Argentina’s Plan Nacer: Enabling a Healthy Start for Babies Born into Poverty

Paul Gertler
Paula Giovagnoli
Sebastian Martinez

September 18, 2013
Center for Global Development, Washington DC
Today....

• Context:

  Why is Plan Nacer Unique?

• Evaluation
Priority: Improve Birth Outcomes of Babies Born into Poverty…

- Low Birth Weight
- Associated with poor
  - Health
  - Cognitive development
  - Education
  - Earnings
- Uninsured & little access to quality care
Argentina’s Plan Nacer

• Improve maternal and child health
  – Access to quality care

• Mechanisms
  – Target uninsured users of public facilities
  – More money to providers
  – Incentives
Incentivized Financing Scheme

NATIONAL GOVERNMENT

Enrollment 60%

Health outcomes

Pay for performance

PROVINCIAL GOVERNMENTS

Pay for performance

Provincial Health Insurance

Fee for service

Health facility decides on the use of funds

EXTERNAL AUDIT

Umbrella Agreements

EXTERNAL AUDIT

Performance Agreements
Plan Nacer Similar to Other Programs

• Examples
  – Medicaid in United States
  – Seguro Popular in Mexico

• Local governments responsible for care of uninsured (poor)
  – Co-financed with national government
  – Capitation payment per enrollee
Plan Nacer Capitation More Sophisticated

• Payment Per Beneficiary
  – Medicaid (100%)
  – Seguro Popular (100%)
  – Plan Nacer (60%)

• Plan Nacer Adds Performance Incentives
  – Health outcomes
  – Utilization and quality
  – Up to 40% of max payment
Innovative Features

• Nation to Province Capitation
  – Performance Incentives & Health Outcomes

• Few others use health outcomes incentives for local governments
  – Indonesia: villages incentives payments for nutrition outcomes
  – India: village incentives for open defecation free

• Many use FFS payments to providers
Today....

• Context:

• Evaluation:
  – Questions
  – Data
  – Methods
  – Results
Birth Certificate Data

- Universe in public hospitals
  - 6 northern Provinces
  - 2004-08

- Very large sample sizes

- Important rare outcomes
  - Low Birth weight
  - Neonatal mortality
Eligible and Beneficiary Population

![Graph showing the comparison between Eligible and Beneficiary populations over the years 2004 to 2008. The graph indicates a decrease in the Eligible population and an increase in the Beneficiary population.]
<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Care</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prenatal Care in 1st 12 weeks</td>
<td>0.16</td>
<td>0.23</td>
</tr>
<tr>
<td>Prenatal Care in 1st 20 weeks</td>
<td>0.58</td>
<td>0.65</td>
</tr>
<tr>
<td>Number of Prenatal Care Visits</td>
<td>4.42</td>
<td>4.90</td>
</tr>
<tr>
<td>Tetanus Vaccine</td>
<td>0.73</td>
<td>0.67</td>
</tr>
<tr>
<td>Caesarian Section</td>
<td>0.21</td>
<td>0.22</td>
</tr>
<tr>
<td><strong>Health Outcomes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stillbirth</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Birth Weight (kilos)</td>
<td>3.24</td>
<td>3.23</td>
</tr>
<tr>
<td>Low Birth Weight (&lt;2500 gm)</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>APGAR Score at 5 Minutes</td>
<td>8.75</td>
<td>8.78</td>
</tr>
<tr>
<td>Neonatal Mortality/1000 Births</td>
<td>9.73</td>
<td>6.77</td>
</tr>
</tbody>
</table>
Evaluation Objectives:

Impact of a clinic enrolling in Plan Nacer on outcomes of:

• all patients regardless beneficiary status
  – (Intent to Treat):

• beneficiary patients
  – (Treatment on The Treated):

• non-beneficiaries patients
  – (Spillover)
Methods

• **ITT: Difference in Differences**
  – Phased clinic enrollment over time
  – Clinic and province-time fixed effects
  – Balance and pre-intervention trend tests

• **TOT & Spillover: IV Difference in Differences**
  – Clinic enrolled
  – Time enrolled
  – Demographics*enrollment
Timing of Clinic Enrollment into Plan Nacer

![Graph showing the cumulative probability of enrollment over quarters from 2004q3 to 2008q3. The graph includes a step function and a normal cumulative distribution function (c.d.f.).]
Mean Birth Weight by Beneficiary Status Over Time

