Postpartum Haemorrhage Summit

Welcome, introduction, and declaration of interests
Co-chairs, Summit Steering Committee: Hadiza Galadanci & Suellen Miller

7 March 2023
Disclaimer

Conference attendees acknowledge that WHO and parties acting for WHO may take photographs during and/or videotape all or part of public meetings of the Conference. By attending the Conference, attendees are held to have consented to being depicted in such photographs and videotapes, and to agree that WHO may, at its sole discretion, reproduce and publicly disseminate any of these photographs and/or any such video footage on its website and/or in other materials and through other outlets, and/or authorize third parties to do the same.
Welcoming our participants

50+ participating countries

130+ participants

Reflective of PPH diversity

Academic Researchers
UN Agencies and Partnerships
Professional Associations
Steering Committee
Industry and Private Sector
Scientific Committee
International donors
Non-Governmental Organizations
Ministries of Health
Stories of Survival

It is estimated that severe bleeding after childbirth will claim the lives of 70,000 women this year, with millions more affected around the world.

No matter the location, survivors share their experience of unanticipated birth trauma and access to life-saving interventions.
“When I woke up, eight emergency responders surrounded me. They packed me with massive diapers and loaded me into the ambulance. They gave me a drug that can stop bleeding when people are shot. It didn’t work. My blood pressure was dropping. “I need you to talk to me, Ashley,” one responder said. “I can’t have you fall asleep.”

United States
UT Southwestern Medical Center
“I asked what was happening and was told I was losing too much blood. I became very scared and started to think I was going to die. My partner was sitting next to me holding our baby and was asking a midwife to take a picture of him. I remember thinking “I’m going to die and he has no idea.”
“My baby was 3 weeks old when I haemorrhaged and passed out while feeding her at midnight. I soaked a maternity pad, undies, pants and through to the mattress in a couple of minutes.”

Australia
Australasian Birth Trauma Association
“I was not aware of PPH before I delivered this baby. No one told me about it. I had heard of the basics of pregnancy and thought after delivery that is all. I now know better. Every time I look at my baby, I imagine she would have been motherless by now.”

Kenya
White Ribbon Alliance
"After I came to the hospital, I was bleeding a lot. They gave me some tablets to help, and it stopped. My baby was born a boy, and he’s doing well... I turned 19 in January and am currently going to school. I hope to go back once I am recovered from today."

Liberia
International Health Partners
Giving birth can be a matter of life or death, especially in the world's least developed countries, making stories of survival all too rare.

Together, we can change this.
Postpartum Haemorrhage Summit
Postpartum Haemorrhage Summit

Welcome address by Director, WHO/HRP
Pascale Allotey
7 March 2023
Postpartum Haemorrhage Summit

Overview of Summit agenda, format, ground rules and guiding principles
Guervan Adnet, BCG
7 March 2023
1. Download the Summit app or access the website version (email received from HRP Events)

2. Log in using your First Name / Last Name / Email address

3. Discover all the features, including
   - Your agenda for the Summit
   - Useful documents
   - The social media kit
   - And many more!
Global Summit on PPH Agenda

Guiding principles

Go through all prioritization processes and discussions sequentially rather than in parallel to enable all participants to provide input on all areas of prioritization.

Dedicate each half-day to a single process. Focus last day on wrapping up rather than opening new discussions.

Foster the interactive aspect of the Summit with the right balance between discussion in smaller groups or panel and plenary sessions.

Offer supplementary sessions in the evening to share information on important topics (e.g., presentation of innovations and latest research results) with participants.

Provide opportunities for networking and future collaborations and coalitions among stakeholders working in the PPH space.
A standard half-day focuses on a single output and is divided into 3 key moments:

1. **Plenary session to introduce** the subject and share **top-down information** (e.g., context & state of the art, case studies, methodology & preliminary results) (~60-90 min)

2. **Discussions** to prioritize gaps (~90-120 min)

3. **Wrap-up plenary session** to align on output of discussions and share back with the whole group (~30-60 min)

**2 options to foster discussions**

- **Breakout sessions**
  Participants are divided into smaller groups, each focusing on a specific subtopic (e.g., innovation or implementation tracks for research prioritization)

- **Panel discussions in plenary session**
## High level agenda for Global Summit on PPH

### Day 1
**Morning**
- **Welcome session**
  - Introduction
  - Overview of Summit agenda & format
  - Objectives and expected outcomes

**Afternoon**
- **Research prioritization**
  - Current PPH tools, innovations landscape and R&D ecosystem
  - Methods & results of prioritization exercise
  - Discussion on priorities in breakouts
  - Consensus on final priorities

**Dinner-Cruise**

### Day 2
**Morning**
- **Guidelines prioritization**
  - Current PPH policy landscape & alignment across organizations
  - Methods & results of prioritization exercise
  - Panel discussion with professional associations
  - Consensus on final priorities

**Afternoon**
- **Implementation and advocacy prioritization**
  - Consensus on final implementation priorities
  - Advocacy success stories
  - Panel with NGOs
  - Consensus on advocacy priorities

**Supplementary session – I**
  - Latest research results
  - Latest innovations

### Day 3
**Morning**
- **Implementation and advocacy prioritization**
  - Case studies & exemplars
  - Panel with MoHs
  - Methods & results of survey on implementation barriers
  - Discussion on priorities in breakouts

**Afternoon**
- **Roadmap & Call-to-action**
  - Intro to Roadmap
  - Co-development of roadmap in breakouts
  - Draft Roadmap

**Supplementary session – II**
  - Latest research results
  - Latest innovations

### Day 4
**Roadmap & Call-to-action**
- Final Roadmap
- Panel discussion with donors and MoHs to reflect on Roadmap, ongoing & future commitments
- Call-to-action

**Closing & next steps**
- Final reflections and next steps
- Summit-branded video interviews of participants
- SteerCo debrief meeting

**Discover Dubai**
## Agenda | Day one (1/2)

<table>
<thead>
<tr>
<th>Session</th>
<th>Session Topics</th>
<th>Facilitators and Speakers</th>
<th>Timing (GST)</th>
<th>Type of Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Welcome, introductions, declaration of interests, &amp; acknowledgements</td>
<td>Welcome, introduction, and declaration of interests</td>
<td>9:00-10:00</td>
<td>Plenary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Opening remarks by WHO Director-General</td>
<td>• Tedros Ghebreyesus</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Welcome address by Director, WHO/HRP</td>
<td>• Pascale Allotey</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overview of Summit agenda, format, ground rules and guiding principles</td>
<td>• Guervan Adnet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Why are we convening?</td>
<td>Why we need this Summit, high level goals, objectives, &amp; alignment on shared vision</td>
<td>10:00-10:30</td>
<td>Plenary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What we want to achieve (theory of change)</td>
<td>• Femi Oladapo</td>
<td></td>
</tr>
<tr>
<td>Coffee Break</td>
<td></td>
<td></td>
<td>10:30-11:00</td>
<td></td>
</tr>
<tr>
<td>What do we want to get out of this Summit?</td>
<td>Case for action: Epidemiology of PPH burden and outcomes, including what ‘good’ looks like</td>
<td>Arri Coomarasamy</td>
<td>11:00-12:00</td>
<td>Plenary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What women want: The realities about PPH from women’s voices</td>
<td>• Angela Nguku</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actionable framework for reducing PPH morbidity and mortality: A proposal</td>
<td>• Ioannis Gallos</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Setting up for success: Outlining the roles of stakeholders</td>
<td>• Sarah Chamberlain</td>
<td></td>
</tr>
<tr>
<td>Lunch Break</td>
<td></td>
<td></td>
<td>12:00-13:00</td>
<td></td>
</tr>
<tr>
<td>Session</td>
<td>Session Topics</td>
<td>Facilitators and Speakers</td>
<td>Timing (GST)</td>
<td>Type of Session</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| Day 1   | Unpacking the vision - tools, innovation landscape, and priority research to close the PPH gaps - **Presentation** | • Current PPH management tools – from evidence to implementation at scale  
• Summary of PPH innovations in the pipeline and challenges in maternal health R&D ecosystem affecting new innovations  
• PPH innovation pathways, evidence requirements and procedures for global and national policy changes  
• Methods and results of PPH research prioritization survey | • Suellen Miller  
• Metin Gülmezoglu & Pauline Williams  
• Mariana Widmer  
• Caitlin Williams | 13:00-14:15 | Plenary |
| Coffee Break | | | | 14:15-14:30 |
| Day 1   | Unpacking the vision - priority research to close the PPH gaps - **Discussion** | • Breakout discussions to finalise research priorities (by track: innovation, implementation, cross-cutting) using a combination of metric- (e.g., polling) and value-based decision-making; including alignment on possible TPPs | 1 facilitator per breakout | 14:30-16:15 | Breakouts |
| Coffee Break | | | | 16:15-16:30 |
| Day 1   | Unpacking the vision - priority research to close the PPH gaps - **Wrap up** | • Consensus on the final list of priority questions | • Facilitators to present breakouts results  
• Thematic chair: Rodolfo de Carvalho Pacagnella | 16:30-17:00 | Plenary |
| Dinner-Cruise | • Social event to welcome all participants | | | 18:00- | All |
## Agenda | Day two (1/2)

<table>
<thead>
<tr>
<th>Session</th>
<th>Session Topics</th>
<th>Facilitators and Speakers</th>
<th>Timing (GST)</th>
<th>Type of Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 2</strong></td>
<td><strong>Unpacking the vision - global policies, progress and required updates - Presentation</strong>&lt;br&gt;• Current PPH guidelines landscape – gap analysis across policy-developing organizations&lt;br&gt;• Methods and results of guideline prioritization exercise (looking into new evidence warranting the update or development of new recommendations)&lt;br&gt;• Panel discussion with professional associations on alignment of priorities for PPH recommendations</td>
<td>• Virginia Diaz&lt;br&gt;• Edgardo Abalos</td>
<td>9:00-10:30</td>
<td>Plenary&lt;br&gt;<strong>Moderator:</strong> Blami Dao&lt;br&gt;<strong>Panel:</strong> Jeanne Conry (FIGO), Trude Thommesen (ICM), Tim Draycott (RCOG), Pisake Lumbiganon (AOFOG) &amp; Iffath Hoskins (ACOG)</td>
</tr>
<tr>
<td><strong>Coffee Break</strong></td>
<td></td>
<td></td>
<td>10:30-11:00</td>
<td>Panel</td>
</tr>
<tr>
<td><strong>Unpacking the vision - global policies, progress and required updates - Discussion &amp; wrap up</strong>&lt;br&gt;• Discussion on the final guideline priorities for new recommendations and updates for WHO and other international bodies</td>
<td>• Thematic chair: Joao Paulo Souza</td>
<td>11:00-12:00</td>
<td>Q&amp;A</td>
<td></td>
</tr>
<tr>
<td><strong>Lunch Break</strong></td>
<td></td>
<td></td>
<td>12:00-13:00</td>
<td></td>
</tr>
</tbody>
</table>
## Agenda | Day two (2/2)

<table>
<thead>
<tr>
<th>Session</th>
<th>Session Topics</th>
<th>Facilitators and Speakers</th>
<th>Timing (GST)</th>
<th>Type of Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Unpacking the vision - implementation bottlenecks and solutions – Presentation** | • Case studies in select PPH high-burden countries – reflecting national contextual factors, policies, scale-up plans and investments, and service delivery  
• Experience from global exemplar countries  
• Challenges in implementing what works – perspectives from the Ministries of Health | • Uzma Syed  
• Bouchra Assarag  
**Moderator:** Richard Mugahi  
**Panel:** Fatema Rahman (Bangladesh), Anders Seim (Niger), Samuel Oyeniyi (Nigeria), Nousheen Farooq (Pakistan), Eltayeb Dalia (Sudan) | 13:00-14:00 | Plenary |
| **Unpacking the vision - implementation bottlenecks and solutions – Presentation** | • Methods and results from pre-Summit surveys on implementation barriers to recommended intervention  
• Prioritization of implementation bottlenecks using impact x feasibility matrix | • Caitlin Williams  
• Guervan Adnet & Sarah Chamberlain | 14:00-15:30 | Plenary |
| **Coffee Break** | | | 15:30-16:00 | |
| **Unpacking the vision - Implementation bottlenecks and solutions – Discussion** | • Breakout discussions to finalise priority implementation gaps & potential solutions, clustered by 4 domains  
○ National Context (e.g. health & non-health policies, leadership, legislative, humanitarian crises, women’s rights)  
○ Programme and Investment (e.g. guidelines, expansion and scale up plans, equity, investment)  
○ Commodities (e.g. regulation, access, quality, affordability)  
○ Service delivery (e.g. clinical protocols and referral pathways, training, staffing, audit and feedback) | 1 facilitator per breakout | 16:00-18:00 | Breakouts |

