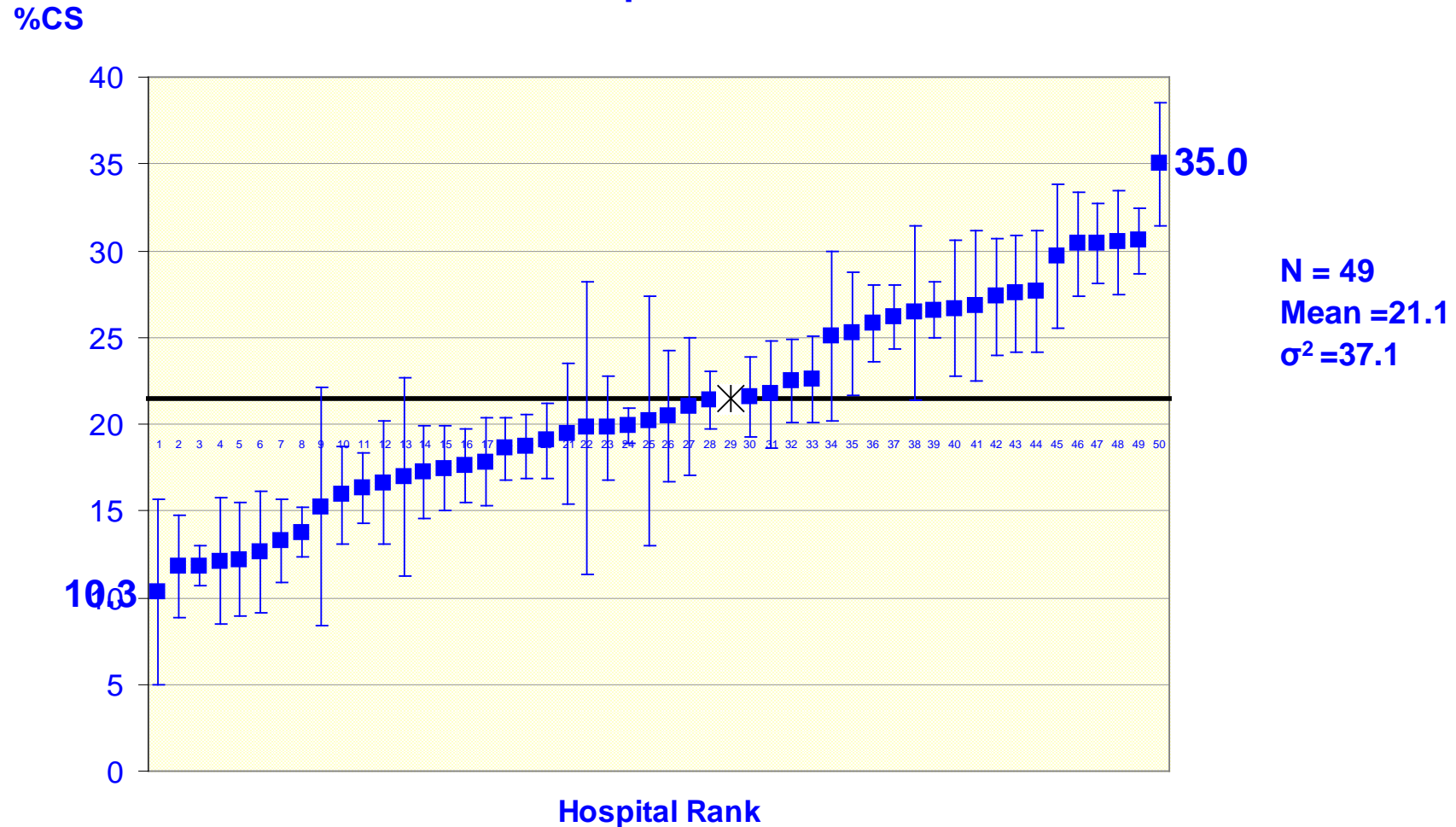
% Cesarean Deliveries by Hospital for *ALL MA Births*, 2004-2006



