Reducing preventable maternal, newborn, and child deaths at scale by improving care effectiveness and efficiency

July 25, 2018

The webinar will begin momentarily; during the webinar, please type your questions for the speakers in the Chat box.
Reducing preventable maternal, newborn, and child deaths at scale by improving care effectiveness and efficiency

Webinar Moderator
Lynne Miller Franco
Vice President, Technical Assistance and Evaluation
EnCompas LLC
Today’s speakers

Nigel Livesley
Regional Director for South Asia
USAID ASSIST Project, URC

Tamar Chitashvili
Senior Quality Improvement Advisor for MNCH, USAID ASSIST Project, URC

Troy Jacobs
Senior Medical Advisor, Office of Maternal Child Health and Nutrition, USAID
Reducing preventable maternal, newborn, and child deaths at scale in India

Nigel Livesley MD, MPH
Regional Director
USAID ASSIST Project
University Research Co., LLC
• Improving care effectiveness and efficiency
• To reduce preventable deaths
• At scale
• Improving care **efficiency** and effectiveness
• To reduce preventable deaths
• At scale

**30% of health care resources are wasted**
Assessing women for complications after delivery

![Graph showing the average number of times vitals were recorded within the first 6 hours of birth. The graph indicates a sharp increase in the number of recordings in February, followed by fluctuations until June.](image-url)
0.16% of women were identified with complications
Women with complications are now 12 times more likely to be identified early
Sustained improvement and NO MATERNAL DEATHS in post partum ward

- Number of times women were assessed in first 6 hours
- % of women identified with complications and managed appropriately

Graph showing the number of times women were assessed in the first 6 hours and the % of women identified with complications and managed appropriately.
What can be scaled up?

The specific change?
What can be scaled up?

The specific change?
- What level of detail?
  - Use the room to the right of the nurses station as an observation room and put all equipment in the SW corner of the room
  - Organize things efficiently
What can be scaled up?

The specific change?
- What level of detail?
  - Use the room to the right of the nurses station as an observation room and put all equipment in the SW corner of the room
  - Organize things efficiently
- What if inefficiency in finding women and equipment is not the main problem?
  - Assessment may be poor because of lack of equipment or lack of skills.
What can be scaled up?

The general method to diagnose and fix unit level problems
What can be scaled up?

The general method to diagnose and fix unit level problems

• How to prioritize improvement goals
• How to work in a multi-disciplinary team
• How to use different tools to diagnose problems
• How to develop possible solutions
• How to adjust these solutions to work in a specific setting
Only 27% of newborns admitted to NICU had a normal temperature (73% were cold)
Only 27% of newborns admitted to NICU had a normal temperature (73% were cold)

Changes:

- Installing thermometer in labor rooms to encourage staff to increase ambient temperature
- Keeping a supply of pre-warmed linen to receive the baby
- Tell orderlies to keep battery in transport incubator charged
Improvement… but sustainability is questionable?

Percentage (%) of babies admitted to the NICU with normothermia
Make it easier to keep the transport incubator batteries charged

**Changes**
- Tape charger leads to incubator
- Set up dedicated charging stations around the hospital
Improvement, but batteries are old and no longer holding a charge

**Changes**

- Get new batteries for transport incubator
- Transport baby with pre-warmed linen as redundancy
Continued improvement

Percentage (%) of babies admitted to the NICU with normothermia

USAID Applying Science to Strengthen and Improve Systems
More warm babies…
...was associated with fewer deaths
39% reduction in all cause mortality (c-chart)
39% reduction in all cause mortality

85 more babies per year survive
39% reduction in all cause mortality

85 lives saved per year

Equivalent to ELIMINATING infant deaths in Vermont plus Rhode Island plus 20% of Wyoming
What can be scaled up?

The specific change?
- What if problems with keeping the incubator charged are not the main problem?
What can be scaled up?