**SUPPLEMENTARY**

**Latest research results**

**Latest innovations**

• Presentation of selected latest research results related to PPH  
• Presentation of selected innovations (incl. new PPH devices)  
• Rizwana Chaudhri (Research Chair)  
• Pete Lambert (Innovation Chair)  
**18:00-19:00**  
**Breakouts (1 for Research, 1 for Innovations)**
<table>
<thead>
<tr>
<th>Session</th>
<th>Session goals</th>
<th>Facilitators and Speakers</th>
<th>Timing (GST)</th>
<th>Type of Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Unpacking the vision - Implementation bottlenecks & solutions Wrap up | • Consensus on the final list of priorities for implementation & optimal arrangement of systems for effective delivery (synthesised using evidence-informed framework) | • Facilitators to present breakouts results  
• Thematic chair: Dily Walker | 09:00-10:00 | Plenary |
| Coffee Break | | | 10:00-10:30 |                 |
| Unpacking the vision - advocacy for change | • PPH advocacy activities and success stories  
• Discussion and consensus on advocacy priorities | • Guervan Adnet  
**Moderator:** Angela Nguku  
**Panel:** Daisy Ruto (Smiles for Mothers), Sara Rushwan (Concept Foundation), Joyce Nganga (WACI Health), Aseema Mahunta (Centre for Catalyzing Change), Andrew Storey (CHAI) | 10:30-12:30 | Plenary  
**Panel discussion** |
| Lunch Break | | | 12:30-13:30 |                 |
## Agenda | Day three (2/2)

<table>
<thead>
<tr>
<th>Session</th>
<th>Session goals</th>
<th>Facilitators and Speakers</th>
<th>Timing (GST)</th>
<th>Type of session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The future of PPH: Roadmap</td>
<td>• Intro to Roadmap – key elements to include (milestones, timeline, roles &amp; responsibilities, measurement...)</td>
<td>Ioannis Gallos &amp; Sarah Chamberlain</td>
<td>13:30-14:00</td>
<td>Plenary</td>
</tr>
</tbody>
</table>
| Roadmap for addressing the top priorities and accelerating impact | Breakout discussions, each focusing on the Roadmap for one prioritization process (research, guidelines, implementation & advocacy priorities) and impact assessment  
- Consensus on sequencing of priorities against 2023-2030+ timeline  
- Alignment on responsibilities of various groups (e.g., researchers, industry experts, policy makers, non-govt organizations, donors)  
- Alignment on monitoring and impact assessment | Breakout: Thematic chairs:  
• Research: Rodolfo de Carvalho Pacagnella  
• Guidelines: Joao Paulo Souza  
• Implementation: Dily Walker  
• Advocacy: Angela Nguku | 14:00-16:00 | Breakout sessions – by key Summit objectives |
| Coffee Break |  |  |  |  |
| Building a consensus Roadmap | Synthesis of outputs from breakouts | Facilitators to present breakouts results  
Thematic chair: Sarah Chamberlain | 16:00-16:30 | Plenary |
| **(SUPPLEMENTARY)** Latest research results Latest innovations | • Presentation of selected latest research results related to PPH  
• Presentation of selected innovations (incl. new PPH devices) | John Varallo (Research Chair)  
Zahida Qureshi (Innovation Chair) | 17:30-18:30 | Breakouts (1 for Research, 1 for Innovation) |
<table>
<thead>
<tr>
<th>Session</th>
<th>Session Topics</th>
<th>Facilitators and Speakers</th>
<th>Timing (GST)</th>
<th>Type of Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 4 High-level roadmap</td>
<td>• Synthesized view of key milestones and critical activities to launch soon</td>
<td>Sarah Chamberlain</td>
<td>09:00-09:30</td>
<td>Plenary</td>
</tr>
<tr>
<td>Day 4 Existing and future commitment &amp; pledges for support</td>
<td>• Reflections on the new PPH agenda and Roadmap and alignment with ongoing and future organizational priorities • How ongoing investments could support priorities identified in the Roadmap</td>
<td>Moderator: Sabaratnam Arulkumaran Panel: Jeff Smith (BMGF), Jill Jones (UK MRC), Mary-Ann Etiebet (MSD for Mothers), Robyn Churchill (USAID), Romane Théoleyre (Unitaid) &amp; Aparna Kamath (Grand Challenges Canada)</td>
<td>09:30-11:00</td>
<td>Panel discussion with donors &amp; Ministries of Health</td>
</tr>
<tr>
<td>Coffee Break</td>
<td>11:00-11:30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call-to-Action</td>
<td>• What is a Call-to-Action and why do we need one • Presentation of the draft Call-to-Action • Participant feedback on the Call-to-Action</td>
<td>Pascale Allotey Hadiza Galadanci</td>
<td>11:30-12:30</td>
<td>Plenary Q&amp;A</td>
</tr>
<tr>
<td>Lunch</td>
<td>12:30-13:30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrap up and next steps</td>
<td>• Final reflections and next steps</td>
<td>Co-chairs, SteerCo (Hadiza Galadanci &amp; Suellen Miller) Pascale Allotey Femi Oladapo</td>
<td>13:30-14:30</td>
<td>Plenary</td>
</tr>
<tr>
<td>Video interviews</td>
<td>• PPH Summit-branded interviews of participants for potential PPH advocacy video(s) post-Summit</td>
<td>Victoria Holdsworth (HRP Communication consultant)</td>
<td>14:30-17:00</td>
<td>PPH Summit video interview corner</td>
</tr>
<tr>
<td>SteerCo meeting</td>
<td>• Summit Steering Committee debrief meeting</td>
<td>Hadiza Galadanci &amp; Suellen Miller</td>
<td>15:00-17:00</td>
<td>Closed meeting</td>
</tr>
</tbody>
</table>
Postpartum Haemorrhage Summit

Why we need this Summit, high level goals, objectives, alignment on shared vision

Femi Oladapo, WHO

7 March 2023
UN targets were set to globally reduce Maternal Mortality Rates

Millennium development goals in 2000

A target to reduce MMR by 75% by the year 2015.

As part of the Sustainable Development Goals (SDG Goal 3.1) in 2015

A target to reduce MMR to 70 deaths per 100,000 live births by the year 2030

With the current pace of progress, the world will fall short of SDG Goal 3.1 by more than 1 million lives

1 WHO Maternal Mortality Estimation Inter Agency Group (MMEIG)

MMR remains above SDG goal of 70 maternal deaths per 100,000 live births

Maternal Mortality Rate per 100,000 live births
UN targets were set to globally reduce Maternal Mortality Rates

**Millennium development goals in 2000**

A target to reduce MMR by 75% by the year 2015.

**As part of the Sustainable Development Goals (SDG Goal 3.1) in 2015**

A target to reduce MMR to 70 deaths per 100,000 live births by the year 2030

With the current pace of progress, the world will fall short of SDG Goal 3.1 by more than 1 million lives

1 WHO Maternal Mortality Estimation Inter Agency Group (MMEIG)
Haemorrhage in general, and PPH mostly, globally account for more than 25% of maternal mortality.

Out of ~140 million women giving birth every year, 6-10% experience PPH\(^1\).

PPH remains the leading cause of maternal mortality world-wide\(^2\).

Defined as maternal blood loss of 500 ml or more within 24h of birth.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemorrhage</td>
<td>27%</td>
</tr>
<tr>
<td>Abortion</td>
<td>8%</td>
</tr>
<tr>
<td>Embolism</td>
<td>3%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>14%</td>
</tr>
<tr>
<td>Sepsis</td>
<td>11%</td>
</tr>
<tr>
<td>Other causes</td>
<td>37%</td>
</tr>
</tbody>
</table>

\(^1\) Innovations in the prevention and treatment of postpartum hemorrhage: Analysis of a novel medicines development pipeline database (FIGO); A review of postpartum hemorrhage in low-income countries and implications for strengthening health systems (FIGO)

\(^2\)Global causes of maternal death: a WHO systematic analysis

\(^3\) Most Haemorrhage cases are PPH
What does PPH mean to you?
PPH means different things to different people...

One of those **conditions** that mothers experience during childbirth ...

Release of *dirty blood* after childbirth which should not be prevented...

An **unpredictable** obstetric emergency...

A reminder that our facilities are **not really prepared** to tackle PPH crisis...

**Global health concern** that requires all stakeholders to unify efforts to address commonly agreed gaps ...
Why do we need a PPH Summit?

Public health needs
- PPH leading cause of maternal death globally; disproportionately higher in LMICs
- Several LMICs not on track to meet SDG-3 targets

Innovation deficit
- Stagnant PPH research and normative horizons
- Only two new PPH medicines over the last 30 years
- Lack of TPPs prior to R&D of PPH medicines and devices

Access barriers
- Lack of evidence on efficacy and safety of emerging interventions
- Lack of updated national policies & low uptake, lack of TPoP, duplication of efforts, research waste
- Lack of QA products, supply chain challenges

Global action
- Inconsistencies in international and national PPH guidelines
- No PPH-focused global or regional agenda or coherent action plans to guide stakeholders
Reducing PPH-related maternal mortality in countries that are in Stages 1 & 2 of obstetric transition could bridge up to 71% of the gap between current MMR and SDG 3 MMR target related to PPH.

Our ambition could be to focus on Stage I & Stage II countries and help them reach Stage III MMR.

<table>
<thead>
<tr>
<th>Obstetric transition stages</th>
<th>MMR</th>
<th>PPH-related MMR²</th>
<th>PPH-related deaths</th>
<th>PPH-related MMR after concentrated efforts I &amp; II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>1047</td>
<td>262</td>
<td>23,913</td>
<td>39</td>
</tr>
<tr>
<td>Stage II</td>
<td>500</td>
<td>125</td>
<td>20,152</td>
<td>39</td>
</tr>
<tr>
<td>Stage III</td>
<td>158</td>
<td>39</td>
<td>23,644</td>
<td>39</td>
</tr>
<tr>
<td>Stage IV</td>
<td>42</td>
<td>11</td>
<td>3,695</td>
<td>11</td>
</tr>
<tr>
<td>Stage V</td>
<td>11</td>
<td>3</td>
<td>405</td>
<td>3</td>
</tr>
</tbody>
</table>

Worldwide

213 53 71,809 28

Assumption: PPH is responsible for 25% of maternal deaths worldwide² and that ratio will stay constant.

Reducing Stage I & II countries’ PPH related MMR to meet that of Stage III countries would bridge 71% of the gap with SDG 3 MMR target related to PPH².

Maternal Mortality Rate = number of maternal deaths per 100,000 live births
² SDG 3 target for MMR is 70, with 25% of deaths linked to PPH
³ In addition to the efforts on Stage I & II countries


WHO Maternal Mortality Data

Achievable by targeting Stage 1 & 2 countries
Objectives of the Global PPH Summit

1. Review **R&D progress** for PPH **innovations in the pipeline** and define the **evidence requirements** for policy changes, identify and align on **top priority research gaps** in PPH.

2. Identify and align on **top priority policy / guideline gaps** in PPH.

3. Identify and align on **top priority implementation and advocacy gaps** in PPH and identify **strategies for equitable and sustainable access** to effective interventions.

4. Summarize challenges and develop a clear **roadmap** for addressing them.

5. Form **strong coalitions and boost funding streams** to address ongoing PPH challenges.
Theory of Change (ToC) for the PPH Summit

**Inputs**
- WHO leadership, coordination, and in-kind contributions
- Donor funding

**Outputs**
- Establishment of leadership team
- Identification of wider determinants for PPH related mortality and morbidity and key research gaps for existing PPH interventions
- Identification of key implementation gaps and wider health system challenges for PPH interventions
- Landscape analysis of PPH innovations - medicines, devices, and interventions

**Outcomes**
- Summit and Summit aftermath to agree on global and regional action plans to improve quality of PPH care in LMICs
  - Highest global priorities for research, guidelines, implementation, and advocacy identified and prioritised
  - Roadmap for global advancement on key challenges
  - Wide and diverse coalitions established to tackle key implementation challenges
  - Funding streams boosts
  - Accelerated breakthrough innovation and prod. dvl't
  - Coordinated international and regional partnerships
  - Global and country-level normative and advocacy activities to reduce PPH burden

**Impact**
- Public health impact
  - Maternal lives saved
  - Decreased PPH morbidity
  - Decreased PPH incidence
- Economic impact
  - Fast-tracked knowledge translation pathways
- Positive externalities
  - PE and maternal sepsis Summit implemented using the same model

**Key assumptions**
- All stakeholders subscribe to Roadmap to advance PPH work across countries; duplication of activities in the PPH space minimized or stopped
- National governments adopt plans to address key challenges identified and create national fiscal space for PPH priority medicines and devices
- Political environment is conducive for national governments to implement the Roadmap from the Summit
What have we done to date?