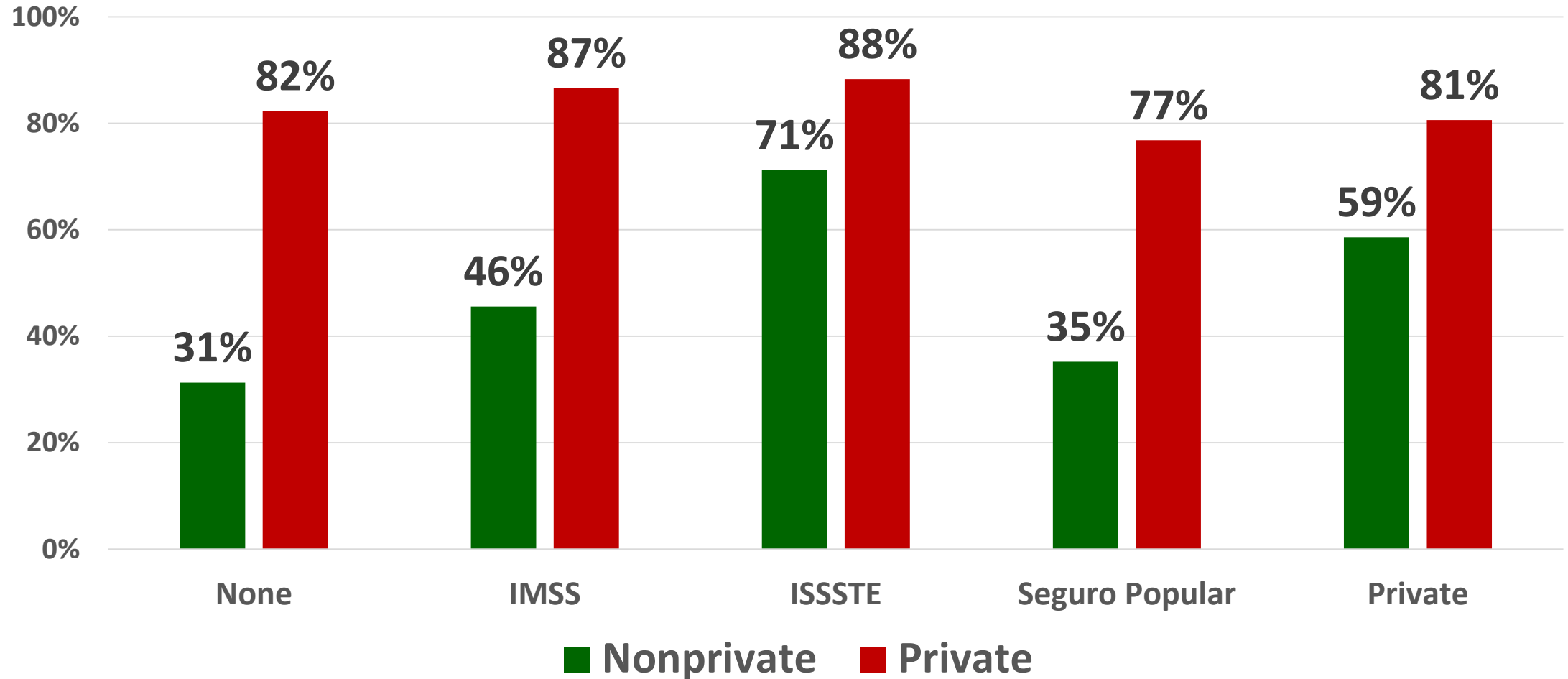
% Cesarean Deliveries by Hospital

for *NTVS, Spontaneous Labor, BWT 2500-4000g* Births

All Hospitals



Cesarean Rates first-time Mexican mothers by type of facility and insurance