The general method to diagnose and fix unit level problems

• How to prioritize improvement goals
• How to work in a multi-disciplinary team
• How to use different tools to diagnose problems
• How to develop possible solutions
• How to adjust these solutions to work in a specific setting
Improved standard of health
Improved standard of health

Improved interaction between provider and patient
Improved standard of health

Improved interaction between provider and patient

Correct resources

Correct clinical skills

Good organization of care

USAID Applying Science to Strengthen and Improve Systems
Scaling up new ideas
Scaling up new ideas

**Organization**

- People believe they have freedom to try new things
- Communication between different parts of the organization are good
- There are administrative resources to support adaptation of new ideas
# Scaling up new ideas

<table>
<thead>
<tr>
<th>New idea</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative advantage</td>
<td>People believe they have freedom to try new things</td>
</tr>
<tr>
<td>Compatible</td>
<td>Communication between different parts of the organization are good</td>
</tr>
<tr>
<td>Simple</td>
<td>There are administrative resources to support adaptation of new ideas</td>
</tr>
<tr>
<td>Adaptable</td>
<td></td>
</tr>
</tbody>
</table>
Scaling up new ideas

QI methods

Indian healthcare organizations
Relative advantage
Focus on outcomes
Show results

Compatibility
Highlight successes in fixing problems that resource provision and clinical training cannot fix
Work with individuals and organizations who do see this approach as compatible

Simplicity
Remove jargon
Start with fundamentals presented in practical ways

Adaptability
Avoid standardization
Encourage adaptation at all levels
Organizations

- All India Institute for Medical Sciences
  - Partnership with WHO SEARO
    - Point of Care Quality Improvement
      - Training materials
      - Coaching training
      - Program management guide
  - Supporting QI programs in various states and nearby countries
  - www.pocqi.org
Organizations

Nationwide Quality of Care Network

- Doctors and nurses from academia and private sector
- Supporting QI programs in various states
- Often in partnership with private sector and professional organizations
- http://www.qoc.net.in/
ASSIST India

- 27 districts in 6 states
- 32 million catchment population
- 435 QI teams
- ~ 15,000 deliveries per month
Reduced perinatal mortality in supported sites
Perinatal deaths/1000 births
Jul-Nov 2013-2015

14.6% reduction
- 10.1% SB
- 30.4% ND
- 48 lives saved/m
Reducing preventable maternal, newborn, and child deaths by improving care effectiveness and efficiency

Tamar Chitashvili MD
Senior Quality Improvement Advisor for MNCH
USAID ASSIST Project
University Research Co., LLC
ASSIST activities at global level to improve quality of care (QoC) in MNCH

- Global QI initiatives and TWGs
  - Participating in Implementation and Monitoring TWGs of the WHO-led Quality of Care Network
  - Prioritization and field testing of pediatric QoC measures
  - Sick Inpatient Newborn Care Situational Analysis

- Contribute to global learning in the field of improvement
  - Develop and implement tools/approaches to assess and improve QoC
  - Generate new knowledge to increase the effectiveness and efficiency of applications of improvement science in LMICs
Illustrative QI activities at different levels in Uganda

1. HCWs QI Manual

2. 2nd HSQISF

3. 3 Annual National QI conferences

1 National QI reporting Format
Illustrative activities: Establishing MPDSR structures, processes and guidelines across all levels in Uganda

- Developed Maternal and Perinatal Death Surveillance and Response (MPDSR) guidelines
- Revised maternal death audit forms
- Set up MPDSR structures: focal person in every facility and district.
- Support Implementation
  - Schedules for MPDSR meetings (facility and district levels).
  - MPD review by facility teams and coaches
  - Action plan and follow up to address gaps
  - Presentation/discussion the work at district quarterly MPDSR meetings

Sr. Susan Akwanga, MPDSR focal person Anaka Hospital, Nwoya district: ‘MPDSR saves lives, I’ve have seen it work and I call upon my colleagues to embrace it’.
Lessons Learned

QI enables teams to find innovative local solutions and address gaps with existing resources
QI enables teams to address gaps with existing resources

Results of direct observation of pediatric outpatient visits in intervention facilities in Uganda