- **Summit agenda**
  - Define the scope, values and methods
  - Review the summit ToC
  - Approve protocols for preparatory studies

- **Evidence synthesis**
  - Evidence synthesis on epidemiology, burden, risk factor, synthesis of research questions from multiple sources

- **Mapping and updated evidence**
  - Mapping and updated evidence base for PPH recommendations across all policy makers

- **Summit agenda**
  - Review the summit ToC
  - Approve protocols for preparatory studies
  - Define the scope, values and methods

- **Call to Action Roadmap**
  - Advocacy needs
  - Implementation challenges
  - Case studies & testimonials

- **24 Oct**
  - Country case studies (Nigeria, Tanzania and Pakistan) to contextualize the implementation gaps

- **1 Nov**
  - Landscape analysis of advocacy initiatives related to PPH

- **1 Dec**
  - Research questions list
  - Research Prioritization (CHNRI)
  - Guideline questions
  - Guideline prioritization

- **1 Jan**
  - Mapping and updated evidence base for PPH recommendations across all policy makers

- **1 Feb**
  - Evidence synthesis on epidemiology, burden, risk factor, synthesis of research questions from multiple sources

- **1 Mar**
  - Approve protocols for preparatory studies

- **1 Apr**
  - Summit agenda

- **1 May**
  - Call to Action Roadmap
    - Top Research priorities
    - Top guideline questions
    - Top implementation challenges
    - Top advocacy needs
    - Country level action plans

- **8-11 May**
  - Write up commentary of the WHO PPH Summit approach and plans for future monitoring and evaluation

- **1 Jun**
  - Landscape analysis of advocacy initiatives related to PPH

- **1 Jul**
  - Call to Action Roadmap

- **23 Aug**
  - Write up commentary of the WHO PPH Summit approach and plans for future monitoring and evaluation
What does “good” look like at the end of the PPH summit?

**Shared understanding of priority PPH gaps to address and solutions to implement**

- **Research gaps** (top 5 innovation, top 5 implementation, top 5 cross-cutting): priority research to commission

- **Normative gaps**: guidelines to update & new guidelines to develop (consolidated PPH guidelines)

- **Implementation gaps**: priority solutions to address key implementation bottlenecks

- **Advocacy gaps**: priority advocacy solutions to address gaps in advocacy

Laying the foundations for **concerted efforts** to **develop new tools, improve implementation** of existing tools and **raise profile of PPH**
We want to create momentum and mobilize the international community with the ambition of kicking off a series of activities post-summit.
Are you ready to reshape the future of PPH?
The PPH Summit was made possible by the generous contributions of MSD for Mothers and the Bill and Melinda Gates Foundation
Case for action: Epidemiology of PPH burden, outcomes, and what 'good' looks like
Arri Coomarasamy, WHO Collaborating Centre, University of Birmingham
7 March 2023
Questions

Why does PPH matter?

Where are we heading?

What can we do?
THE LANCET

Series on PPH

Paper 1:
Postpartum haemorrhage: epidemiology and missed opportunities

Paper 2:
Prevention of postpartum haemorrhage: from evidence to implementation at scale

Paper 3:
Management of postpartum haemorrhage: a race against time
Why does PPH matter?

Scale of the problem
- PPH rate
- The second most important slide you will see!

Global burden of PPH
- Global burden of PPH and sPPH at VB and CS
- Regional burden of PPH and sPPH

Deaths from PPH
- Global burden and regional burden

Consequences of PPH
PPH rate
<table>
<thead>
<tr>
<th>Mode of delivery,</th>
<th>Total deliveries</th>
<th>PPH rate (95% CI)</th>
<th>% Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimation method (number of studies)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VB, Sub (n=18)</td>
<td>63,779,680</td>
<td>4.0 (3.5, 4.6)</td>
<td>100.00</td>
</tr>
<tr>
<td>VB, Obj (n=4)</td>
<td>184,033</td>
<td>14.6 (12.0, 17.9)</td>
<td>100.00</td>
</tr>
<tr>
<td>CD, Sub (n=20)</td>
<td>27,793,884</td>
<td>3.4 (2.7, 4.3)</td>
<td>100.00</td>
</tr>
<tr>
<td>CD, Obj (n=3)</td>
<td>535</td>
<td>27.0 (20.2, 36.0)</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Unpublished data – not for citation
The second most important slide you will see!
Does subjective assessment of blood loss have a future?

Treatment of PPH; evidence from the multi-country WHO CHAMPION trial
Does subjective assessment of blood loss have a future?

Women treated with uterotonic drugs:

- Only 26% of women with PPH received a treatment uterotonic drug.
- Even with severe PPH >1000ml, 30% of women did not receive a treatment uterotonic drug.
- Women with missed PPH (1252/2670, 46.9%).

Treatment of PPH; evidence from the multi-country WHO CHAMPION trial.
Global and regional burden of PPH, sPPH, PPH deaths
Global and regional burden of PPH, sPPH and PPH deaths

Modelling based on:

- Births at country level
- Vaginal births and caesarean sections at sub-regional level
- PPH and sPPH rates from objective assessment of blood loss, separately for vaginal birth and caesarean section
- Case fatality rates, separately for LMIC and HIC
- PPH attributable deaths at sub-regional level
- MMR from latest WHO/UN/World Bank report, Feb 2023
**Deaths from PPH**

<table>
<thead>
<tr>
<th>Region</th>
<th># deaths from PPH</th>
<th>Global %age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Africa</td>
<td>12,250</td>
<td></td>
</tr>
<tr>
<td>Middle Africa</td>
<td>9,543</td>
<td>69.3%</td>
</tr>
<tr>
<td>Northern Africa</td>
<td>2,184</td>
<td></td>
</tr>
<tr>
<td>Southern Africa</td>
<td>534</td>
<td></td>
</tr>
<tr>
<td>Western Africa</td>
<td>27,115</td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td>133</td>
<td>0.4%</td>
</tr>
<tr>
<td>Caribbean</td>
<td>292</td>
<td></td>
</tr>
<tr>
<td>Central America</td>
<td>1,212</td>
<td>2.4%</td>
</tr>
<tr>
<td>South America</td>
<td>1,212</td>
<td></td>
</tr>
<tr>
<td>Central Asia</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Eastern Asia</td>
<td>747</td>
<td></td>
</tr>
<tr>
<td>South-Eastern Asia</td>
<td>3,352</td>
<td>27.7%</td>
</tr>
<tr>
<td>Southern Asia</td>
<td>14,364</td>
<td></td>
</tr>
<tr>
<td>Western Asia</td>
<td>1,067</td>
<td></td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Northern Europe</td>
<td>14</td>
<td>0.1%</td>
</tr>
<tr>
<td>Southern Europe</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Western Europe</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Australia/New Zealand</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Melanesia</td>
<td>85</td>
<td>0.1%</td>
</tr>
<tr>
<td>Micronesia</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Polynesia</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>74,511</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Note: unpublished data; not for citation*
Global burden of PPH

Summary

- A PPH occurs every 1.5 seconds
- A woman dies from PPH every 7 minutes
Consequences of PPH

- Death
- Laparotomy
- Hysterectomy
- Blood transfusion
- Bladder injury
- Disseminated intravascular coagulation (DIC)
- Postpartum infection
- Impact on breast feeding
- Anaemia
- Neonatal death
- Insufficient sleep (<6 hrs)
- Post-traumatic stress disorder (PTSD)
- Depression of partner
- Negative memories of the delivery
- Divorce
- Sexual problems

Key message: Do not neglect psychological consequences of PPH
Questions

Why does PPH matter?

Where are we heading?

What can we do?
# Global projections to 2030: PPH

<table>
<thead>
<tr>
<th>Continent</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>Birth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>7,124,054</td>
<td>7,561,674</td>
<td>8,045,260</td>
<td>Increasing</td>
</tr>
<tr>
<td>North America</td>
<td>803,722</td>
<td>827,898</td>
<td>845,806</td>
<td>Increasing</td>
</tr>
<tr>
<td>Central/South America/Caribbean</td>
<td>1,959,250</td>
<td>1,889,254</td>
<td>1,850,980</td>
<td>Decreasing</td>
</tr>
<tr>
<td>Asia</td>
<td>12,442,298</td>
<td>12,164,461</td>
<td>12,343,226</td>
<td>Decreasing</td>
</tr>
<tr>
<td>Europe</td>
<td>1,278,898</td>
<td>1,240,099</td>
<td>1,224,593</td>
<td>Decreasing</td>
</tr>
<tr>
<td>Oceania</td>
<td>131,888</td>
<td>136,364</td>
<td>139,584</td>
<td>Stable</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>23,740,110</strong></td>
<td><strong>23,819,750</strong></td>
<td><strong>24,449,449</strong></td>
<td></td>
</tr>
</tbody>
</table>

Note: unpublished data based on several assumptions; not for citation.
Global burden of PPH

Summary

If we do nothing, 709,339 more PPHs will occur in 2030 compared with 2020

- 13% increase in PPH numbers in Africa
- An additional 6,700 PPH deaths in 2030, compared with 2020 (additional deaths mostly in Africa)
Questions

Why does PPH matter?

Where are we heading?

What can we do?
What can we do?

- Effective prevention
- Early diagnosis of PPH
- Effective management
- Effective programmatic implementation
- Impactful research
### Paper 2: Prevention of postpartum haemorrhage: from evidence to implementation at scale

#### Preventing:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Prevent unwanted pregnancies</td>
</tr>
<tr>
<td>2.</td>
<td>Address risk factors (e.g., anaemia)</td>
</tr>
<tr>
<td>3.</td>
<td>Avoid unnecessary procedures (e.g., c/section, episiotomy)</td>
</tr>
<tr>
<td>4.</td>
<td>Provide standard prophylaxis at 3rd stage for all (e.g., uterotonics, CCT)</td>
</tr>
<tr>
<td>5.</td>
<td>Provide enhanced prophylaxis at 3rd stage for high risk women (e.g., combined uterotonics)</td>
</tr>
<tr>
<td>6.</td>
<td>Address risk factors for complications of PPH (e.g., anaemia)</td>
</tr>
<tr>
<td>7.</td>
<td>Detect and treat PPH early</td>
</tr>
<tr>
<td>8.</td>
<td>Detect, identify cause and treat refractory PPH early</td>
</tr>
<tr>
<td>9.</td>
<td>Provide effective catastrophic PPH management</td>
</tr>
</tbody>
</table>

#### Complications of PPH (e.g., death)

- Detect, identify cause and treat refractory PPH early

#### Health system level

- Preventing:
  - Unskilled birth attendant
  - Caesarean section

#### Facility level

- Preventing:
  - Community level

#### Facility level

- Preventing:
  - Vaginal birth

#### Preventing:

- Addressing risk factors for complications of PPH (e.g., anaemia)
**PPH model: Baseline – 100 deaths per 100,000 live births**

<table>
<thead>
<tr>
<th>Pregnancy journey</th>
<th>Antenatal period</th>
<th>Intrapartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>100,000</td>
<td>15,000</td>
<td>4,000</td>
</tr>
</tbody>
</table>

### Outcomes

- **Anaemia**
- **PPH**
- **Severe PPH**
- **Death from PPH**

### Details of outcomes

- Anaemia
  - No Anaemia
  - Anaemia

- PPH Missed
  - PHH Dx

- PHH missed
  - PHH Dx
  - sPPH missed

### Interventions

- **Intervention: Antenatal anaemia management**
- **Intervention: PPH prevention in third stage of labour**
- **Intervention: PPH Detection**
- **Intervention: First response treatment**
- **Intervention: Severe PPH Detection**
- **Intervention: Refractory PPH treatment**
- **Intervention: Catastrophic PPH management**

### Improvements

- **Anaemia reduction**: 25% relative reduction
- **PPH prevention**: 80% to 90%
- **Improved detection**: 50% to 90%
- **Improved PPH Tx**: A 30% relative reduction in sPPH
- **Improved sPPH detection**: Relative reduction in sPPH missed
- **Improved sPPH Tx**: A 20% relative reduction in deaths
- **Improved Mx of catastrophic PPH**: A 20% reduction in death rates

### Scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>39%</td>
<td>80%</td>
<td>50%</td>
<td>4,000</td>
<td>50%</td>
<td>0%</td>
<td>100</td>
</tr>
<tr>
<td>Improvement</td>
<td>0%</td>
<td>0%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

(All improvements are relative unless specified as absolute.)