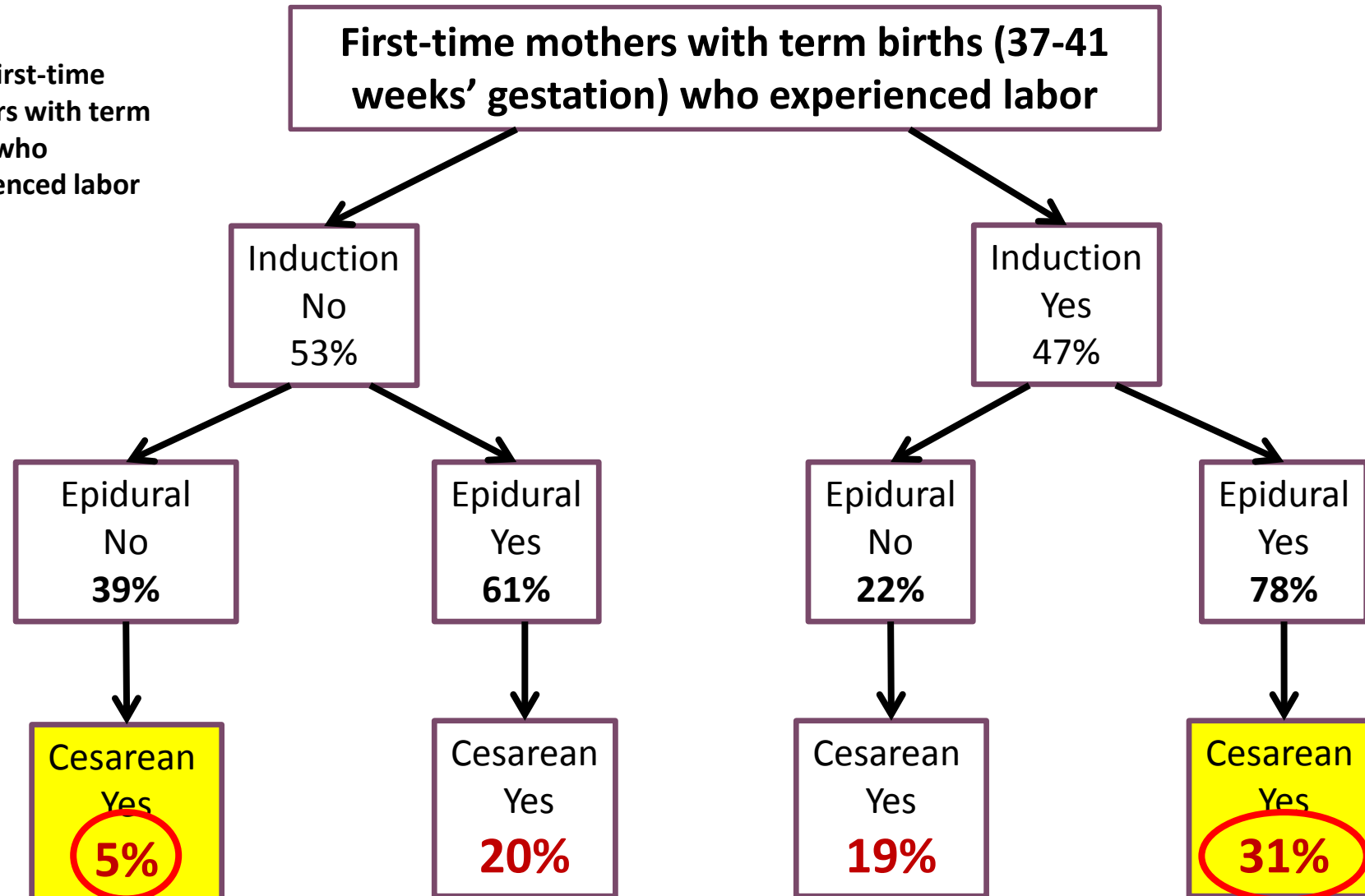


***How does a culture of
intervention get manifested
in a hospital setting?***

***Consider the Cascade of
Interventions***

Cascade of interventions in first-time mothers with term births who experienced labor

