Saving Mothers, Giving Life
Strategic Implementation Evaluation: Some Reflections

Margaret E. Kruk, MD, MPH
Columbia University
SMGL is a global public private partnership working to reduce maternal mortality by 50%

UGANDA:
MMR: 440 / 100,000 LB
HIV prevalence: 7.2%

ZAMBIA:
MMR: 440 / 100,000 LB
HIV prevalence: 12.5%
Complex set of actors
# Complex intervention

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>ACTIVITIES</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
</tr>
</thead>
</table>
| • SMGL program plan  
  • Funding  
  • USG, MoH and implementing partners  
  • Health workers  
  • Trainers and training curricula  
  • Equipment (e.g. laboratory; vehicles; scales; delivery equipment, etc.)  
  • Supplies (e.g. essential medicines, blood supply)  
  • Basic infrastructure (e.g. water, electricity)  
  • Guidelines (clinical, data, supply chain)  
  • Information and communication technology | (Both countries, Zambia, Uganda)  
 Demand  
 • Train and supervise community groups to promote facility delivery and birth preparedness (Safe Motherhood Action Groups, Village Health Teams)  
 • Identify and engage community influencers in safe motherhood (Change Champions)  
 • Provide basic newborn/birth supplies to pregnant women (Mama Kits, Mama Packs)  
 • Run mass media campaigns on radio, engage community drama groups | Utilization  
 Increase in:  
 • facility deliveries  
 • four antenatal care visits  
 • postnatal care  
 • referrals for complications  
 • EmONC  
 • neonatal resuscitation | Reduction in maternal mortality  
 Reduction in newborn mortality |
| Access  
 • Build new operating theatres with EmONC capacity  
 • Expand/refurbish maternity wards, labs, pharmacies  
 • Build/renovate mothers’ shelters near hospitals for high risk women  
 • Provide service delivery vouchers and vouchers for transport to facilities and referral to higher-level care  
 • Buy emergency obstetric and newborn care (EmONC) equipment  
 • Buy ambulances, motorcycles and motorbikes for transportation and referrals  
 • Form district-level transport committees to improve referral  
 • Contract with private providers for EmONC | Quality  
 Reduction in:  
 • maternal facility case fatality rate  
 • perinatal mortality in facilities | System strengthening  
 • Stronger supply chains, health information systems  
 • New operating theaters  
 • More mothers’ shelters  
 • Improved transport and communication |
Complex confounders
Aims of strategic implementation evaluation

1. Assess the extent and fidelity of implementation of SMGL interventions
2. Assess functioning of the partnership and engagement of stakeholders
3. Identify best practices and barriers to success to improve the effectiveness of Phase 2
Evaluation framework

- **Dose**: How much was done?
- **Reach**: How was it received?
- **Fidelity**: Did it work as intended?
- **Dynamic effects**: What were the broader effects?
Quantitative data
(SMGL & comparison districts)

2,488 exit surveys with women who delivered in health facilities (facilities represented 60-90% of all deliveries)

1,922 provider surveys
• 1,267 satisfaction surveys
• 655 obstetric knowledge tests
End-line data collection (May-July 2013)

Uganda – 81/149 ob facilities
Zambia – 73/124 ob facilities
Qualitative data (SMGL districts)

230 interviews with national stakeholders and facility managers

80 focus group discussions with women who delivered in the past year, community health workers, and local leaders
Study design: measuring SMGL effects on quality of care

• Post-test only comparison group design:

  \[
  X \quad O_1 \\
  O_2
  \]

• Quasi random design that includes a comparison group to act as the counter-factual: what would have happened in similar areas without the intervention?

• Useful for evaluating absolute level of achievements, not change
Fidelity

• Quality of care:
  – did SMGL district providers have more knowledge, confidence?
  – did women in SMGL receive more or better care?

• Effects of health workers
  – were SMGL health workers more motivated or likely to stay in facilities?
## Summary: SMGL effect on quality

<table>
<thead>
<tr>
<th>Quality metric</th>
<th>Uganda</th>
<th>Zambia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider knowledge</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Provider confidence</td>
<td>++</td>
<td>No effect</td>
</tr>
<tr>
<td>Receipt of services</td>
<td>+</td>
<td>No effect</td>
</tr>
<tr>
<td>Providers’ rating of quality</td>
<td>+++</td>
<td>No effect</td>
</tr>
<tr>
<td>Women’s rating of quality</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Women’s satisfaction</td>
<td>No effect</td>
<td>+</td>
</tr>
</tbody>
</table>
Why did it work better in Uganda?

Favorable logistics
• Districts are contiguous
• Districts are close to capital city, Kampala (1-4 hour drive)

Greater investment in “active ingredients”
• Gave subsidies (vouchers) and incentives (mama kits) to offset costs of care for women—107,000 vouchers sold
• Increased health workforce: 24% more health workers (83% more doctors)
• Trained and mentored extensively with highly trained mentors
• Upgraded infrastructure: 65% more operating theaters; new equipment to 74% of all facilities; 85 private facilities enrolled
Recommendations

1. **Commit to five years—with a clear transition plan**
   - Longer term allows for rational planning and sequencing
   - Clarify role and responsibility of partners, governments

2. **Think in terms of health system packages not isolated interventions**
   - Avoid à la carte approach: support mutually-reinforcing active ingredients
   - Core health system investments create “culture of competence”

3. **Training is not enough: consider other cost-effective models for improving care quality**
   - Modest difference in knowledge with training alone
   - Test innovations such as performance-based financing, sharing metrics
Recommendations

4. **Focus on “last mile” women**
   - Test innovations to reach isolated women (waiting homes, telemedicine)
   - Improve provider respect for women along with technical improvements
   - Monitor and act on unintended consequences (e.g., penalties)

5. **Clarify the SMGL governance structure—globally and in host countries**
   - SMGL global partners need to agree not just on mission but nature of program (SMGL brand) and operational/funding responsibilities
   - Support Ministries of Health in directing program

6. **Test future intervention packages using rigorous evaluation methods**
   - Use SMGL investments to inform the maternal health field
   - Research minimum essential packages and different delivery models to improve maternal survival using rigorous designs (test sites or laboratories)
In the US:
- Presented preliminary findings to Leadership Council (Sep 26, 2013)
- Distributed PDF to Leadership Council (Nov 4, 2013)
- Columbia report launch (NYC, Nov 15, 2013)
- Leadership Council meeting (DC, Jan 9, 2014)
- Operations Committee meeting (Teleconference, date TBD)

Uganda
Distributed PDF to:
MoH
CDC
USAID
IPs

Zambia
Distributed PDF to:
MoH
MCDMCH
CDC
USAID
IPs
External evaluation team

Principal Investigators
• Margaret E. Kruk, MD, MPH
• Sandro Galea, MD, DrPH

Co-investigators
• Miriam Rabkin, MD, MPH
• Karen Grépin, PhD

Research Team
• Tsitsi Masvawure, DPhil
• Katherine Austin-Evelyn, MSc, MPH
• Dana Greeson, MPH
• Emma Sacks, PhD
• Daniel Vail, BA

Uganda Research Team
• Lynn Atuyambe, PhD
• Simon Kibira, MSc
• Stella Neema, PhD

Zambia Research Team
• Mubiana Macwan’gi, PhD
• Joseph Simbaya, MA
• Mutinta Moonga, MEd, DNE
• Richard Zulu, MA, MPhil