Uterotonic Medication Quality: Contributions Toward Universal Health Coverage
Ghana and Nigeria Case Studies

Sara Rushwan
Concept Foundation

Quality of Reproductive Health Medicines Today Panel
19 October 2023
Project Composition

Project partners & team:

<table>
<thead>
<tr>
<th>Partner</th>
<th>Team members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept Foundation</td>
<td>Metin Gülmezoglu, Lester Chinery, Petra Procter, Sara Rushwan</td>
</tr>
<tr>
<td>University of North Carolina</td>
<td>Sachiko Ozawa, Ashley Yi-Fang Lee, Colleen Higgins</td>
</tr>
<tr>
<td>University of Birmingham</td>
<td>Ioannis Gallos</td>
</tr>
</tbody>
</table>

Country partners:
➢ Ghana Health Services Safe Motherhood Team, Ghana
➢ Bloom School of Public Health, Nigeria

Project donors:
➢ MSD for Mothers
➢ Global Financing Facility (GFF) - with a specific focus on Ghana
➢ Johnson & Johnson Foundation
Project Overview

- Anchored in the principles of Universal Health Coverage (UHC) and the United Nations Sustainable Development Goals

- Building on previous studies undertaken by UNC linking medicine health quality with UHC

- A key aim of the study is to highlight the importance of safeguarding uterotonic medication quality in low- and middle-income countries

- Generate evidence to drive policy change through demonstrating both the health and economic impact that substandard uterotonics could have
Incorporate Demographic Characteristics
1) Age
2) Region
3) Urban/Rural
4) Wealth Quintile
5) Education
6) National Health Insurance status (if applicable)

Incorporate Health Facility Characteristics
- Public Hospital
- Primary Health Center
- Private Hospital
- Home
Ghana Results

Summary of Model Scenarios – Annual Economic Burden

100% Quality Misoprostol + Oxytocin: -$29,336,633
Switch to Carbetocin: -$27,845,354
Quality Uterotonics: -$18,758,916
All births happen @ facilities, Quality Baseline: $15,880,045
All births happen @ facilities, Substandard 100% Quality Oxytocin: $1,590,193
($40,000,000) ($20,000,000)

Cost Savings: $0 $20,000,000 $40,000,000

($20,000,000) $20,000,000 $40,000,000

($)40,000,000) ($20,000,000)
Nigeria Results

Summary of Model Scenarios – Annual Economic Burden

All births happen @ facilities, Quality
-

Births at facilities all use quality oxytocin with misoprostol
-

Births at facility all use quality heat stable carbetocin
-

Quality Misoprostol used in home births
-

Births at facilities all use quality uterotonics
-

Misoprostol used in home births at reported quality
-

Quality Uterotonics
-

Baseline
-

All births happen @ facilities, Substandard
-

Cost Savings

($250) ($200) ($150) ($100) ($50) $0 $50 $100

Millions

$73

($250) ($200) ($150) ($100) ($50) $0 $50 $100

Millions

$73
### Key Findings – Ghana & Nigeria

<table>
<thead>
<tr>
<th>Key results</th>
<th>Nigeria</th>
<th>Ghana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings in healthcare costs</td>
<td>$89 M (quality uterotonics)/$100 M + (all scenarios)</td>
<td>$18. M (QA uterotonics)/ $91 M (all scenarios)</td>
</tr>
<tr>
<td>Of which OOP costs</td>
<td>$39 M ($9 M in North, $30 M in South)</td>
<td>$6.3 M (public sector) $4.8 M (private sector)</td>
</tr>
<tr>
<td>Of which long-term productivity losses</td>
<td>$50 M</td>
<td>$6 M</td>
</tr>
<tr>
<td>Ghana National Health Insurance Scheme</td>
<td>$1.6 M</td>
<td></td>
</tr>
<tr>
<td>Reduction in PPH cases</td>
<td>75,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Severe PPH cases</td>
<td>18,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Maternal deaths</td>
<td>1,500</td>
<td>100</td>
</tr>
</tbody>
</table>

Ensuring good quality uterotonics would improve maternal health outcomes and result in millions of dollars in cost savings for the government and families in Ghana and Nigeria. Cost savings from improving uterotonic quality would aid in advancing country efforts toward achieving **Universal Health Coverage**.
## UHC Outcomes - Ghana & Nigeria

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Description</th>
<th>GHANA</th>
<th>NIGERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Families</strong></td>
<td>No. of mothers receiving poor-quality uterotonics</td>
<td>354,428</td>
<td>1,563,008</td>
</tr>
<tr>
<td></td>
<td>No. of cases of postpartum hemorrhage receiving poor-quality uterotonics</td>
<td>77,360</td>
<td>273,412</td>
</tr>
<tr>
<td></td>
<td>No. of cases of severe postpartum hemorrhage receiving poor-quality uterotonics</td>
<td>20,155</td>
<td>71,290</td>
</tr>
<tr>
<td></td>
<td>Out-of-pocket costs from additional treatments, blood transfusions, and longer hospitalizations due to poor-quality uterotonics (US$)</td>
<td>$11,140,917</td>
<td>$39,619,345</td>
</tr>
<tr>
<td></td>
<td>No. of maternal deaths averted by using quality uterotonics</td>
<td>107</td>
<td>1,453</td>
</tr>
<tr>
<td><strong>Healthcare Providers</strong></td>
<td>No. of doses of oxytocin saved by using quality uterotonics</td>
<td>109,893</td>
<td>483,459</td>
</tr>
<tr>
<td></td>
<td>No. of blood transfusions averted by using quality uterotonics</td>
<td>12,518</td>
<td>59,401</td>
</tr>
<tr>
<td><strong>Payors</strong></td>
<td>Payor costs from additional treatments, blood transfusions, other related commodities due to poor-quality uterotonics (US$)</td>
<td>$1,616,603</td>
<td></td>
</tr>
<tr>
<td><strong>Governments</strong></td>
<td>% of cases of postpartum hemorrhage receiving poor-quality uterotonics</td>
<td>42%</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>% of cases of severe postpartum hemorrhage receiving poor-quality uterotonics</td>
<td>45%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>% of maternal deaths averted by using quality uterotonics</td>
<td>11%</td>
<td>5%</td>
</tr>
</tbody>
</table>
Strengths

▪ Unique country-specific case studies demonstrate the health and economic burden of poor-quality uterotonics.
▪ We disaggregate burden of poor-quality uterotonics borne by payors and families.
▪ Results generated will contribute toward evidence to improve uterotonic quality to advance UHC.

Limitations

▪ Limited data on quality of uterotonics, uterotonic use, and costs of care.
▪ Limited data to account for population heterogeneity across health and economic outcomes.
▪ Transferability of model inputs from other countries where in-country data are not available.
Thank You!

Sachiko Ozawa, Ashley Yi-Fang Lee, Colleen Higgins
Global Health Economics for Pharmacy
University of North Carolina at Chapel Hill
ozawa@unc.edu

Metin Gülmezoglu, Lester Chinery, Petra Procter, Sara Rushwan
Concept Foundation
lester.Chinery@conceptfoundation.org