Base: first-time mothers with term births who experienced labor
n=750



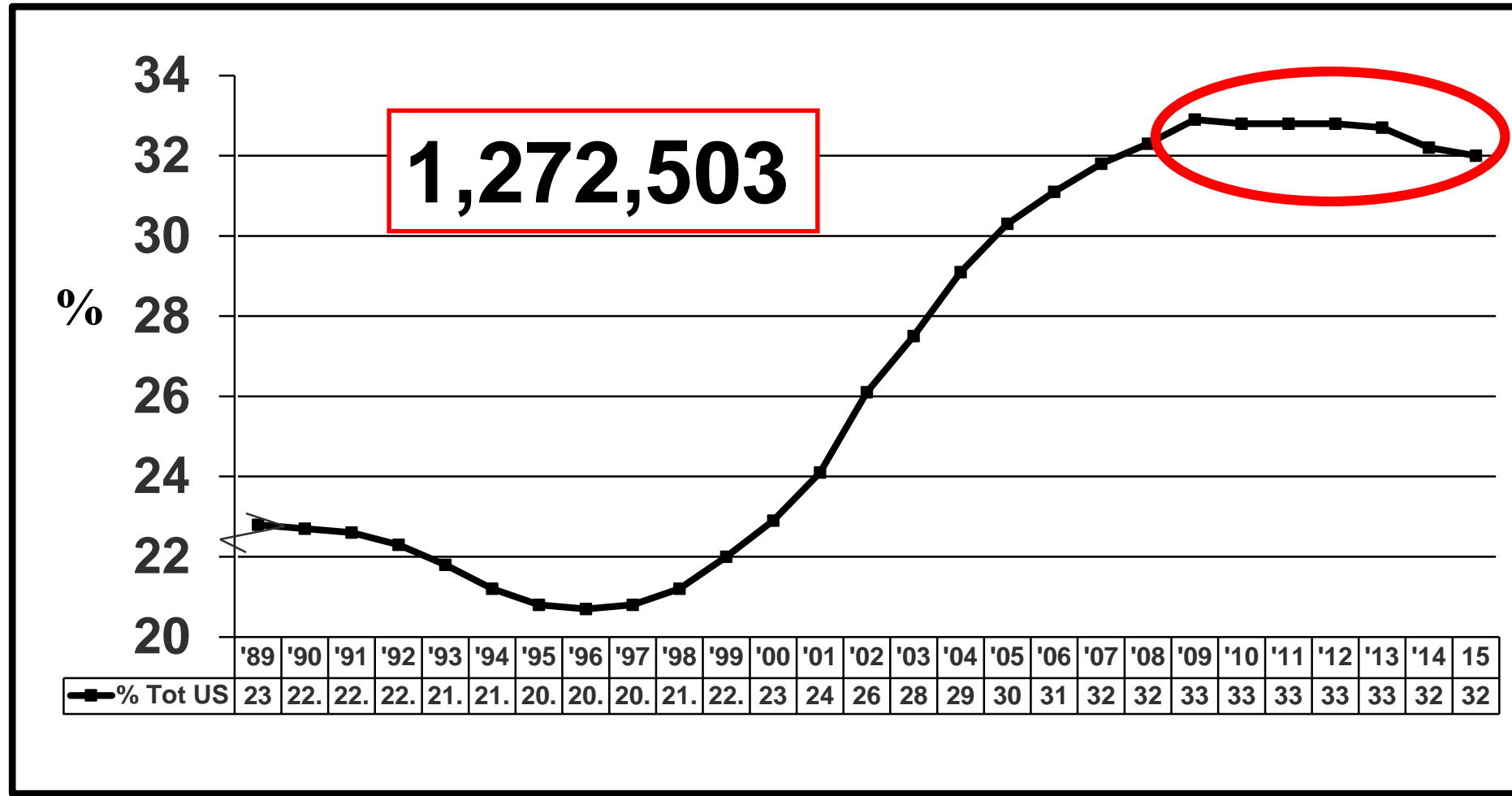
Source:
Listening to
Mothers III

In this group, which included 85% of first-time mothers, the overall epidural rate was 69% and overall cesarean rate was 21%.