*Note: unpublished data based on several assumptions; not for citation*
PPH model: Intervention 1 – 25% relative reduction in anaemia, resulting in 10% death reduction

<table>
<thead>
<tr>
<th>Pregnancy journey</th>
<th>Antenatal period</th>
<th>Intrapartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>100,000</td>
<td>13,948</td>
<td>3,719</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Anaemia</td>
<td>PPH</td>
<td>Severe PPH</td>
</tr>
</tbody>
</table>

Interventions
- Intervention: Antenatal anaemia management
- Intervention: PPH prevention in third stage of labour
- Intervention: PPH Detection
- Intervention: First response treatment
- Intervention: Severe PPH Detection
- Intervention: Refractory PPH treatment
- Intervention: Catastrophic PPH management

Improvements
- Anaemia reduction: 25% relative reduction
- PPH prevention: 80% to 90%
- Improved detection: 50% to 90%
- Improved PPH Tx: A 30% relative reduction in sPPH
- Improved sPPH detection: Relative reduction in sPPH missed
- Improved sPPH Tx: A 20% relative reduction in deaths
- Improved Mx of catastrophic PPH: A 20% reduction in death rates

Scenario
- Current: A
- Improvement: 25% (Relative)

Note: unpublished data based on several assumptions; not for citation
What can we do?

- Effective prevention
- Early diagnosis of PPH
- Effective management
- Effective programmatic implementation
- Impactful research
# PPH model: Intervention 2 – PPH detection improved from 50% to 90%, resulting in 50% death reduction

## Outcomes

<table>
<thead>
<tr>
<th>Pregnancy journey</th>
<th>Antenatal period</th>
<th>Intrapartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>100,000</td>
<td>15,000</td>
<td>2,560</td>
</tr>
<tr>
<td>Deaths following no or delayed Tx</td>
<td></td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Deaths following timely Tx</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Details of outcomes

- **Anaemia**
  - No Anaemia
  - Anaemia

## Interventions

- **Intervention:** Antenatal anaemia management
- **Intervention:** PPH prevention in third stage of labour
- **Intervention:** PPH Detection
- **Intervention:** First response treatment
- **Intervention:** Severe PPH Detection
- **Intervention:** Refractory PPH treatment
- **Intervention:** Catastrophic PPH management

## Improvements

- **Anaemia reduction:** 25% relative reduction
- **PPH prevention:** 80% to 90%
- **Improved detection:** 50% to 90%
- **Improved PPH Tx:** A 30% relative reduction in sPPH
- **Improved sPPH detection:** Relative reduction in sPPH missed
- **Improved sPPH Tx:** A 20% relative reduction in deaths
- **Improved Mx of catastrophic PPH:** A 20% reduction in death rates

## Scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Current</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>39%</td>
<td>0%</td>
</tr>
<tr>
<td>B</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>C</td>
<td>50%</td>
<td>90%</td>
</tr>
<tr>
<td>D</td>
<td>2,560</td>
<td>0%</td>
</tr>
<tr>
<td>E</td>
<td>78%</td>
<td>0%</td>
</tr>
<tr>
<td>F</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>G</td>
<td>50</td>
<td>0%</td>
</tr>
</tbody>
</table>

Note: unpublished data based on several assumptions; not for citation
What can we do?

- Effective prevention
- Early diagnosis of PPH
- Effective management
- Effective programmatic implementation
- Impactful research
# PPH management

<table>
<thead>
<tr>
<th></th>
<th>Vaginal birth</th>
<th>Caesarean section</th>
<th>Home birth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagnose PPH and triage</strong></td>
<td>Objective measurement 300ml and clinical judgment or 500ml</td>
<td>Objective measurement 500ml and ongoing bleeding or clinical judgment</td>
<td>Clinical signs of haemodynamic instability</td>
</tr>
<tr>
<td><strong>First response treatment</strong></td>
<td>?</td>
<td>Modified MOTIVE?</td>
<td>Cause-specific treatment</td>
</tr>
<tr>
<td><strong>Escalation</strong></td>
<td>Clinical escalation protocol</td>
<td>Clinical escalation protocol</td>
<td>TBC</td>
</tr>
<tr>
<td><strong>Refractory PPH</strong></td>
<td>TBC</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td><strong>Catastrophic PPH (MTP/Laparotomy/Hysterectomy)</strong></td>
<td>ReAct</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td><strong>Post-natal management</strong></td>
<td>TBC</td>
<td>TBC</td>
<td>TBC</td>
</tr>
</tbody>
</table>
**PPH model: Intervention 3 – First response treatment improved by 30%, resulting in 12% death reduction**

### Details of outcomes

- **Anaemia**: No anaemia, Anaemia
- **PPH**: PHH Missed, PHH Dx
- **Severe PPH**: PHH and sPPH missed, PHH missed/sPPH missed
- **Death from PPH**: Deaths following timely Tx, Deaths following no or delayed Tx

### Interventions

- **Intervention: Antenatal anaemia management**
- **Intervention: PPH prevention in third stage of labour**
- **Intervention: PPH Detection**
- **Intervention: First response treatment**
- **Intervention: Severe PPH Detection**
- **Intervention: Refractory PPH treatment**
- **Intervention: Catastrophic PPH management**

### Improvements

- **Anaemia reduction**: 25% relative reduction
- **PPH prevention**: 80% to 90%
- **Improved detection**: 50% to 90%
- **Improved PPH Tx**: A 30% relative reduction in sPPH
- **Improved sPPH detection**: Relative reduction in sPPH missed
- **Improved sPPH Tx**: A 20% relative reduction in deaths
- **Improved Mx of catastrophic PPH**: A 20% reduction in death rates

### Scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Current</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>39%</td>
<td>0%</td>
</tr>
<tr>
<td>B</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>C</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>D</td>
<td>3,463</td>
<td>30%</td>
</tr>
<tr>
<td>E</td>
<td>48%</td>
<td>0%</td>
</tr>
<tr>
<td>F</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>G</td>
<td>88%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Note: unpublished data based on several assumptions; not for citation
PPH model: impact of multiple interventions, resulting in 80% death reduction

Outcomes

<table>
<thead>
<tr>
<th>Pregnancy journey</th>
<th>Antenatal period</th>
<th>Intrapartum</th>
<th>Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>100,000</td>
<td>12,204</td>
<td>1,673</td>
</tr>
</tbody>
</table>

Outcomes

- Anaemia
- PPH
- Severe PPH
- Death from PPH

Details of outcomes

- Anaemia: No anaemia
- PPH: PPH Missed
- Severe PPH: PPH and sPPH missed
- Death from PPH: Deaths following timely Tx, Deaths following no or delayed Tx

Interventions

- Intervention: Antenatal anaemia management
- Intervention: PPH prevention in third stage of labour
- Intervention: PPH Detection
- Intervention: First response treatment
- Intervention: Severe PPH Detection
- Intervention: Refractory PPH treatment
- Intervention: Catastrophic PPH management

Improvements

- Anaemia reduction: 25% relative reduction
- PPH prevention: 80% to 90%
- Improved detection: 50% to 90%
- Improved PPH Tx A 30% relative reduction in sPPH
- Improved sPPH detection: Relative reduction in sPPH missed
- Improved sPPH Tx: A 20% relative reduction in deaths
- Improved Mx of catastrophic PPH: A 20% reduction in death rates

Scenario

- Current: A
- Improvement: 25%

Note: unpublished data based on several assumptions; not for citation

A: Anaemia: 25% RRR
B: PPH prevention: 25% RRI
C: Detection: 40% ARI
D: First response Mx: 30% RRR
E: Refractory Mx: 30% RRR
F: Catastrophic PPH Mx: 20% RRR

Unpublished data – not for citation
What can we do?

- Effective prevention
- Early diagnosis of PPH
- Effective management
- Effective programmatic implementation

**Impactful research**

*The WHO PPH Summit*
TIME TO ACT!

Why does PPH matter?
- One PPH every 1.5 seconds
- A mother dies every 7 minutes
- Greatest burden in Africa
- Physical and psychological consequences

Where are we heading?
- PPH numbers and deaths are on the rise

What can we do?
- Effective prevention
- Early diagnosis of PPH
- Effective management and programmatic implementation
- Impactful research
What women want: The realities about PPH from women's voices
Angela Nguku, Executive Director-WRA Kenya
7 March 2023
White Ribbon Alliance Kenya (WRA Kenya)

- WRA Kenya is a powerful network of advocates working for reproductive, maternal and newborn health and rights at the community, county and national levels. We mobilize communities, helping them to recognize and seize their power to demand that all women and girls access quality health care and actively participate in decision-making processes that affect their lives.

- WRA Kenya helps communities understand that they have rights and the power to hold their duty bearers accountable for commitments made and money spent.

- WRA Kenya’s networks are unique partnerships made up of citizens, health workers, policy makers, community-based organizations, media and other people who best understand their county’s challenges and the most viable solutions.
White Ribbon Alliance
Kenya’s Approach

Our approach is both simple and effective!

ASK
Women what they want

LISTEN
To their concerns and ideas for change

ACT
With women and galvanize others to do the same
ARE YOU READY FOR A REVOLUTION?

WHAT WOMEN WANT!
Women and girls have spoken, now it’s time to listen.

Since the early days of Hamara Swasthya Hamari Awaaz

359 partners gathered 1,197,006 demands from 114 countries
What Women Want
Methodology

- What is your top priority for your reproductive and maternal healthcare?
- 70% of responses were hand-coded
- Total of 61 categories

for download: whatwomenwant.org/globalfindings.
103,584 Women Want Respectful and Dignified Care

“LISTEN TO ME”
ARE YOU READY FOR A REVOLUTION?

WHAT WOMEN WANT!

90,625 Women Want
Water, Sanitation and Hygiene

“CLEAN ENVIRONMENT”
Are you ready for a revolution?

What women want!

3

82,805 women want medicines and supplies

“Big hospitals lack medicine which is not normal”
kenya

my one request for quality reproductive 
& maternal healthcare services is.

enough medication

mary goreta 39, nyadela'x
The stories from across Kenya
“We have lost many mothers to PPH. We lack proper basic equipment, and our pharmacy is not stocked with drugs for cases such as PPH or other complications that kill mothers. **A proper equipped maternity ward is the most crucial need for this facility with well trained staff. In the meantime, an efficient referral system will improve our services for us to be able to save mothers.**”
"I was not aware of PPH before I delivered this baby. No one told me about it. I had heard of the basics of pregnancy and thought after delivery that is all. I now know better. Every time I look at my baby, I imagine she would have been motherless by now. I wish young mothers can get the right information about pregnancy and childbirth. It is a matter of life and deaths. There is need for intensive awareness on PPH and its implications to young mothers. Knowledge will help save mothers and newborns”
"This is my niece Amani and my mother. We are the only mother she knows. Her mother, my sister died from bleeding after delivery. She died in a local health facility. There was no blood bank and the staff told us that the drugs to stop bleeding were out of stock. The facility did not have a stand-by ambulance. It has been 3 years now. **Our facilities really need to be ready to save mothers lives**"
“I have witnessed many women in my neighborhood die of bleeding after delivery. I too would have been a statistic. I had a normal pregnancy and attended all my clinics. I delivered well in the local health facility. However, I recall bleeding too much. Thankfully, the staff were keen to note and referred me to the nearby higher facility. However, the ambulance did not have fuel. My husband managed to hire an ambulance, and this got me to the other side where I was attended to. I wish all our facilities had all it takes to save mothers lives but most importantly, I wish all mothers knew about its dangers”
Zainab, PPH survivor
Isiolo County

“I am happy I survived to tell my story. I believe it is because I attended my antenatal care religiously and was able to be advised on delivering in a health facility. Being a community health worker helped me too. I delivered normally but I started bleeding almost immediately. The nurses knew me and had to rush to a nearby private facility to get a drug to stop the bleeding. The private facility had what was needed. I can only imagine if they did not have it. I was weak for long but today I am alive. As a CHV, I have seen many mothers die of bleeding. Something urgent must be done to save mothers. Investments in drugs and blood banks is a must.”
Thank You
Postpartum Haemorrhage Summit

Actionable framework for reducing PPH morbidity and mortality: A proposal
Joannis Gallos, WHO
7 March 2023
Disease frameworks illustrations (1/3)

HIV Care Continuum
Public health model that outlines the steps or stages that people with HIV go through from diagnosis to achieving and maintaining viral suppression
Malaria elimination
Set of recommended interventions for deployment and enhancement over time

Disease frameworks illustrations (2/3)
Integrating care for Tuberculosis
Framework for collaborative action for Tuberculosis and its comorbidities

**Impact**
Reduce death and suffering due to TB and comorbidities

**Interventions**
- Find and treat TB among people with key health–related risk factors
- Prevent TB among people with identified health–related risk factors
- Find and treat Comorbidities among people with TB
- Prevent Comorbidities among people with TB

**Actions to scale up people–centred care for TB and Comorbidities**
- Conduct an analysis of across to quality services for TB and Comorbidities
- Coordinate planning and resource mobilization for collaborative action

**Principles**
- Evidence-based response
- Multisectoral engagement and accountability
- People-centred services
- Protection and promotion of human rights, ethics and equity
- Strong coalition with affected communities and civil society
- Universal health coverage
PPH Framework
What if we try to improve care for PPH without a framework?

