Community Intervention
Towards a New Generation of Mexicans

Maternal and Perinatal Mortality in Mexico

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General Director

October, 2011
SIZING UP THE PROBLEM
MATERNAL MORTALITY RATE

(MMR) WHO, 2009

MATERNAL MORTALITY IS HIGHEST IN COUNTRIES OF SUB-SAHARIAN AFRICA AND SOUTH ASIA

Maternal mortality ratios (MMR) per 100,000 live births (2005)

**Maternal Mortality Rate**

(MMR) **México, 1990 - 2009**

<table>
<thead>
<tr>
<th>Year</th>
<th>MMR (per 100,000 births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>89.0</td>
</tr>
<tr>
<td>1991</td>
<td>87.0</td>
</tr>
<tr>
<td>1992</td>
<td>86.4</td>
</tr>
<tr>
<td>1993</td>
<td>85.4</td>
</tr>
<tr>
<td>1994</td>
<td>84.3</td>
</tr>
<tr>
<td>1995</td>
<td>83.2</td>
</tr>
<tr>
<td>1996</td>
<td>83.1</td>
</tr>
<tr>
<td>1997</td>
<td>82.0</td>
</tr>
<tr>
<td>1998</td>
<td>81.6</td>
</tr>
<tr>
<td>1999</td>
<td>81.0</td>
</tr>
<tr>
<td>2000</td>
<td>72.6</td>
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<tr>
<td>2001</td>
<td>70.8</td>
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<tr>
<td>2002</td>
<td>62.7</td>
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<td>2003</td>
<td>61.0</td>
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<tr>
<td>2004</td>
<td>61.8</td>
</tr>
<tr>
<td>2005</td>
<td>58.6</td>
</tr>
<tr>
<td>2006</td>
<td>55.6</td>
</tr>
<tr>
<td>2007</td>
<td>57.2</td>
</tr>
<tr>
<td>2008</td>
<td>62.2</td>
</tr>
<tr>
<td>2009*</td>
<td>MMR 50</td>
</tr>
</tbody>
</table>

* MMR in 100,000 births

Sources: INEGI-SSa/DGIS, SSa, México
Maternal mortality in the United States of America

Source: NSVR, ACOG
Investing in Maternal Health

Development Millennium Goals
75% decrease from 1990 to 2015

- 8.98%
9 years
Annual: 0.9%

- 31.35%
8 years
Annual: 3.9%

Thousand millions Mexican pesos

* MMR in 100,000 births

Sources: INEGI-SSa/DGIS, SSa, México
For every woman who dies due to pregnancy complications:
30 are left with some permanent disability

World Health Organization

June, 2009
Araceli, 17 years old
Eclampsia
Attended in a hospital

Twin vaginal delivery
Both twins delivered alive
Female: 2,500 g
Male: 1,600 g

Mother: Quadriplegic
Social and Economic Impact of Maternal Mortality

- Social Development
  - Family nucleus affected

- Surviving Newborns
  - > 3-10 times chance of dying in the next 2 years

- Complications from Pregnancy, Labor and Puerperium
  - Main causes for impairment, disease or death in women at reproductive age in developing countries
Quality of Medical Attention and Maternal Death
Quality of Hospital Care

- 93% deliveries are attended by physicians
- 86% maternal deaths at medical facilities
- 82% maternal deaths related to deficiencies in obstetric emergency procedures
- Necropsy is practiced in only 12.7% cases
WHAT TO DO?

Reach a Consensus among Governmental Agencies (UNFPA, UNICEF, OMS, OPS, FCI)

Promote Reproductive Health Education Coverage by Qualified Personnel
Quality of Obstetric Emergency Care

Advice and Supervision INPer

CNEGYSR/SPPS

INPer
Focus on the actions for a proper obstetric emergency attention within the Mexico City metropolitan area.

Integration and Coordination CNEGySR

Formation of Specialized Human Resources INPer
Interventions to reduce Perinatal Mortality

**Interventions in women**
- Contraception
- Nutrition
- Micronutrients
- Detection ITS
- Substance abuse
- Preconceptional care
- Timely identification of the pregnant woman

**ALFRED BRANN METHOD**

**Interventions in NB care**
- Clean delivery
- Neonatal reanimation
- Thermic control
- Lactation
- Hospital amigo
- Parent education
- Timely identification and management of NB at risk

**Interventions in NB**
- Parent education
- Child surveillance
- Nutrition/lactation
- Immunizations
- Growth and development
- Anticipation guides
- IRAS, EDAS, lesions
- Newborns at risk
- Community Services

**Maternal fetal Interventions**
- Pregnant women identification
- Surveillance and pregnancy control
- Timely risk detection
- Personal care guide
- Intrapartum monitoring
- Surgical services
- Pregnancy followup in high risk cases

<1500 g

>1500 g
Urban Poverty, consequences and necessity of intervention
53 millions Mexican people live in patrimonial poverty

40 % in urbane localities
Urban Poverty, consequences and necessity of intervention

Urban localities: > 15 000 inhabitants
## Municipalities with more people in patrimonial poverty

