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Using Impact Evaluation Research to Drive Innovation & Improve Outcomes in Health

May 2-5, 2017
Lagos, Nigeria
Improving Access to Maternal Health Care Services: Evaluating the SURE-P Maternal and Child Health Project

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Nigeria: high rates of maternal mortality; strong association with short supply of midwives and insufficient healthcare infrastructure

SURE-P aimed to increase institutional deliveries, skilled birth attendance and use of antenatal care.

Original design combined supply-side and demand-side components.
Subsidy Reinvestment and Empowerment Programme – Maternal and Child Health (SURE-P MCH)

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Supply side

• Recruitment, training and deployment of midwives to needy areas: 500 primary health centres (PHCs) across 36 states and Federal Capital Territory.
• Basic upgrading of PHC facilities

• Retention incentives given to midwives: monetary incentives and non-monetary ones
Supply side

- Recruitment, training and deployment of midwives to needy areas: 500 primary health centres (PHCs) across 36 states and Federal Capital Territory.
- Basic upgrading of PHC facilities
- **Retention incentives** given to midwives: monetary incentives and non-monetary ones

Demand side

- Conditional cash transfer
- Pregnant women to be paid N5000 in 4 tranches, conditional on attendance of antenatal care and institutional delivery
- Information disseminated: newspapers, radio and television, community meetings
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### Demand side

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- Information disseminated: newspapers, radio and television, community meetings
Impact evaluation components

SURE-P MCH: overall evaluation
- Impact of the first 9 months of SURE-P MCH on skilled birth attendance and use of antenatal care
- Non-experimental approach

Retention incentives to midwives
- Randomized evaluation
- Relative effectiveness of different types of incentives on midwives attrition.
- Analysis of complementarity between types of incentives
- Identification of impact channels of different incentives

30/03/2016
SURE-P MCH: PHC facilities

SURE-P MCH implemented first in 500 PHCs, starting **September 2012**

Spread across the 36 states of Nigeria and the Federal Capital Territory

Main selection criteria:

- **Location**: “underserved” area with a catchment area over 10,000
- **Facility staff**: at least one CHEW employed in the facility
- **Infrastructure**: existence of potable water and possibility of power supply (for at least some hours per day); this was upgraded by the programme
- Selection excludes the most poorly equipped PHCs and their respective catchment areas
SURE-P MCH overall impact evaluation: Policy question and empirical strategy

Was SURE-P MCH effective in improving skilled birth attendance and antenatal care use?

- We combine multiple sources of data for a non-experimental policy evaluation (difference-in-differences approach)
Data

**Household-level data:** Demographic and Health Surveys (DHS), 2013
- Data collected in geo-referenced clusters; women aged 15-49 interviewed
- Baseline: births from October 2003 to Sept 2012
- Endline: births from October 2012 to June 2013; 9 months of SURE-P implementation
Data

- **SURE-P**
  - September 2012


Endline births: June 2013

DHS 2013:

- Oct 2003
- Oct 2008
- June 2013
Data

**Household-level data:** Demographic and Health Surveys - 2013
- Data collected in geo-referenced clusters; women aged 15-49 interviewed
- Baseline: births from October 2008 to Sept 2012
- Endline: births from October 2012 to June 2013; 9 months of SURE-P implementation

**Facility-level data:**
- SURE-P PHCs: GPS coordinates of the 500 SURE-P facilities, some administrative data and purposefully collected facility-level data
- Other PHCs: Nigeria Millenium Development Goals Information System (NIMIS). GPS coordinates of all PHCs in Nigeria that offer maternal healthcare and skilled birth attendance in 2012
Treasted and control
Treated and control

SURE-P facilities

Non-SURE-P facilities
Treated and control

SURE-P facilities
Non-SURE-P facilities
12.7% private; 1% faith-based; rest public
Treated and control

SURE-P facilities
Non-SURE-P facilities
Households
Treated and control

2.5km radius
Treated and control

Treated households

Control households
Robustness check: sensitivity analysis

Treated households
Control households
Treated and control

- Clusters ≤ 2.5Km from the nearest SURE-P facility considered treated
- Clusters > 2.5Km from the nearest SURE-P facility and ≤ 2.5Km from the nearest non-SURE-P facility considered control
- Clusters > 2.5Km from both the nearest SURE-P and > 2.5Km from the nearest non-SURE-P facilities are considered remote and discarded
- Threshold of 2.5Km:
  - Suggested in recent health services research in Nigeria (Okwaraji and Edmond, BMJ 2012)
  - Roughly corroborated by administrative data on SURE-P facilities
  - Sensitivity analysis by varying the threshold from 2.5Km to 10Km
Treated and control: differences in means at baseline

<table>
<thead>
<tr>
<th>Variable</th>
<th>SURE-P</th>
<th>NON SURE-P</th>
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<tbody>
<tr>
<td>Institutional deliveries</td>
<td>72%</td>
<td>43%**</td>
</tr>
<tr>
<td>SBA</td>
<td>70%</td>
<td>42%**</td>
</tr>
<tr>
<td>ANC (≥ one visit)</td>
<td>97%</td>
<td>97%</td>
</tr>
<tr>
<td>ANC (≥ four visits)</td>
<td>84%</td>
<td>61%**</td>
</tr>
</tbody>
</table>

SURE-P targeted “better” catchment areas

More room to improve in institutional deliveries or SBA than in ANC
Evaluation method

Difference-in-differences:

Compare rates of change in the outcome variables between SURE-P and non SURE-P catchment areas

Under the assumption of common trends, it deals with the pre-existing differences between SURE-P and non SURE-P areas
Rate of institutional deliveries: 72% at baseline

SURE-P MCH improved the rate of institutional deliveries in 6.7 percentage points (nearly 9% over from a base of 72%)

Statistically significant at 10% (P=0.069)
Findings

Institutional deliveries:

- SURE-P MCH improved the rate of institutional deliveries in 6.7 percentage points (from a base of 72%)
- Statistically significant at 10% (P=0.069)
- Similar results for catchment area radius of 2000 and 3000 meters
- Common trend assumption held between 2008 and September 2012 (P=0.30)
Findings

4 or more ANC visits:

• No statistically significant effects

• Scope for improvement smaller than that for institutional deliveries (at baseline coverage was already 84% vs. 72% for institutional deliveries)
Robustness checks and sensitivity analysis

Treatment definition:

- Placebo launch: simulated policy launch in years prior to the policy; no effects found

- Varied threshold from 2.5Km to 2Km and 3Km: effects on IBA robust

- Alternative definition: households closer from SURE-P facility than the nearest non-SURE P one. No significant difference in results

- Inclusion of the CCT pilot facilities: no change in results
SURE-P MCH overall impact: lessons learnt

- **Large impact** of SURE-P MCH on the rates of *institutional delivery* (roughly 9% of baseline) after just **9 months** of implementation

- Routine health system monitoring needs urgent improvement to ensure good data is available to help improve public service delivery.

- IBA / SBA coverage in SURE-P at **baseline** much higher than control: potential for possibly higher effects if implemented in **more deprived areas**

- Nine-month window and number of treated facilities too limited to find effects on maternal mortality

- No statistically significant effect on **ANC**: unsurprising, since coverage at baseline already 85% in SURE-P MCH areas. Further **demand-side promotion** may be necessary
Thank you!