- Not addressing all contributory factors
  - Lack of comprehensive understanding of the disease and its context would lead to narrow focus and not address the multiple contributory factors for PPH
  - Risk factors for PPH:
    - Anemia
    - Placenta praevia/accreta
    - Induction of labour
    - Augmentation of labour
    - Perineal tears
    - Retained placenta
  - No synthesis of evidence or guidance
  - Synthesis available and 3 recs

- Scattered approach to prevention & treatment could miss root causes
  - Multiple efforts addressing same root causes and no efforts addressing others

- Limiting opportunities for innovative research
  - There is more evidence for domains with available guidance and there is no guidance typically there is less research

Risk factors for PPH:
- Anemia
- Placenta praevia/accreta
- Induction of labour
- Augmentation of labour
- Perineal tears
- Retained placenta
What would be the benefits of using a framework for PPH?
What would be the benefits of using a framework for PPH?

**Pregnancy**
- Antenatal care
- Intrapartum care
- Birth
- Postnatal Care
- PPH
- First line treatment
- sPPH
- Refractory treatment
- Death or complications

**Risk factors/Contributors**
- Anaemia
- Placenta praevia/accreta
- Induction of labour
- Augmentation of labour
- Retained placenta
- Poor quality uterotonic
- Delay in diagnosis
- Poor quality uterotonic
- Lack of access to TXA
- Lack of surgical theater
- No access to blood
- Lack of referral or transport
- Labour
- Birth
- PPH
- sPPH
- Refractory treatment
- Death or complications

- Episiotomy
- Induction of labour
- Retained placenta
- Delay in diagnosis
- Poor quality uterotonic
- Lack of access to TXA
- Lack of surgical theater
- No access to blood
- Lack of referral or transport
What would be the benefits of using a framework for PPH?

<table>
<thead>
<tr>
<th>Pregnancy</th>
<th>Labour</th>
<th>Birth</th>
<th>Postnatal Care</th>
<th>PPH</th>
<th>First line treatment</th>
<th>sPPH</th>
<th>Refractory treatment</th>
<th>Death or complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenatal care</td>
<td>Induction of labour</td>
<td>Retained placenta</td>
<td>Delay in diagnosis</td>
<td>Lack of surgical theater</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrapartum care</td>
<td>Augmentation of labour</td>
<td>Poor quality uterotonic</td>
<td>Poor quality uterotonic</td>
<td>No access to blood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birth</td>
<td></td>
<td></td>
<td></td>
<td>Lack of access to TXA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postnatal Care</td>
<td></td>
<td></td>
<td></td>
<td>Lack of referral or transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sPPH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death or complications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Risk factors/Contributors**
- Anaemia
- Induction of labour
- Retained placenta
- Delay in diagnosis
- Lack of surgical theater
- Placenta praevia/accreta
- Augmentation of labour
- Poor quality uterotonic
- Poor quality uterotonic
- No access to blood
- Episiotomy
- Lack of access to TXA
- Lack of referral or transport

**Strategies**
- Prevention
- Diagnosis
- First line treatment
- Refractory treatment
- Post PPH supportive care
- Health systems

**Health systems**
What would be the benefits of using a framework for PPH?

**Pregnancy**
- Antenatal care
- Intrapartum care
- Birth
- Postnatal Care
- PPH
- First line treatment
- sPPH
- Refractory treatment
- Death or complications

**Risk factors/Contributors**
- Anaemia
- Induction of labour
- Retained placenta
- Delay in diagnosis
- Lack of surgical theater
- Placenta praevia/accreta
- Augmentation of labour
- Poor quality uterotonic
- Poor quality uterotonic
- No access to TXA
- No access to blood
- Episiotomy
- Lack of access to TXA
- Lack of referral or transport

**Strategies**
- Prevention
- Diagnosis
- First line treatment
- Refractory treatment
- Post PPH supportive care

**WHO recommendations**
- No rec
- No rec
- Uterotonics
- Flids
- Massages
- TXA
- Uterotonics
- Supportive care
- Temporizing
- Surgery
- Embolization
- Protocols
- Referrals
- Simulation
- Monitoring

**Health systems**
- Cord traction
- N=19
- N=2
- N=5
- N=4
- N=7
Next steps

Map effective interventions
Develop model for assessing the impact of risk and contributory factors to PPH and the impact of effective interventions

Examine framework domains for new recommendations
Extend the mapping to existing interventions and deep dive to the domains where more research and guidance is needed
How can different stakeholders support PPH objectives?
Role of stakeholders

Ministries of Health & National Regulatory agencies

Care providers (public and private)

Civil society organizations

Industry & Innovators

Academia and research

WHO and other normative organizations

Funding agencies & donors
Ministries of Health & National Regulatory agencies

1. Assess country priorities and define national strategy
2. Ensure guidelines are up to date, aligned with WHO recommendations and reflective of national context
3. Support advocacy efforts towards the population & HCW
4. Engage across the ecosystem, connecting key stakeholders and disseminating data
5. Provide adequate resource to health facilities and to the enforcement of policies and guidelines
6. Further streamline and strengthen national regulatory pathways
Ministries of Health & National Regulatory agencies

Care providers (public and private)
1. Adhere to guidelines
2. Manage supplies and storage
3. Provide dignified and respectful care
1. Mobilize resources
2. Support targeted advocacy efforts
3. Foster political will and build capacity of leaders
4. Mobilize communities and liaise across stakeholder groups
1. Focus innovation on priority gaps
2. Develop new tools with a health equity lens
3. Generate evidence
1. Focus research on prioritized gaps
2. Participate in the training of healthcare professionals
3. Support the field (e.g., trial design, modeling efforts)
1. Harmonize recommendations and advocate for their implementation
2. Support countries in implementing strategies and promoting adherence to guidelines
3. Share knowledge and best practices
4. Develop toolkits to guide HCWs
1. Advocate and respond to call to action
2. Coordinate investments with WHO and identified priorities
3. Support efforts across global, regional, and local levels and across the full spectrum of activities
4. Ensure alignment across donors
5. Communicate on investments and expected impact
**ERGOT in Eastern and Western Medicine**

**600-1100**

- **ERGOT - Eastern Medicine**
  - Fungus on rye, wheat and barley
  - Recognized for increasing uterine contractions
  - Powders, tinctures
  - No control over what dose, timing
  - Reports of stillbirths and maternal death
  - Chou Fung wrote about its obstetrical uses in 1100

**1800s**

- **ERGOT - Western Medicine**
  - Fungus on rye, wheat and barley plants
  - Epidemics of Illnesses through the millennia in bread made from the infected flour
  - No control of dosage, form, and the fungus itself has various strengths/concentrations
  - 1807: First dose (10 grains) developed
  - 1839: Edwin John Queckett (botanist, surgeon), named it Ergotoetia abortifaciens
  - Continued use by midwives and doctors of powders, tinctures, and compressed powder/tablets
  - No purity or standardization
  - Increased reports of uterine rupture, still births, placenta abruption, maternal deaths
ERGOT Alkaloids and OXYTOCIN

<table>
<thead>
<tr>
<th>1918-present</th>
<th>1953-present</th>
<th>1963</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ERGOT Alkaloids: Uterotonic</strong></td>
<td><strong>OXYTOCIN: Uterotonic</strong></td>
<td><strong>A combination of ergometrine and oxytocin (Syntometrine) was synthesized in 1963 – Embrey</strong></td>
</tr>
<tr>
<td>- First synthesized alkaloid, ergotamine noted to accelerate labor and control PPH</td>
<td>- Naturally occurring hormone was discovered in 1909: Sir Henry H. Dale found that an extract from the human posterior pituitary gland contracted the uterus of a pregnant cat</td>
<td></td>
</tr>
<tr>
<td>- 1935: Ergometrine/ergonovine alkaloid extracted from ergot fungi</td>
<td>- Oxytocin alkaloid first synthesized 1953</td>
<td></td>
</tr>
<tr>
<td>- 1942: Description of prophylaxis using IV ergometrine (Davis &amp; Boynton)</td>
<td>- Continues to be used as first line prevention and treatment medication</td>
<td></td>
</tr>
<tr>
<td>- 1953: Martin &amp; Dumoulin Use of IV Ergometrine to Prevent PPH</td>
<td>- Continues to be tested against other uterotonics in a variety of routes and doses</td>
<td></td>
</tr>
<tr>
<td>- Contraindications for women with cardiac and hypertension</td>
<td>- Efficacious, but quality deteriorates without refrigeration, problem in LMICs</td>
<td></td>
</tr>
<tr>
<td>- Needs refrigeration (stable at room temp ~ 3months) and shouldn’t be exposed to light</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 2020 (Donnan) Interaction of temperature and light exposure exposed to light ergometrine was stable for approximately 4 days at 25°C and 10 days at 4°C.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 1910
- 1920
- 1930
- 1940
- 1950
- 1960
1958–present: Active Management of Third Stage Labor (AMTSL)

- 1958, 1962: The use of an IV uterotonic (ergometrine IV) with delivery of head and controlled delivery of the placenta using Brandt Andrews Maneuver, this was also called Controlled Cord Traction
- 1980s: RCTs of AMTSL vs. Expectant management, i.e. Prendevile 1988, Bristol Trial showed lower blood loss than expectant management
- 2004-2006: ICM/FIGO joint Statement on AMTSL
- 3 procedures
  - IV/IM oxytocin
  - Delayed Cord Clamping
  - CCT
- WHO Statements on AMTSL 2007-2014
- 2012: Included in WHO PPH Guidelines
- 2013: WHO stressed uterotonic administration as primary procedure, CCT and uterine massage added little to effect of uterotonic (Gulmezoglu,2012)
1962-present TRANEXAMIC ACID

**1962-present Tranexamic Acid (TXA)**

TXA is an antifibrinolytic drug that inhibits enzymatic breakdown of fibrin in blood clots (fibrinolysis)

- **1962:** Discovered in Japan by Drs. Utako and Shosuke Okamoto, EACA, later developed more potent form TXA
- **2010-12 CRASH 2/3 trials:** RCTs decreasing blood loss and mortality when used in first 3 hours for trauma and surgery
- **2012:** WHO recommendation TXA for PPH as conditional: use when uterotonics fail to control the bleeding or traumatic etiology
- **2017:** WOMAN trial: RCT doubled blind, placebo-controlled trial with > 20,000 women, decreased blood loss
- **2017:** WHO Updated Guidance TXA in PPH, 5 months after WOMAN trial published: early use of intravenous TXA ≤ 3 hours of birth plus standard care for PPH, all births
  - TXA should be used in all cases of PPH, not just trauma
  - TXA should be administered at a fixed dose of 1 g in 10 mL (100 mg/mL) IV at 1 mL per minute (i.e., administered over 10 minutes), with a second dose of 1 g IV if bleeding continues after 30 minutes.
  - TXA should be administered via an IV route only for treatment of PPH.
- **Research on other routes is a priority**
- **2018:** Cochrane Review - TXA reduces the risk of maternal death due to bleeding by 20%
- **TXA still under study for other routes of administration and for prevention as well as treatment**
- **Preliminary data from survey of >1000 health care providers in 4 African countries demonstrated < 50% used TXA as primary response (Emotive survey)**
- **2022:** Ng’ang’ aet.al., Challenges in updating national guidelines and essential medicines lists in Sub-Saharan African countries

Followed WHO Scientific guidance for evidence-based practice, based on evidence of effects in Trauma and Surgery, then large RCTs proving efficacy for PPH, and rapid updating in WHO guidelines