***So is a rising cesarean
rate inevitable?***

ABSOLUTELY NOT

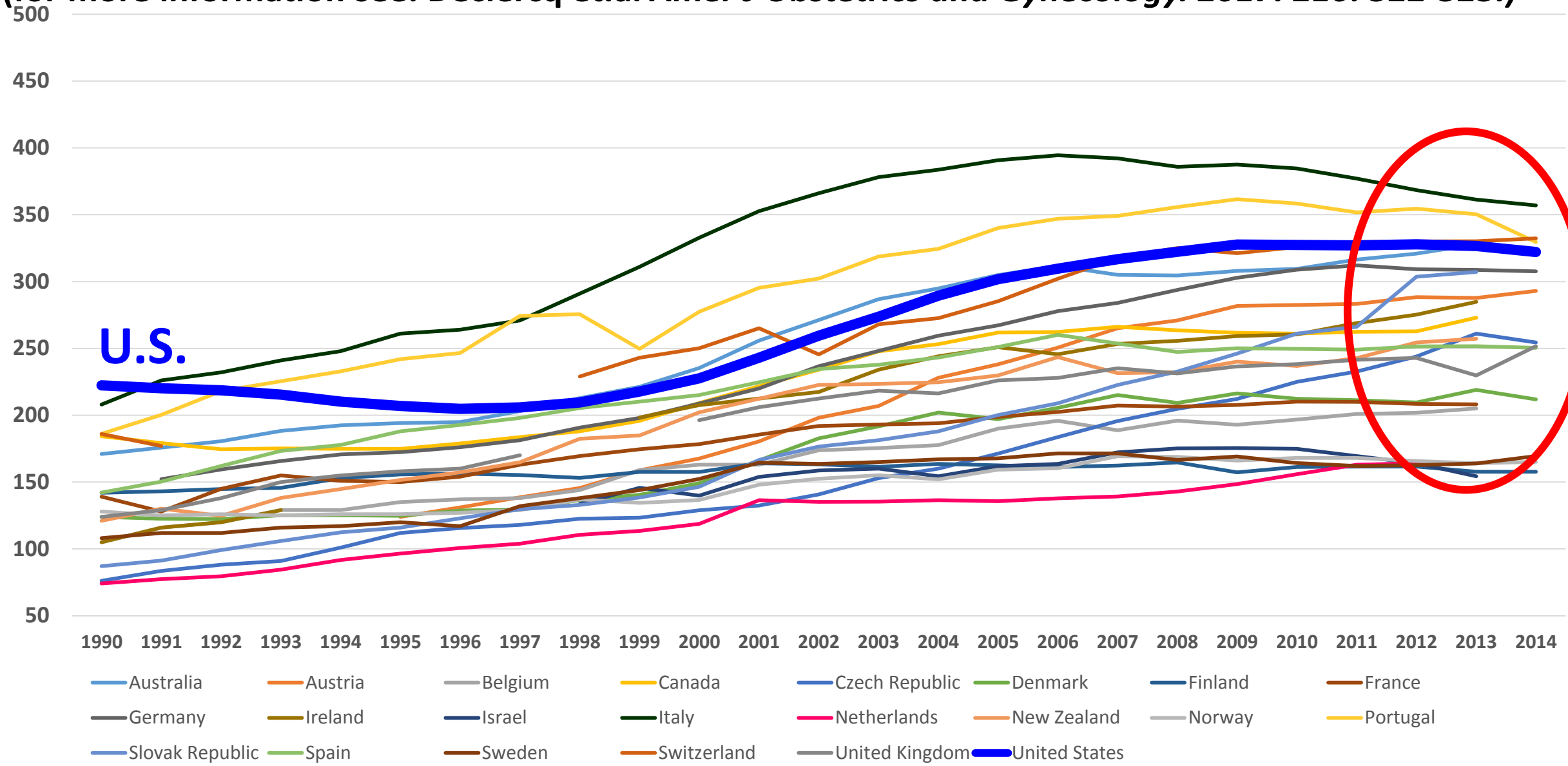
US Cesarean Rates, 1989-2015



Source: National Center for Health Statistics Annual Birth Reports

The Plateauing of Overall Cesarean Rates (per 1,000) in Industrialized Countries, 1990 – 2014