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Baseline N=212</th>
<th>Endline N=293</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Children assessed for 3 general danger signs</td>
<td>0%</td>
<td>45%</td>
</tr>
<tr>
<td>• Assessment of three main symptoms</td>
<td>22%</td>
<td>93%</td>
</tr>
<tr>
<td>• Temperature measured</td>
<td>33%</td>
<td>97%</td>
</tr>
<tr>
<td>• Weight measured</td>
<td>21%</td>
<td>100%</td>
</tr>
</tbody>
</table>

GAPS IN ESSENTIAL SEVERITY ASSESSMENT PRACTICES
• Limited availability of scales and thermometers
• Limited time of care providers

CHANGES MADE BY QI TEAMS TO CLOSE THE GAPS
• Establishing the triage places for sick children
• Involve village health workers in assessment of vital and danger signs

USAID Applying Science to Strengthen and Improve Systems
Better documentation and data quality essential to inform continuous QI

Baseline

<table>
<thead>
<tr>
<th>%</th>
<th>Assessment of Nutrition status</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>%</th>
<th>Assessment of Vaccination status</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>%</th>
<th>Assessment of Vital signs</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>%</th>
<th>Assessment of Danger signs</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>56</td>
</tr>
</tbody>
</table>

Current

Improved assessment and documentation of children at OPD in Northern Uganda

USAID Applying Science to Strengthen and Improve Systems
Embedding M&E in improvement design is critical for learning

Percentage of children 2mo-5yrs with documented assessment of nutritional status in 10 facilities in Uganda, July, 2015 – March 2017

- Improvement in intervention sites compared to control sites +63%, P < 0.0001

- Denominator = 300 per month based on random sample of 30 records per facility

% of children under 5yrs with vaccination status documented in OPD in 10 facilities in Uganda, July, 2015 – March, 2017

- Improvement in intervention sites compared to control sites +80%, P < 0.0001

- Denominator = 300 per month based on random sample of 30 records per facility

Results of routine monitoring compared with evaluation of effectiveness of IMNCI improvement intervention in Northern Uganda
Documenting and sharing learning across teams allows rapid scale-up of improvement.
Improving MNCH processes scale: Saving Mothers Giving Life (SMGL) in Uganda

Spreading best practices in routine provision of ENC package from 20 SMGL facilities to 98 scale up SMGL facilities and 69 non-SMGL facilities in Northern Uganda (Feb 15-May 2017).

Scaling up: Saving Mothers Giving Life spread

- # of Livebirths in 20 SMGL North facilities
- # of Livebirths in 98 scale up North facilities
- # of Livebirths in 69 non-SMGL scale up facilities
Measurable impact on perinatal outcomes at scale: illustrative results from Uganda and Mali

<table>
<thead>
<tr>
<th>Indicators</th>
<th>% change</th>
<th>Country, Scale, Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perinatal mortality rate/1000 birth</td>
<td>-25%</td>
<td>Uganda, 9 districts, Jan 16-17</td>
</tr>
<tr>
<td></td>
<td>-25%</td>
<td>Uganda, 7 districts, Dec 14-16</td>
</tr>
<tr>
<td>Pre-discharge neonatal mortality/1000 LB</td>
<td>-26%</td>
<td>Uganda, 9 districts, Jan 16-Jan 17</td>
</tr>
<tr>
<td></td>
<td>-30%</td>
<td>Uganda, 7 districts, Dec 14-Dec 16</td>
</tr>
<tr>
<td>Neonatal Case Fatality-Newborn Asphyxia</td>
<td>-73%</td>
<td>Mali, 4 regions, 206 sites, Nov 16-Aug 17</td>
</tr>
<tr>
<td>Institutional maternal mortality ratio/100,000 deliveries</td>
<td>-21%</td>
<td>Uganda, 7 districts, Dec 14-16</td>
</tr>
<tr>
<td></td>
<td>-21%</td>
<td>Uganda, 9 districts, Jan 16-17</td>
</tr>
<tr>
<td></td>
<td>-52%</td>
<td>Mali, 4 regions/306 sites, Dec 16-Jun 17</td>
</tr>
<tr>
<td>Case Fatality-PPH</td>
<td>-71%</td>
<td>Mali, 4 regions/306 sites, Dec 16-Jun 17</td>
</tr>
</tbody>
</table>
QI can be effective in improving not only care effectiveness but also access to lifesaving services and medications
Rationalized prescription practices for treatment of common childhood conditions, Uganda