Uptake slower and less intensive than expected, difficulties updating national guidelines

txacentral.lshtm.ac.uk/
1970–present: Non-pneumatic Anti-Shock Garment (NASG)

- 1970s: Military used Pneumatic Anti-Shock Garments to rescue soldiers with traumatic injuries
- 1970s: Without evidence put on ambulances for pre-hospitalization treatment of shock
- 1984: Problems seen with excessive pressures of the PASG (Kaback): compartment syndrome and ischemia
- 1987: Bickell conducted first RCT in pre-hospital treatment of abdominal wounds, found no benefit of PASG for mortality
- PASG fell out of favor, still controversial in Emergency Medicine/Ambulance
- NASA/Ames developed NASG to overcome problems with PASG
- 2004: (Hensleigh) case series in Pakistan, used “successfully” in 13 of 14 cases
- 2006: First comparative, quasi experimental pilot of NASG compared to prospectively collected data on usual care in Egypt, significant 50% reduction in blood loss and in mortality (NS)
- 2007-2012: quasi-experimental studies at tertiary care facilities in Nigeria and Egypt, ~ 50% SS reduction in Mortality
- 2012: WHO Guidelines as a temporizing measure, part of the recommendation was absence of any safety issues
- 2013: Randomized Cluster Trial comparing early application prior to transport at PHCs with later application on arrival at tertiary care centers in Zambia and Zimbabwe, 54% reduced odds of EAO and significantly faster shock recovery suggest treatment benefits from earlier application
- 2015: CHAI and UNICEF/ UNCOLSC: Expanded use, availability, decreased price
- 2015: (Pileggi-Castro) Systematic Review of Quasi-Experimental studies, also favored NASG for reducing mortality and morbidity SS: 48%

Followed WHO Scientific guidance for evidence-based practice feasibility trials, pilots, and then RCTs proving efficacy in a number of different settings

Implementation slow
1985-present Uterine Balloon Tamponade

- 1985: First Case describing Foley for tamponade, 2 cases, Bowen & Benson
- 2001 (Bakri), case series 6 women
- 2003 (Akhter) First publication on improvised UBT LMIC
- Other descriptive studies published, citing success rates of what % of women did not need further treatment, however, no comparator for if women would have stopped bleeding if only receiving standard of care
- 2012: WHO Guidelines, recommending UBT for refractory PPH (weak recommendation/very low-quality evidence (22 case series, 18 case reports, total 278 women)
- 2017 (Dumont) UBT as adjunct to misoprostol …an RCT in LRC showed no benefit and some safety concerns
- 2019: (Anger) Stepped Wedge cRCT Uganda, Egypt, Senegal found no benefit, and association with increased surgery and maternal death, The adjusted IR ratio was 4.08.
- Continuing descriptive studies with inadequate sample sizes, lack of randomization or comparator
- 2021: WHO Guidelines - Updated recommendation: UBT for rPPH in limited settings (based on 2 RCTs vs standard care, 15 non-randomized studies, 69 case series)
- Context specific recommendations:
  - PPH first-line treatment protocol - uterotonics, TXA, IVs, available
  - Other causes of PPH (retained placental tissue, trauma) can be reasonably excluded.
  - Insertion by health personnel who are trained and skilled in the management of PPH, including UBT
  - Maternal condition can be regularly and adequately monitored for prompt identification of deterioration
- 2023: RED trial is a phase III RCT investigating efficacy of three tamponade devices (the Ellavi fixed-volume UBT, the Ellavi free-flow UBT, and the Suction Tube Uterine Tamponade (STUT) device) against the control device, the Foley catheter

DID NOT follow WHO Scientific guidance for evidence-based practice, multiple case studies, case series, and retrospective (records review) pre-intervention/intervention studies. WHO revised their 2012 recommendation on UBT in 2021 to contextual. There is no clinical equipoise to conduct a trial against, so ongoing research studies one device against another device.

Despite this, UBT in multiple forms has very widespread use among almost all providers everywhere.
1988-present MISOPROSTOL

- Misoprostol: prostaglandin (also called MISO)
- 1988: Misoprostol (Cytotec) entered market as ulcer treatment, reports of uterine contractions
- Advantage over other uterotonics is heat stable and oral
- 2004: (Sanghvi) pilot of community distribution of miso in Indonesia
- 2006: (Dermen) home births, India misoprostol administered by ANMs, significant 47% reduction in PPH, and an 80% reduction in severe PPH
- 2006: WHO technical consultation on PPH prevention and early registration in Nigeria
- 2007: WHO guidelines on PPH prevention and ICM/FIGO statement on new advances in PPH preventing in LRS
- 2011: WHO Model List of Essential Medicines
- 2012: WHO PPH Recommendations
- Multiple studies comparing various uterotonics to misoprostol
- Rapid uptake and is found everywhere, despite early concerns about use as Abortifacient
- 2018: (Morris) FIGO publication on lack of congruence in recommendations on national guidelines prevention and treatment
  - Doses. Prevention 400μg-1000μg; Treatment, 400μg-1000μg
  - Routes of administration: for both treatment and prevention oral, sublingual and rectal
- WHO: P: 600 μg oral, T: 800 μg sublingual
1992-present heat stable carbetocin

### 1992-present Carbetocin and Heat Stable Carbetocin

- Carbetocin is long-acting synthetic analogue of oxytocin with agonist properties
- 1992: (Hunter) Effects on postpartum uterus
- 1997: Ferring develops and manufactures Carbetocin
- 1998: (Boucher) First trial of carbetocin vs oxytocin in CS
- 2010: Ferring develops heat stable carbetocin formulation (HSC)
- 2013: WHO, Merck, Ferring form tripartite agreement to fund CHAMPION trial and agree to special access pricing for LMICs
- 2018: Widmer, NEJ, CHAMPION TRIAL HSC was noninferior to oxytocin for the prevention of blood loss of at least 500 ml or the use of additional uterotonic agents, ~28,000 women
- 2018: WHO updates the recommendation on uterotonics for PPH prevention to include HSC for those w/o access to high quality oxytocin
- 2018: WHO includes HSC for prevention of PPH on EML
- 2019: stringent regulatory authority (SRA) approval for HSC for PPH prevention
- Ng’ang’a (2022). Implementation and inclusion in national guidelines lags SRA and WHO recommendations challenging
- 2022: WHO treatment trial of HSC vs Oxytocin for treatment, UNITAID ongoing

- Followed WHO Scientific guidance for evidence-based practice trials, pilots, and then RCTs proving efficacy in a number of different settings
- Undergoing registration in several countries now, some lag
- Guidelines FIGO & WHO: Carbetocin (100 µg, IM/IV) for prevention of PPH for all births in contexts where its cost is comparable to other effective uterotonics
- Carbetocin in preference to oxytocin for women with one risk factor for PPH
Postpartum Haemorrhage Summit

Summary of PPH innovations in the pipeline and challenges in maternal health R&D ecosystem affecting new innovations

A. Metin Gülmezoglu, Concept Foundation ; Pauline Williams, CBE, Pharmaceutical Consultant

7 March 2023
Scope of Innovations

Medicines
Devices
Diagnostics
PPH medicines and devices pipeline

Methodology

STEP 1
Preliminary candidate identification
• Adis Insight, Citeline’s Pharmaprojects

STEP 2
Clinical development data review
• Review clinical trial data from Adis Insight and International Clinical Trials Registry Platform (ICTRP).

STEP 3
Targeted literature review and candidate deep-dives

STEP 4
Expert validation

Timeline 2000 - 2023
**Medicines highlights**

- **New coagulation factor products being developed or approved**
  - Factor VIIa (CT-001 – pre-clinical, Eptacog alfa - approved)
  - Platelets
  - Recombinant von Willebrand factor
  - Fibrin stabilizing factor (f XIII)
  - Fibrinogen concentrate
  - Fresh Frozen Plasma

- **Dietary/Minerals**
  - Calcium chloride

- **Drugs**
  - Oxytocin products
    - Inhaled - Monash
    - Microarray patch - Merck
    - Oral - PATH
    - Uniject – X
  - TXA innovations
    - Inhaled - Crystec
    - Intramuscular/low volume - Rafa

**49 products**

- **Drugs**
- **Dietary supplements**
- **Biologics**

- **Drugs**
  - 26 (53%)
- **Dietary supplements**
  - 14 (29%)
- **Biologics**
  - 9 (18%)
Coagulation factor innovations seem to occur outside the maternal health field and their potential impact for PPH remains limited.

Alternative oxytocin delivery systems are not close to completing their R&D journeys.

Promising innovations in tranexamic acid R&D.
Understanding the broad range of devices
Devices are most important when medications fail, and we want either expedited and safe referral OR avoid surgery.

We need different devices to intervene at multiple bleeding sources simultaneously or sequentially.

We should be covering the main sources of bleeding and provide haemodynamic support.

Ideally, the device should be applicable at the peripheral level and remain functional through transfer.
Challenges
Challenges to prioritise investment in PPH innovations

Material Health Spend (IHME)

- Maternal Health a “niche” area in pharma
  - Often a CSR/philanthropic exercise

Organisational priorities can change over time

High Risk (Medicine > Device)

Low return on investment (unless offset by commercial returns in high income countries)

Complexities of running trials in acute (emergency) situations

Standards of care differ across regions

No universally-accepted target product profiles

PPH R&D and Spend (G-Finder)

- Material Health Spend (IHME): ~ $5Bn
- PPH R&D and Spend (G-Finder): $16 million (2016-2021)
R&D and Regulatory Ecosystem Disconnected and Complex

**Preclinical and Clinical Development**
- Lack of good preclinical models
- Scarce clinical trial networks/expertise and no product development partnerships (like in neglected diseases)
- PPH is unpredictable
  - need to pre-consent pregnant women
  - reluctance to test new interventions unless very high probability of success (catch 22)
  - intensive monitoring challenging in emergency context
- Choice of comparators difficult (especially if SOC is off-label)
- Challenge to keep cost of goods down to ensure affordability

**Regulatory Approval**
- Lack of accelerated pathways
- CE mark approval slow (18-24m in Europe)
- Requirement for country-level regulatory approval even after stringent regulatory authority approval and WHO PQ
  - May require local confirmatory studies
  - Time-consuming and costly to create bespoke submissions
  - Can result in divergent labels across regions
  - Delays access

Feedback from key players in PPH innovation
Access Ecosystem
Disconnected and Complex

Feedback from key players in PPH innovation

Real World Evidence
- Regulatory approval generally based on relatively small, controlled trial data-sets
- Local RWE requirements differ, resulting in multiple parallel pilot/implementation studies across regions
- Cost-effectiveness data not universally accepted
- Training and pharmacovigilance resources usually borne by innovator rather than countries

Procurement/Access
- Lack of connectivity and coordination of key stakeholders to recommend adoption of new interventions
- Slow uptake of WHO guidelines and EML recommendations
- Unpredictable demand estimates
- Disconnect between visibility of tenders and long lead-in times for manufacture
- Need for strategic partnerships to facilitate demand-generations and local supply-chains
Key Recommendations

What needs to change in the R&D Ecosystem?

Global consensus
- Target Product Profiles
- Clear requirements for international and local policy change

Local insights
- Better understanding of individual country-level requirements e.g. local practice, cost-effectiveness data needed, insights on training needs etc.