<table>
<thead>
<tr>
<th>Municipio</th>
<th>Number People</th>
<th>Incidence of Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iztapalapa</td>
<td>757,622</td>
<td>41.6</td>
</tr>
<tr>
<td>Gustavo A. Madero</td>
<td>418,170</td>
<td>35.0</td>
</tr>
<tr>
<td>Ciudad Nezahualcóyotl</td>
<td>583,711</td>
<td>51.2</td>
</tr>
<tr>
<td>Ecatepec de Morelos</td>
<td>837,200</td>
<td>49.6</td>
</tr>
<tr>
<td>Puebla</td>
<td>543,675</td>
<td>36.6</td>
</tr>
<tr>
<td>León</td>
<td>488,117</td>
<td>38.2</td>
</tr>
<tr>
<td>Acapulco</td>
<td>431,649</td>
<td>60.1</td>
</tr>
<tr>
<td>Aguascalientes</td>
<td>346,918</td>
<td>48.0</td>
</tr>
<tr>
<td>Guadalajara</td>
<td>490,816</td>
<td>30.7</td>
</tr>
<tr>
<td>Ciudad Juárez</td>
<td>438,281</td>
<td>33.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,336,159</strong></td>
<td><strong>41.2%</strong></td>
</tr>
</tbody>
</table>
Prematurity and Low Birth Weight
Secretaría de Salud, México 2001-2008

IZTAPALAP A, 2009: 12% 17%

Fuente: SSA/DGIS; SIS
Poverty and Pregnancy
Objective

Structure a simple and replicable intervention protocol intended to:

• Strengthen prenatal attention quality control
• Improve health conditions in mothers and NB
• Increase birth weight by 200 g

Proyecto Hacia una Nueva generación de Mexicanos
Rodríguez R, Mancilla J, Ahued A et al. Pilot Study Iztapalapa
Benefits

MOTHER
• Early detection of pregnancy complications
  • Hypertension, gestational diabetes, cervico-vaginitis, urinary tract infection, premature membrane rupture

FETUS
• Intrauterine growth-retardation prevention
• Congenital malformation detection

NEWBORN
• Newborns ≥ 37 week old pregnancies
• Newborn weight increase average 200 g

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Community Intervention Project
Towards a New Generation of Mexicans

School
- Secundaria o mas: 76%
- Primaria completa: 10%
- Analfabeta o primaria incompleta: 14%

Acceptance of Pregnancy
- aceptacion: 82%
- rechazo: 18%

Partner
- Casada o union libre: 77%
- Viuda soltera o sin companero: 23%

IZTAPALAPA
PATRIMONIAL POVERTY 42%
Maternal Age (years)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>n = 407</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-18</td>
<td>101</td>
<td>24.8</td>
</tr>
<tr>
<td>19-23</td>
<td>122</td>
<td>29.9</td>
</tr>
<tr>
<td>24-28</td>
<td>96</td>
<td>23.5</td>
</tr>
<tr>
<td>29-33</td>
<td>55</td>
<td>13.5</td>
</tr>
<tr>
<td>34-38</td>
<td>24</td>
<td>5.8</td>
</tr>
<tr>
<td>39-43</td>
<td>9</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Average 23
Minimum 13
Maximum 43

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# Nutritional Status According to BMI

## BMI Evaluation Criteria

<table>
<thead>
<tr>
<th>Weight</th>
<th>BMI (1st trimester)</th>
<th>n= 407</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>&lt;18.5</td>
<td>12</td>
<td>2.9</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5 a 24.9</td>
<td>129</td>
<td>31.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0 a 29.9</td>
<td>153</td>
<td>37.5</td>
</tr>
<tr>
<td>Obesity I</td>
<td>30.0 a 34.9</td>
<td>88</td>
<td>21.6</td>
</tr>
<tr>
<td>Obesity II</td>
<td>35 a 39.9</td>
<td>20</td>
<td>4.9</td>
</tr>
<tr>
<td>Obesity III</td>
<td>&gt;40.0</td>
<td>4</td>
<td>0.9</td>
</tr>
</tbody>
</table>

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## Risk Detection

<table>
<thead>
<tr>
<th>Risk</th>
<th>Count (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>126</td>
<td>30.9</td>
</tr>
<tr>
<td>Medium</td>
<td>182</td>
<td>44.7</td>
</tr>
<tr>
<td>High</td>
<td>99</td>
<td>24.3</td>
</tr>
</tbody>
</table>

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Preliminary results

- August, 2011
- Early detection since the first contact (n=407)
- 69% pregnancy with medium or high risk

Eclampsia and preeclampsia prevention
- 22 risk US (Aspirin 100 mg/d) …Only 4 cases

- 195 newborns
- Prematurity 4% (2009, 12%)
- Low Birth Weight 9% (2009, 17%)

Proyect: Hacia una Nueva generación de Mexicanos
Rodríguez R, Mancilla J, Ahued A et al. Pilot study Iztapalapa
Breast Feeding

• Exclusive for 6 months
Instituto Nacional de Perinatología
THANK YOU

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