- Birth weight (grams)
  - 2004
  - 2005
  - 2006
  - 2007
  - 2008

- Beneficiary
- Non-Beneficiary
Birth Weight Event History Analysis

![Graph showing changes over semesters before and after the clinic began Plan Nacer.](image-url)
Table 4: Impact of Plan Nacer on Birth Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Still Birth</th>
<th>Birth Weight (grams)</th>
<th>Low Birth Weight</th>
<th>APGAR (5 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Intent-to-Treat</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic on Plan Nacer</td>
<td>-0.003***</td>
<td>23.1***</td>
<td>-0.01***</td>
<td>0.03**</td>
</tr>
<tr>
<td>Non-treatment Mean</td>
<td>0.009</td>
<td>3226.1</td>
<td>0.09</td>
<td>8.75</td>
</tr>
<tr>
<td><strong>B. Treatment-on-Treated</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan Nacer Beneficiary</td>
<td>-0.009***</td>
<td>69.5***</td>
<td>-0.02***</td>
<td>0.09***</td>
</tr>
<tr>
<td>Non-Beneficiary Mean</td>
<td>0.010</td>
<td>3224.6</td>
<td>0.09</td>
<td>8.75</td>
</tr>
</tbody>
</table>
Table 3: Impact of Plan Nacer on Prenatal Care Utilization and Quality

<table>
<thead>
<tr>
<th></th>
<th>Prenatal Care Initiated in 1&lt;sup&gt;st&lt;/sup&gt; 12 weeks</th>
<th>Prenatal Care Initiated in 1&lt;sup&gt;st&lt;/sup&gt; 20 weeks</th>
<th>Number Prenatal Care Visits</th>
<th>Tetanus Toxoid Vaccine</th>
<th>Cesarean Section</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Intent-to-Treat</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic on Plan Nacer</td>
<td>0.00</td>
<td>0.00</td>
<td><strong>0.15</strong>*</td>
<td><strong>0.034</strong>*</td>
<td>-0.02**</td>
</tr>
<tr>
<td>Mean of Non-treated</td>
<td>0.19</td>
<td>0.61</td>
<td>4.50</td>
<td>0.79</td>
<td>0.23</td>
</tr>
<tr>
<td><strong>B. Treatment-on-Treated</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan Nacer Beneficiary</td>
<td>0.02</td>
<td>0.01</td>
<td><strong>0.68</strong>*</td>
<td><strong>0.105</strong>*</td>
<td>-0.06***</td>
</tr>
<tr>
<td>Mean of Non-treated</td>
<td>0.19</td>
<td>0.61</td>
<td>4.45</td>
<td>0.78</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A. Intent-to-Treat</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic on Plan Nacer</td>
<td>-0.002**</td>
<td>-0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic on Plan Nacer * LBW</td>
<td></td>
<td>-0.010**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBW</td>
<td></td>
<td>0.062***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Beneficiary Mean</td>
<td>0.009</td>
<td>0.009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Beneficiary Mean/LBW</td>
<td></td>
<td>0.065</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. Treatment on the Treated</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan Nacer Beneficiary</td>
<td>-0.007**</td>
<td>-0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan Nacer Beneficiary * LBW</td>
<td></td>
<td>-0.033***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBW</td>
<td></td>
<td>0.062***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Beneficiary Mean</td>
<td>0.010</td>
<td>0.010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Beneficiary Mean/LBW</td>
<td></td>
<td>0.065</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How Plan Reduced Neonatal Mortality

• Neonatal mortality all from LBW babies

• Lower by
  – Preventing LBW
  – Better care for LBW babies

• Find
  – 54% of reduction from preventing LBW
  – 46% from better care for LBW babies
Lessons

• Plan Nacer innovative

• Very effective
  – More & better prenatal care
  – Improved birth outcomes
  – Lower neonatal mortality

• Maybe a good model for others to consider

• Birth/Medical records valuable for evaluation
Limitations

• Only 6 Provinces

• Limited data on Mechanisms
  - Utilization
  - Quality of care

• Nothing on postnatal
Next Steps

• Cost-Effectiveness
• Expand to other Provinces
  – Combined with CCT
• Mechanisms
  – Detailed utilization
  – Quality of care
• Post natal care and outcomes
Many Thanks to All

Contact information:

Paul Gertler
Li Ka Shing Professor of Economics
UC Berkeley
Gertler@haas.berkeley.edu