Maternal Health Collaborative R&D network
- Product Development Partnership (PDP)-like coordination to link and support innovators
- Pre-clinical and clinical trial expert networks

Coordinated Regulatory Pathways
- Accelerated, fast-track reviews / Conditional approvals
- Harmonisation/mutual recognition across authorities

Supranational and National Networks
- Coordinated effort across NGOs, academia, MoH to support demand-generation, training, supply and ongoing data collection
Acknowledgements

Russ Mably, CELOX Sponge Device, Medtrade

Vishal Shah, Carbetocin, Ferring

Patty Carney, JADA system device, Organon

Pete Lambert, Inhaled Oxytocin, Monash University

Andrew Weeks, PPH Butterfly device, University of Liverpool

Maria Rodriguez, XSTAT mini-sponge tamponade device, Oregon Health & Science University

Maya Goldstein, Policy Cures Research, for the pipeline analysis
Devices & Products illustrations

36 Devices
12 Products
PPH innovation pathways | End-to-end "innovation lifecycle" from conception to care

**PPH innovation pathways**

- **Product innovation**
  - Innovators, incl. academic researchers & industry experts
    - Evidence generation (phase III clinical trial)

- **New product introduction**
  - Manufacturers
    - Manufacturing base scale up
    - Diversified manufacturing
    - IP (e.g., voluntary licensing, tech. transfers)
  - Policy makers (incl. WHO)
    - Unmet PH need
    - PPC
    - TPP
    - Global normative guidance (WHO guidelines, Essential Medicines List)
    - National normative guidance (national guidelines, national Essential Medicines List)
    - EOI
  - Implementers (incl. NGOs)
    - Regulatory approval and global QA systems (WHO PQ, MAGHP, FDA, EMA, CE, marketing)
    - Post-marketing surveillance & Pharmacovigilance (responsibilities divided between regulator and manufacturer)
  - Procurers
    - Demand generation / advocacy (early product introduction)
    - Countries' regulatory approvals
    - Training, advocacy

- **Established product**
  - Regulatory agencies
  - Implementers (incl. NGOs)
    - Demand generation / advocacy (early product introduction)
    - Countries' regulatory approvals
    - Training, advocacy

- **Declining product**
  - Product-specific market-shaping considerations
  - Strategic sourcing, pooled procurement, and supplier relationship management
  - Supply chains, incl. in-country supply chains
PPH innovation pathways | Biggest hurdle is generation of evidence to inform WHO policy recommendation

- **Product innovation**
  - Innovators, incl. academic researchers & industry experts
    - New product development (preclinical, phase I, II)
    - Evidence generation (phase III clinical trial)
  - Manufacturers
    - Manufacturing base scale up
    - IP (e.g., voluntary licensing, tech. transfers)
  - Policy makers (incl. WHO)
    - Unmet PH need
    - PPC
    - TPP
    - Global normative guidance (WHO guidelines, Essential Medicines List)
  - Regulatory agencies
    - Regulatory approval and global QA systems (WHO PQ, MAGHP, FDA, EMA, CE, marketing)
    - Countries' regulatory approvals
  - Implementers (incl. NGOs)
    - Demand generation / advocacy (early product introduction)
  - Procurers

- **New product introduction**
  - Implementation research
  - EOI
  - National normative guidance (national guidelines, national Essential Medicines List)

- **Established product**
  - Diversified manufacturing
  - Post-marketing surveillance & Pharmacovigilance (responsibilities divided between regulator and manufacturer)
  - Strategic sourcing, pooled procurement, and supplier relationship management

- **Declining product**
  - Training, advocacy
  - Supply chains, incl. in-country supply chains

Most innovation at this stage
Innovation pathways | Understanding product innovation lifecycle & WHO processes is key to helping organizations better navigate and support new product development

Product volume

<table>
<thead>
<tr>
<th>Product innovation</th>
<th>New product introduction</th>
<th>Established product</th>
<th>Declining product</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Unmet public health need identified</td>
<td>• Product innovation introduced in market, gradual ramp-up</td>
<td>• Exponential market growth &amp; saturation with new product bringing benefits but reaching full penetration</td>
<td>• Potential disruption by a better, cheaper, more feasible and/or more efficacious innovation</td>
</tr>
<tr>
<td>• PPC/TPP produced by WHO</td>
<td>• Implementation research to solve barriers</td>
<td>• Less support needed</td>
<td></td>
</tr>
<tr>
<td>• Clinical trials conducted (phase I, II, III)</td>
<td>• Demand generation begins, with support from implementers</td>
<td>• WHO recommendations disseminated, inform national guidelines</td>
<td></td>
</tr>
<tr>
<td>• Product recommended in WHO guidelines, &amp; included in WHO EML/PMO</td>
<td>• Procurement funds needed</td>
<td>• Training &amp; advocacy of use</td>
<td></td>
</tr>
<tr>
<td>• Product PQ, approved by SRAs</td>
<td></td>
<td>• Post-market surveillance</td>
<td></td>
</tr>
<tr>
<td>• Seed financing needed</td>
<td></td>
<td>• Manufacturing, procurement &amp; supply-chain optimization</td>
<td></td>
</tr>
</tbody>
</table>
There are three WHO processes that innovators can leverage to drive new and existing product development:

1. **WHO Guidelines**
   - Give clinical recommendations based on best available evidence
   - **Guidelines development**
     - Research prioritization
     - Retrieval of evidence through research studies publishing results in high impact peer review journal
     - Evidence synthesis
     - Recommendations formulation

2. **Essential medicines/devices lists**
   - Provide guidance to governments, health facilities and procurers on which medicines/devices are the best value in terms of benefits for individuals and communities
   - **Inclusion in EML/PMD**
     - Request done by disease programme based on a WHO recommendation
     - Decisions are taken by members of the Expert Committee (professional expertise, equitable geographical and gender balance from all regions of the world and across settings of all income levels)

3. **Prequalification (PQ) process**
   - Assess product dossiers to determine the safety, efficacy and quality of finished pharmaceutical products
   - **Prequalification process**
     - Request issued by disease programme to PQ once the product is included in the WHO guidelines and/or EML
     - EOI issued by PQ
     - PQ applies assessment criteria used by stringent regulatory authorities (SRAs)
     - Manufacturer to submit product for PQ validation

Source: WHO
Guidelines development | WHO has a standardized process for guidelines development involving internal and external stakeholders

Steps

1. Identification of priority question & critical outcomes
2. Retrieval of evidence
3. Assessment & synthesis of evidence using GRADE
4. Recommendation formulation & approval of final guideline
5. Plan for dissemination, implementation, impact evaluation & updates

Deep dive

Considerations:
- Balance of desirable and undesirable effects
- Quality of supporting evidence
- Stakeholder values/preferences
- Resource requirements
- Cost-effectiveness
- Acceptability
- Feasibility
- Equity

Groups supporting each step

Guideline Steering Group (GSG, topic experts), with feedback from Guideline Development Group (GDG, multidisciplinary team of technical experts, end-users/receivers & guideline experts)

Performed by the Evidence Synthesis Group (systematic review & guideline methodologists)

Guideline Development Group & an External Review Group (ERG) comment on clarity, provide real-world perspectives. ERG does not change recommendations
Essential products lists | Innovators need to provide evidence during application

EML Process

Proposal preparation: dossier to support inclusion, change or deletion

Proposal submission

Proposal review by WHO Expert committee on Selection and Use of Essential Medicines

Next review: April 2023

Evidence requirements from innovators

- Key information on proposed medicine(s)
  - International non-proprietary name (INN)
  - Anatomical therapeutic chemical (ATC) code
  - Dosage form(s) and strength(s)
  - Indication(s)

- Evidence of benefits
  - Public health relevance of the proposed medicine(s)
  - Safety and efficacy
  - Cost-effectiveness

- Regulatory status, market availability, incl. patent status and pharmacopoeia standards

❖ Engagement with WHO technical department – applications encouraged to seek support from relevant WHO technical departments as part of application process

Source: WHO information for applicants preparing a submission for the 2023 meeting of the WHO Expert Committee on Selection and Use of Essential Medicines
Prequalification | Innovators need to provide evidence during application

**Prequalification Process**

1. **WHO EOI issuance**
   - WHO issues **EOI by therapeutic areas** (w/ input from diseases specialists)

2. **New product PQ application**
   - Manufacturers submit **dossier**, where product characteristics should fit **TPP**

3. **PQ review process assessment**
   - Review through **stringent regulatory authorities (SRAs)** criteria

4. **WHO PQ Listing**
   - Inclusion of Finished Pharmaceutical Products (FPPs) in **WHO PQ Lists**
     - *Currently, three PQ lists: Medicines, API and Labs; with limited PQ for devices*

**Evidence requirements from innovators**

- **Based on applicant quality, safety & efficacy information**
  - Description of production & quality control activities
  - Data and information on safety, efficacy and quality
  - Results of random product testing & sampling

- **Based on site inspections demonstrating compliance**
  - Site inspections showing compliance with Good Clinical Practices (GCP), Good Laboratory Practices (GLP) & Good Manufacturing Practices (GMP), as relevant

- **Based on information from external parties**
  - Reliance on the info. from stringent national medicines regulatory authorities
  - Managing complaints/recalls from agencies/countries
Target Product Profiles (TPPs) | WHO TPPs are used to guide the research and development targets on public health priorities for funders and developers

A Target Product Profile (TPP) outlines the ideal characteristics of a product aimed at a particular disease.

- Prioritization through WHA or other WHO priority-setting process
- Descriptions of desirable future product design characteristics, features or functions
- TPPs used as planning tools for product development
- Product dossiers evaluated against TPPs

...Leading to product innovation

Development of an entire product or product type that could be prequalified and included in the EML
... The Innovation must:

- Answer an unmet public health need
- Demonstrate to be safe and efficacious
- Be recommended by WHO
- Be recommended in National guidelines
- Be produced as per international norms and standards
- Be approved by SRAs (incl. WHO Prequalification)
- Be accessible at an affordable and sustainable price (EML)

In summary, for successful scale-up...
Postpartum Haemorrhage Summit

Methods and results of PPH research prioritization survey
Caitlin R. Williams, IECS
7 March 2023
Research prioritization: a systematic guide for WHO staff when setting research priorities

Plan
- Define the objective—what change do you want to make and why?
- Who are the priorities for and in what context?
- Identify resources (time-finance-staff)
- Review what has been done before
- Design a method to match your context—ask RFH unit for help
- Review to ensure all sections are aligned

Implement
- Decide who needs to be involved—be representative and inclusive in line with context—think about local, economy, equity and gender
- Involved stakeholders to agree the priority criteria (e.g., public health benefit, feasibility, cost, timescale)

Evaluate
- Decide on an evaluation plan to measure impact
- From the plan, monitor the changes you wanted to see: awareness, uptake, translation, impact (e.g., +/- funding flows, improved public health)

Publish
- Develop a dissemination strategy to maximize awareness and uptake.
- Be transparent: publish a clear report that describes the methods used and the stakeholders involved

Source: WHO. (2020). A systematic approach for undertaking a research priority-setting exercise: guidance for WHO staff. WHO
Research questions | Step-by-step process for prioritization exercise in line with previous WHO exercises

**Generation and Collection of Research Questions**

- **Research groups** submit evidence-based research questions
- **Summit participants** can submit additional questions through a Google forms online survey, with the following proposed data to collect
  - Name & Institution
  - Research question

**Consolidation and Reconciliation of Research Questions**

- Submitted research questions are filtered for:
  - Duplicates
  - Out of scope (i.e., not pertaining to any of the domains)
  - Too broad to be considered research questions (e.g., "research to reduce to PPH mortality")

- Updated list of research questions is manually edited for clarity
  - Objective is to achieve a certain level of detail compatible with the concept of "research avenues"
  - E.g., very detailed and specific questions may be made more general

- 72 suggested research questions divided in 3 sections: 22 cross-cutting, 26 innovation, 24 implementation

**Scoring and Prioritization of Research Questions**

- 72 research questions are assessed against five criteria:
  - **Answerability**: The research question can be ethically answered
  - **Effectiveness**: The new knowledge is likely to result in an effective intervention or program
  - **Deliverability**: The intervention or program will be deliverable, acceptable and affordable
  - **Impact**: The intervention or program has the potential to substantially reduce PPH mortality, morbidity and long-term disabilities
  - **Equity**: The intervention or program will reach the most vulnerable groups

---

1. A research question that is not too broad, neither too specific, and could be answered through a set of individual research projects
Prioritization exercise | Developing initial long list of questions

- WHO guidelines (46)
- Other guidelines (45)
- WHO CHNRI (28)
- Device prioritization (16)
- Pipeline exercise (5)
- Cochrane reviews (53)
- Summit participants (224)

Research questions for scoring (72)
Research questions | Deep dive on the CHNRI methodology used for this prioritization exercise

- Respondents received **72 suggested research questions** across 3 sections: 22 cross-cutting, 26 innovation, 24 implementation
- Respondents assessed whether each question is appropriate ("Yes", "No" or "Don't know"/"No Opinion") in relation with each of the **five criteria**

For each criteria, scores are **summed up across respondents and divided** per total number of responses (thus excluding "Don't know")s
- The **average** across criteria (equal weights) then gives an overall **score** to the research question

- Each answer is being **attributed a score** based on Respondent assessment:
  - "Yes" = 1
  - "No" = 0
  - "No Opinion" = 0.5
  - "Don't know" → dropped from analysis

- All 72 questions are **ranked within their section** based on their overall score
- **Top 10 questions per section** are prioritized for discussion during the Summit