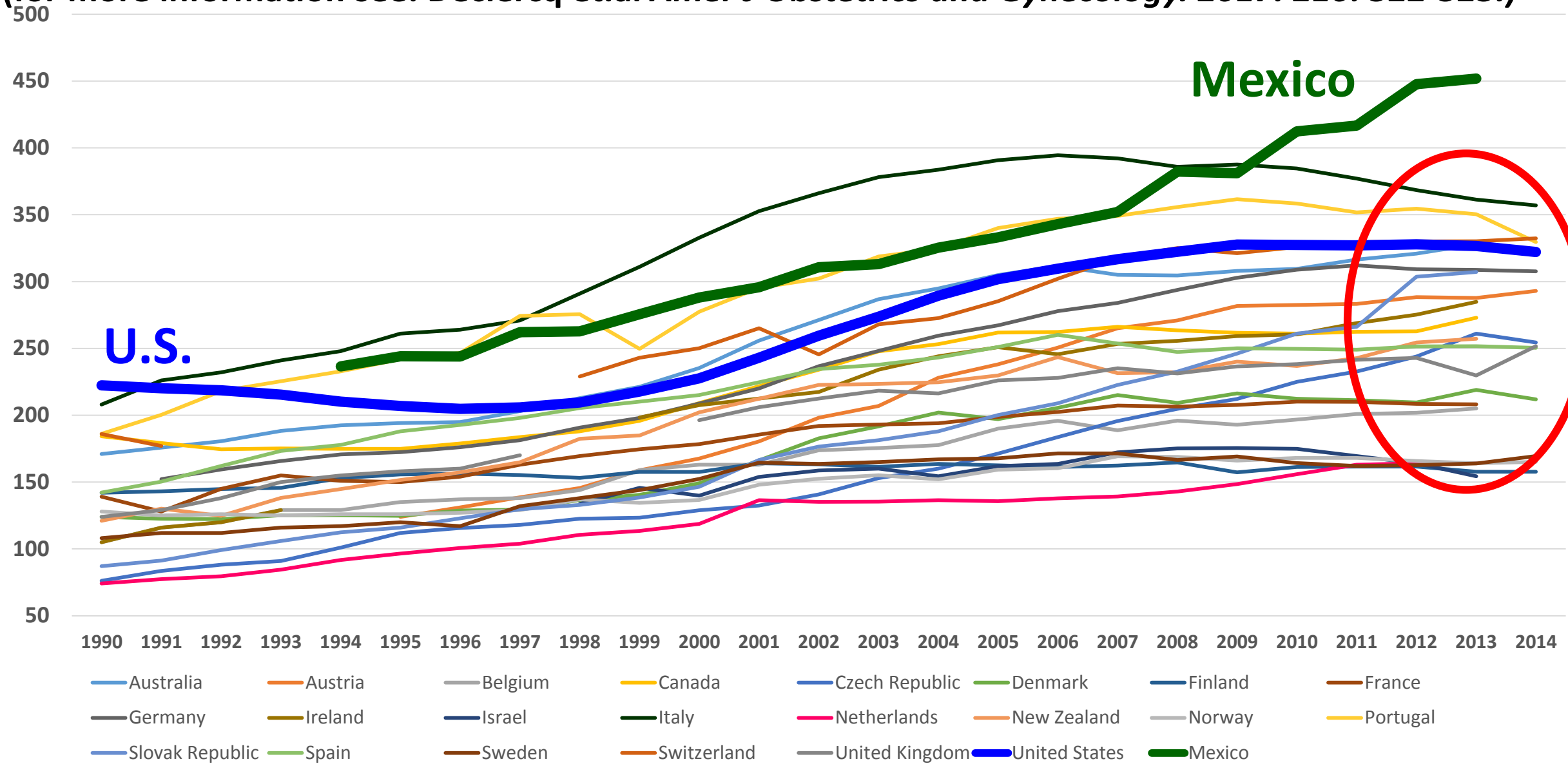
(for more information see: Declercq et.al *Amer J Obstetrics and Gynecology*. 2017. 216: 322-323.)



Source: Declercq, et al. *Am J OB Gyn*. 2017 216:322-3.

The Plateauing of Overall Cesarean Rates (per 1,000) in Industrialized Countries, 1990 – 2014

(for more information see: Declercq et.al *Amer J Obstetrics and Gynecology*. 2017. 216: 322-323.)



Recommendations

- **You have good data** – use it to do more analysis of the outcomes of cesareans. Long term placental difficulties.
- **Hard stop** – no inductions or CS before 39 weeks without a medical indication
- **Change financial incentives** – go to global payments (same payment for a vaginal or CS birth) so the focus is on outcomes not process.

Recommendations

- **WAIT!** – ACOG recommendation focuses on patience in labor management.
- **Listen to Mothers** – do a national survey of mothers about their experiences in birth.
- **Why not midwives?** – formally train midwives like the rest of the world, since evidence shows they more than capably handle low risk cases at less cost with better outcomes

***Will Mexico join the rest of
the industrialized world in
reducing unnecessary
cesareans?***



**Questions and
Comments?**

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