- % of children 2mo-5yrs with pneumonia to whom first line antibiotic was prescribed
- % of children 2mo-5yrs with a classification of cough or cold to whom an antibiotic is prescribed
- % of children 2mo-under 5 years with malaria, treated with concurrent unjustified antibiotics therapy
- % of children under 5yrs with a diagnosis of diarrhea, where antibiotics or other non-EB treatment is prescribed

10 sites, n=300
Improved **access to essential medications though rational antibiotic use**

Average number of stock-out days (no Cotrimoxazole of any dose 120mg, 240mg, or 480mg) per month in 9 facilities in Northern Uganda

Non EB use of Cotrimoxazole reduced across all common childhood conditions. Attributable improvement (P<0.0001 for all results):

1) cough or cold: -42%
2) Pneumonia -23%,
3) Malaria -26%
4) Diarroea -35%

**Baseline median = 3.7 days**

**Shift of six points below the median**
Improved access to lifesaving services: outpatient treatment of young infants with PSBI

Evidence-based treatment of young infants with possible severe bacterial infection (PSBI)

+68% improvement attributable to QI, P<0.0001

- Full outpatient treatment for those patients who cannot access referral
- Initial treatment and referral
Improved equitable access to health services: Reducing gender gap in infant vaccination in Mali

44 sites, 2 districts of Mopti Region (Dec 2016-Jun 2017)

- Complete immunization schedule for girls enrolled in the immunization program
- Complete immunization schedule for boys enrolled in the immunization program

First coaching visit

Number of girls <1year
Number of boys <1year
**QI is not a luxury: it can save the cost of care**

**Economic evaluation of child care improvement interventions in Georgia and Uganda**

<table>
<thead>
<tr>
<th>Country</th>
<th>Clinical conditions</th>
<th># of patients</th>
<th>Total cost of project in USD</th>
<th>Incremental cost-saving per patient</th>
<th>Total incremental cost saving in USD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Georgia</strong></td>
<td>Respiratory tract infection (RTI) at ambulatory level</td>
<td>26236</td>
<td>22,484</td>
<td>4.9</td>
<td>127,802</td>
</tr>
<tr>
<td></td>
<td>Pneumonia at hospital level</td>
<td>1544</td>
<td>14,989</td>
<td>12.1</td>
<td>18,614</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>37,473</strong></td>
<td></td>
<td><strong>146,416</strong></td>
</tr>
<tr>
<td><strong>Uganda</strong></td>
<td>Cough/ cold/RTI</td>
<td>45,621</td>
<td>2,146</td>
<td>0.13</td>
<td>5820</td>
</tr>
<tr>
<td></td>
<td>Pneumonia</td>
<td>10,841</td>
<td>2146</td>
<td>0.03</td>
<td>302</td>
</tr>
<tr>
<td></td>
<td>Malaria</td>
<td>120,768</td>
<td>2,146</td>
<td>0.02</td>
<td>3006</td>
</tr>
<tr>
<td></td>
<td>Diarrhea</td>
<td>16,502</td>
<td>2,146</td>
<td>0.05</td>
<td>823</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>8,584</strong></td>
<td></td>
<td><strong>9,951</strong></td>
</tr>
</tbody>
</table>
QI is the critical path to reach “effective universal health coverage”

“Without quality health services, UHC can remain an empty promise.”
Participants should use the chat function to post questions (send to “All panelists”). Responses to questions not addressed during the webinar will be posted afterwards on the ASSIST website.
Closing Remarks

Lynne Miller Franco
Vice President, Technical Assistance and Evaluation
EnCompass LLC
Resources to learn more:
https://www.usaidassist.org/content/legacy-webinar-series-reducing-preventable-maternal-newborn-and-child-deaths
Upcoming webinar:
Leading health care improvement: What leaders need to know to act. Lessons from East and West Africa

Wednesday, September 12, 2018 9:00-10:00am

Register at:
https://zoom.us/webinar/register/WN_da99ng27Sj6UamgudwD-Pw