Long Run Effects of Temporary Incentives on Medical Care Productivity

JUNE 11, 2015

PAULO CELHAY
PAUL GERTLER
PAULA GIOVAGNOLI
CHRISTEL VERMEERSCH
Main findings

TEMPORARY INCENTIVES HAD A LONG-RUN IMPACT ON MEDICAL CARE PRODUCTIVITY

TEMPORARY INCENTIVES HELPED OVERCOME THE INITIAL COST OF IMPROVING MEDICAL CARE ROUTINES
Routines in medical care

- Medical care is a complex technology
- Coordination of team activities is key
- Routines = “Established rules”, “standard operating procedures” that become habits
Institutions have a hard time changing their routines.
.. It takes effort
.. It takes time
.. It might be costly
Medical care routines can be suboptimal

E.g.: Adherence to clinical practice guidelines (best-practice) is low.

<table>
<thead>
<tr>
<th>Location</th>
<th>Adherence to CPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK - Asthma</td>
<td>84%</td>
</tr>
<tr>
<td>UK - Diabetes</td>
<td>81%</td>
</tr>
<tr>
<td>Mexico - Prenatal Care</td>
<td>75%</td>
</tr>
<tr>
<td>Netherlands - Family</td>
<td>67%</td>
</tr>
<tr>
<td>USA - Chronic Conditions</td>
<td>60%</td>
</tr>
<tr>
<td>USA - Preventive Care</td>
<td>50%</td>
</tr>
<tr>
<td>Indonesia - Tuberculosis</td>
<td>46%</td>
</tr>
<tr>
<td>Rwanda - Prenatal Care</td>
<td>45%</td>
</tr>
<tr>
<td>Tanzania - Malaria</td>
<td>24%</td>
</tr>
<tr>
<td>India - Diahrrhea</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Authors’ elaboration based on Schuster et al. (1998); Grol (2001); Campbell et al. (2007); Das and Gertler (2007); and Gertler and Vermeersch (2012).
Role of incentives – causal chain

- Initial/Upfront cost inhibits change of routines

- Financial incentives may help overcome this initial cost

- Once the institution adopts new routines, it will continue them as long as recurrent costs are covered.
The Misiones experiment

Misiones Province
The Misiones experiment

- **Aim**: Increase the probability that 1st prenatal visits take place in first trimester
  - In primary care setting
- **Intervention**: Temporary (8 months) increase in fees

### Fee-for-service payment for 1st prenatal visit before week 13

- **Pre & post periods**
  - Treatment: 40 Pesos
  - Control: 40 Pesos

- **Intervention period**
  - Treatment: +200% increase, 120 Pesos
  - Control: 40 Pesos
The Misiones experiment

- **Identification strategy:**
  - Randomized assignment of 37 primary care clinics to treatment and control
  - Assignment not fully respected (but close enough) → use IV estimator

<table>
<thead>
<tr>
<th></th>
<th>Treated</th>
<th>Not treated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assigned to treatment</strong></td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td><strong>Assigned to control</strong></td>
<td>1</td>
<td>18</td>
</tr>
</tbody>
</table>
Data

- Clinic records
  - services delivered
- Registry of Plan Nacer beneficiaries
  - beneficiary status of the mother
- Hospital medical records
  - birth outcomes

link using the mother’s national identity number
Results
Weeks pregnant at first prenatal visit

![Graph showing changes in weeks pregnant at first prenatal visit over time with a decrease of 1.47 in the POST period compared to the PRE period.](image-url)
Proportion of mothers with prenatal visit before week 13

First Visit Before Week 13


PRE

POST

+0.11

Treatment

Control
Density of birth weight

We do not find an impact on birth weight.
Mechanisms

Changes in Routines

Evidence from In-depth Interviews
What did treatment clinics do?

- **Change in assignment of incentives to personnel**
  - Conditioned on number of women brought in

- **Change in routines to improve efficiency of outreach by community health workers**
  - Offer pregnancy tests to mothers when picking up milk for their children
  - Visit adolescents when parents aren’t home
  - Visit women who abandoned birth control pills
  - Organize the Ob/Gyn schedule to ensure predictability of service
Increase in maternal-child “hits” due to outreach

- Treatment and comparison clinics equally paid for outreach activities that result in actual maternal-child service at the clinic
Why no impact on birth outcomes?

- Hypothesis: Impact of early prenatal care is uneven in the population
  - Need to be able to reach very high risk women
  - Impacts are washed out in a population average
Conclusions

Incentives increased initiation of prenatal care before week 13 by 35%.

Effect persisted for at least one year after the incentives ended.

Temporary incentives help providers to overcome inertia and change clinical practice routines.

Need to tailor incentives to target high-risk populations.
Acknowledgements

Martin Sabignoso, National Coordinator of Plan Nacer and Humberto Silva, National Head of Strategic Planning of Plan Nacer led the development and implementation of the experiment.

Luis Lopez Torres and Bettina Petrella from the Misiones Office of Plan Nacer oversaw the implementation of the pilot facilitated access to provincial data, supported the authors in interpreting datasets and the provincial legal framework and in carrying out the in-depth interviews.

Fernando Bazán Torres, Ramiro Florez Cruz, Santiago Garriga, Alfredo Palacios, Rafael Ramirez, Silvestre Rios Centeno, and Adam Ross provided excellent assistance and project management support.

Alvaro Ocariz, Javier Minsky and the staff of the Information Technology unit at UEC provided valuable support in identifying sources of data.

Sebastian Martinez, Luis Perez Campoy, Vanina Camporeale and Daniela Romero contributed to the initial design of the pilot.

The Health Results Innovation Trust Fund (HRITF) and the Strategic Impact Evaluation Fund (SIEF) of the World Bank generously funded the evaluation.

The opinions in the paper are of the authors alone and do not necessarily represent the opinions of the funder or their affiliated institutions.