Cesáreas en el Mundo

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Collaborators
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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

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

- <34: 3% Green
- 34-36: 1% Red
- 37-38: 2% Red
- 39: 14% Green
- 40: 37% Red
- 41: 14% Green
- 42+: 2% Red

BirthByTheNumbers.org
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

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

So we’ve changed the birthing process without much improvement in outcomes.

Source: OECD Health Data 2016
How has intervention changed the nature of birth in Mexico?
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
Perinatal Mortality Rate (per 1,000 births), U.S. & Mexico, 1960-2014

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

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

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

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Obstetricians (per 1,000 births), U.S. & Mexico, 1990-2014
So let’s look at Cesareans

First, why should we care?
Cesarean Rates (%) Worldwide

Cesarean Rates (%) Americas

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

Neonatal Mortality Rate and Cesareans


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

Maternal Mortality Rate and Cesareans

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

Maternal Mortality Rate and Cesareans

Benefits are lost when a rate is > 19%

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

Between 2003 & 2010 CS Rate increased by 20%

From 2010-2015, CS rate unchanged

BirthByTheNumbers.org
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

BirthByTheNumbers.org
Is it Mothers’ Health getting worse?


17.6% 19.5% 20.5% 20.3%

Mothers’ Health?
Cesarean Rate Singleton Births by Prepregnancy Weight Range, U.S. 2013

Mothers’ Health?


- **Any Diabetes**: 2.2% in 1992, 3.4% in 2002, 4.4% in 2013
- **Any Hypertension**: 6.0% in 2013

* Either gestational or chronic condition

Source: CDC VitalStats, selected years.
Mothers’ Health?


Source: CDC VitalStats, selected years.
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

BirthByTheNumbers.org
The rise of the big baby

19 pounds

# Reasons why mothers experienced medical induction

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby was full term/close to due date</td>
<td>44%</td>
</tr>
<tr>
<td>Mother wanted to get pregnancy over with</td>
<td>19%</td>
</tr>
<tr>
<td>Care provider was concerned that mother was “overdue”</td>
<td>18%</td>
</tr>
<tr>
<td>Maternal health problem that required quick delivery</td>
<td>18%</td>
</tr>
<tr>
<td>Care provider was concerned about the size of the baby</td>
<td>16%</td>
</tr>
<tr>
<td>Water had broken and there was a concern about infection</td>
<td>12%</td>
</tr>
<tr>
<td>Mother wanted to control timing of birth for work or other personal reasons</td>
<td>11%</td>
</tr>
<tr>
<td>Care provider was concerned that amniotic fluid around the baby was low</td>
<td>11%</td>
</tr>
<tr>
<td>Care provider was concerned that baby was not doing well</td>
<td>10%</td>
</tr>
<tr>
<td>Mother wanted to give birth with a specific provider</td>
<td>10%</td>
</tr>
<tr>
<td>Some other reason</td>
<td>10%</td>
</tr>
</tbody>
</table>
## Reasons for primary and repeat cesarean birth

<table>
<thead>
<tr>
<th>Reason</th>
<th>Primary cesarean (n=368)</th>
<th>Repeat cesarean (n=376)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had had a prior cesarean <em>(asked of prior cesarean only)</em></td>
<td>n.a.</td>
<td>61%</td>
</tr>
<tr>
<td>Baby was in the wrong position</td>
<td>16%</td>
<td>3%</td>
</tr>
<tr>
<td>Fetal monitor showed the baby was having problems during labor</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>I had a health condition that called for procedure</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>Baby was having trouble fitting through</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Maternity care provider worried the baby was too big</strong></td>
<td><strong>9%</strong></td>
<td><strong>2%</strong></td>
</tr>
<tr>
<td>Provider tried to induce labor but it didn’t work</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>Problem with the placenta</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Labor was taking too long</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Past my due date</td>
<td>3%</td>
<td>-</td>
</tr>
<tr>
<td>Afraid to labor and have baby vaginally</td>
<td>3%</td>
<td>-</td>
</tr>
<tr>
<td>No medical reason</td>
<td>4%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Number of Ultrasounds

- None: 2%
- 1: 8%
- 2: 21%
- 3: 22%
- 4: 14%
- 5: 11%
- 6: 8%
- 7+: 15%

68% of mothers had ultrasound for weight

48% 4+ ultrasounds
**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?*

<table>
<thead>
<tr>
<th>31.2% YES</th>
<th>ALL</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual Weight</strong></td>
<td>7 lbs 5 ounces</td>
<td>7 lbs 14 ounces</td>
<td>7 lbs 1 ounce</td>
</tr>
<tr>
<td>Baby Actually Macrosomic (8lb 13ounces)</td>
<td>9.9%</td>
<td>19.7%</td>
<td>5.5%</td>
</tr>
</tbody>
</table>


BirthByTheNumbers.org
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 Mothers™ III
Pregnancy and Birth

Asking Mothers about Maternal Request Cesareans

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

http://www.childbirthconnection.org

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

<table>
<thead>
<tr>
<th></th>
<th>In first two months</th>
<th>Problem persisted to six months or more*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major new problem</td>
<td>Minor new problem</td>
</tr>
<tr>
<td>Cesarean only n=744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cesarean incision site pain</td>
<td>19%</td>
<td>39%</td>
</tr>
<tr>
<td>CS incision site infection</td>
<td>8%</td>
<td>16%</td>
</tr>
<tr>
<td>Vaginal only n=1656</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painful perineum</td>
<td>11%</td>
<td>30%</td>
</tr>
<tr>
<td>Infection from cut/torn perineum</td>
<td>5%</td>
<td>13%</td>
</tr>
</tbody>
</table>

* 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?

- **Extremely**
  - Vaginal: 3%
  - Cesarean: 10%

- **Quite a Bit**
  - Vaginal: 6%
  - Cesarean: 16%

- **Moderately**
  - Vaginal: 21%
  - Cesarean: 25%
Pressure to Accept Interventions by Method of Delivery

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

- Repeat Cesarean: 22%
- Primary Cesarean: 28%
- VBAC: 28%
- Vaginal: 7%

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

- Labor Arrest: 34%
- Nonreassuring fetal tracing: 23%
- Malpresentation: 17%
- Multiple Gestation: 7%
- Maternal-Fetal Macrosomia: 5%
- Other Obstetrics: 4%
- Maternal Request: 4%
- Preeclampsia: 3%
- Macrosomia: 3%

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

*Singleton, Vertex, Full Gestation Births

BirthsByTheNumbers.org

Source: National Center for Health Statistics Annual Birth Reports

1,272,503
Cesarean Rates, Low Risk*, First-Time Mothers for Medical Risk Factors & Labor Complications

*Singleton, Vertex, Full Gestation Births

BirthByTheNumbers.org
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.*
Cesarean rates among first-time mothers in the states of Mexico, 2014

Source: GuendelmanS. *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

All 49 Hospitals

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

Source: Listening to Mothers III
So is a rising cesarean rate inevitable?

ABSOLUTELY NOT

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.)

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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