**Input**

<table>
<thead>
<tr>
<th>Suggested research question</th>
<th>Answerability</th>
<th>Effectiveness</th>
<th>Deliverability</th>
<th>Impact</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent 1</td>
<td>Yes</td>
<td>No</td>
<td>Don't know</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Respondent 2</td>
<td>No opinion</td>
<td>Yes</td>
<td>Don't know</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Respondent 3</td>
<td>Don't know</td>
<td>Yes</td>
<td>Yes</td>
<td>No opinion</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Analysis CHNRI method**

<table>
<thead>
<tr>
<th>Suggested research question</th>
<th>Answerability</th>
<th>Effectiveness</th>
<th>Deliverability</th>
<th>Impact</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent 1</td>
<td>1</td>
<td>0</td>
<td>-</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Respondent 2</td>
<td>0.5</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Respondent 3</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
</tr>
</tbody>
</table>

**Output**

<table>
<thead>
<tr>
<th>Suggested research question</th>
<th>Answerability</th>
<th>Effectiveness</th>
<th>Deliverability</th>
<th>Impact</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td>1.5</td>
<td>2</td>
<td>1</td>
<td>2.5</td>
<td>2</td>
</tr>
<tr>
<td># respondents</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>75%</td>
<td>67%</td>
<td>100%</td>
<td>83%</td>
<td>67%</td>
</tr>
</tbody>
</table>
Research questions | Process to define final top 15 research priorities across section

**Pre-Summit**
- Assess the 72 questions against 5 criteria & prioritize the top 10 questions per section based on their overall score

**Summit**
- Based on the explanatory briefs, prioritize during Summit breakout sessions the Top 5 priorities per track
- For each Top 5 questions, further detail out how to best approach them moving forward (i.e., commissioning briefs)

### Starting point
72 research questions for scoring

### Post initial survey
- Top 10 per section

### Target post summit
- Top 15 across section

- 72 Q* assessed through online survey
- 30 Q*, clarified with one explanatory brief each
- 15 Q*, detailed out with one commissioning brief each

**Response rate = 95.2%**
<table>
<thead>
<tr>
<th>Subcategory Ranking</th>
<th>Section</th>
<th>Suggested research question</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of a strategy of early detection and first response treatment using a bundle of recommended interventions for improving PPH-related outcomes?</td>
<td>96%</td>
</tr>
<tr>
<td>2</td>
<td>Cross-cutting</td>
<td>What is the effectiveness and safety of a diagnostic algorithm (e.g. shock index) and early detection strategies (e.g. Modified Early Obstetric Warning Score) in improving clinical detection and management of PPH?</td>
<td>93%</td>
</tr>
<tr>
<td>3</td>
<td>Cross-cutting</td>
<td>What is the effectiveness and safety of tranexamic acid (TXA) in the prevention of PPH in general obstetric population and in women at high risk of PPH (e.g. anaemic women)?</td>
<td>92%</td>
</tr>
<tr>
<td>4</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of checklists in improving PPH quality of care and PPH-related outcomes compared to current standard of care?</td>
<td>92%</td>
</tr>
<tr>
<td>5</td>
<td>Cross-cutting</td>
<td>What is the impact of simulated training with obstetric drills on the quality and outcomes of PPH care, and what are best modalities of simulation?</td>
<td>92%</td>
</tr>
<tr>
<td>6</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of a strategy designed for detection and treatment of refractory PPH on morbidity compared to usual care?</td>
<td>92%</td>
</tr>
<tr>
<td>7</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of Maternal and Perinatal Death Surveillance and Response programmes in the reduction of maternal deaths due to PPH?</td>
<td>88%</td>
</tr>
<tr>
<td>8</td>
<td>Cross-cutting</td>
<td>What is the effectiveness, safety, feasibility, and cost of strategies to improve access of women with PPH to blood and blood replacement products (e.g. fibrinogen concentrate, prothrombin complex concentrate), including in settings without transport capabilities?</td>
<td>88%</td>
</tr>
<tr>
<td>9</td>
<td>Cross-cutting</td>
<td>Does antenatal micro- and macronutrient supplementation reduce the risk of PPH in undernourished women?</td>
<td>85%</td>
</tr>
<tr>
<td>10</td>
<td>Cross-cutting</td>
<td>What is the role of uterotonic agents in the management of secondary PPH (i.e. any significant vaginal bleeding between 24 hours after placental delivery and during the following 6 weeks)?</td>
<td>84%</td>
</tr>
<tr>
<td>Subcategory Ranking</td>
<td>Section</td>
<td>Suggested research question</td>
<td>Overall Score</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>1</td>
<td>Implementation</td>
<td>What are the implementation barriers and facilitators affecting the adoption and use of evidence-based recommendations for PPH management?</td>
<td>99%</td>
</tr>
<tr>
<td>2</td>
<td>Implementation</td>
<td>What are the most effective advocacy strategies to improve the uptake and ensure sustainment of evidence-based practices for PPH management at the country level?</td>
<td>96%</td>
</tr>
<tr>
<td>3</td>
<td>Implementation</td>
<td>What are the most effective implementation strategies to improve uptake and sustainment of recommended evidence-based interventions for PPH management, including in humanitarian settings?</td>
<td>96%</td>
</tr>
<tr>
<td>4</td>
<td>Implementation</td>
<td>What are the optimal strategies to introduce and scale up the use of newer PPH medicines (e.g. heat-stable carbetocin, tranexamic acid) at various levels of care and settings?</td>
<td>96%</td>
</tr>
<tr>
<td>5</td>
<td>Implementation</td>
<td>What are the critical components/models for successful introduction and implementation of new/newly recommended medications for PPH management in low- and middle-income countries?</td>
<td>95%</td>
</tr>
<tr>
<td>6</td>
<td>Implementation</td>
<td>What is the impact of training programmes for community health workers and paramedics on temporising measures (e.g. uterine massage, external aortic compression, uterine tamponade, Non-pneumatic Anti-Shock Garment) on PPH outcomes?</td>
<td>95%</td>
</tr>
<tr>
<td>7</td>
<td>Implementation</td>
<td>What is the effectiveness and cost of pre-service and in-service training programmes for frontline healthcare workers (paramedics, general practice doctors, community health workers, midwives, nurses) to manage and refer women with PPH?</td>
<td>94%</td>
</tr>
<tr>
<td>8</td>
<td>Implementation</td>
<td>What are the most effective strategies to improve the uptake and sustainment of evidence-based practices for PPH management by women's groups, civil society organizations, and community health care providers?</td>
<td>92%</td>
</tr>
<tr>
<td>9</td>
<td>Implementation</td>
<td>What are the most effective and safe strategies for introducing tamponade devices into health service and what are the health, financial, and health system impacts?</td>
<td>92%</td>
</tr>
<tr>
<td>Subcategory Ranking</td>
<td>Section</td>
<td>Suggested research question</td>
<td>Overall Score</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>1</td>
<td>Innovation</td>
<td>What is the effectiveness and safety of heat-stable carbetocin for PPH treatment in women who received heat-stable carbetocin for PPH prevention?</td>
<td>95%</td>
</tr>
<tr>
<td>2</td>
<td>Innovation</td>
<td>What is the comparative effectiveness and safety of alternative routes of tranexamic acid (TXA) in the treatment of PPH?</td>
<td>93%</td>
</tr>
<tr>
<td>3</td>
<td>Innovation</td>
<td>What is the effectiveness, safety, feasibility, and acceptability of alternative administration routes of oxytocin (e.g. inhaled oxytocin) for PPH prevention and treatment?</td>
<td>90%</td>
</tr>
<tr>
<td>4</td>
<td>Innovation</td>
<td>What is the effectiveness and safety of uterine tamponade device as a pre-referral treatment of refractory PPH in basic emergency obstetric and newborn care (BEmONC) setting?</td>
<td>86%</td>
</tr>
<tr>
<td>5</td>
<td>Innovation</td>
<td>Can clinical criteria for haemodynamic instability facilitate earlier PPH diagnosis and improved PPH outcomes compared to blood loss measurement alone?</td>
<td>86%</td>
</tr>
<tr>
<td>6</td>
<td>Innovation</td>
<td>What is the comparative effectiveness and safety of tamponade devices in women with refractory PPH during caesarean section in adequately resourced comprehensive emergency obstetric and newborn care (CEmONC) setting?</td>
<td>85%</td>
</tr>
<tr>
<td>7</td>
<td>Innovation</td>
<td>What strategies are most effective for engaging the private sector in the development of new PPH medicines, devices, and diagnostics in low- and middle-income countries?</td>
<td>84%</td>
</tr>
<tr>
<td>8</td>
<td>Innovation</td>
<td>What is the comparative effectiveness of uterine balloon tamponade devices compared to other tamponade interventions (such as suction devices) in the reduction of PPH-related maternal morbidity and mortality?</td>
<td>83%</td>
</tr>
<tr>
<td>9</td>
<td>Innovation</td>
<td>What is the effectiveness, safety, and cost of suction tamponade devices (e.g. modified Jada device, Levin gastric tube) compared to standard of care in the treatment of refractory PPH in low- and middle-income countries?</td>
<td>83%</td>
</tr>
<tr>
<td>10</td>
<td>Innovation</td>
<td>What is the impact of universal haemoglobin assay and intravenous iron treatment of anaemic women on PPH-related outcomes?</td>
<td>82%</td>
</tr>
</tbody>
</table>
**Four steps to identify Top 5 research priorities per track**

<table>
<thead>
<tr>
<th>Description</th>
<th>Timing [1h45]</th>
<th>Method Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Present and review technical briefs</strong> – clarify each top 10 priority research questions with detailed one-pager to be provided</td>
<td><strong>30 min</strong> Full breakout</td>
<td></td>
</tr>
<tr>
<td><strong>2. Hold initial ranking vote</strong> – rank from 1 to 5 the priority questions based on additional information provided by briefs and along the same criteria as survey</td>
<td><strong>5 min</strong> Full breakout</td>
<td></td>
</tr>
<tr>
<td><strong>3. Discuss outcome of vote and foster consensus</strong> – discuss the top 5 priority questions, e.g., additional insights, and drive consensus on final list</td>
<td><strong>30 min</strong> Full breakout</td>
<td></td>
</tr>
<tr>
<td><strong>4. Discuss ongoing research / ideal research</strong> – 5 sub-groups focusing each on one of the top 5 priorities (template below)</td>
<td><strong>40 min</strong> Split per table</td>
<td></td>
</tr>
</tbody>
</table>
1. Present technical briefs - innovation
<table>
<thead>
<tr>
<th>Subcategory Ranking</th>
<th>Section</th>
<th>Suggested research question</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Innovation</td>
<td>What is the effectiveness and safety of heat-stable carbetocin for PPH treatment in women who received heat-stable carbetocin for PPH prevention?</td>
<td>95%</td>
</tr>
<tr>
<td>2</td>
<td>Innovation</td>
<td>What is the comparative effectiveness and safety of alternative routes of tranexamic acid (TXA) in the treatment of PPH?</td>
<td>93%</td>
</tr>
<tr>
<td>3</td>
<td>Innovation</td>
<td>What is the effectiveness, safety, feasibility, and acceptability of alternative administration routes of oxytocin (e.g. inhaled oxytocin) for PPH prevention and treatment?</td>
<td>90%</td>
</tr>
<tr>
<td>4</td>
<td>Innovation</td>
<td>What is the effectiveness and safety of uterine tamponade device as a pre-referral treatment of refractory PPH in basic emergency obstetric and newborn care (BEmONC) setting?</td>
<td>86%</td>
</tr>
<tr>
<td>5</td>
<td>Innovation</td>
<td>Can clinical criteria for haemodynamic instability facilitate earlier PPH diagnosis and improved PPH outcomes compared to blood loss measurement alone?</td>
<td>86%</td>
</tr>
<tr>
<td>6</td>
<td>Innovation</td>
<td>What is the comparative effectiveness and safety of tamponade devices in women with refractory PPH during caesarean section in adequately resourced comprehensive emergency obstetric and newborn care (CEmONC) setting?</td>
<td>85%</td>
</tr>
<tr>
<td>7</td>
<td>Innovation</td>
<td>What strategies are most effective for engaging the private sector in the development of new PPH medicines, devices, and diagnostics in low- and middle-income countries?</td>
<td>84%</td>
</tr>
<tr>
<td>8</td>
<td>Innovation</td>
<td>What is the comparative effectiveness of uterine balloon tamponade devices compared to other tamponade interventions (such as suction devices) in the reduction of PPH-related maternal morbidity and mortality?</td>
<td>83%</td>
</tr>
<tr>
<td>9</td>
<td>Innovation</td>
<td>What is the effectiveness, safety, and cost of suction tamponade devices (e.g. modified Jada device, Levin gastric tube) compared to standard of care in the treatment of refractory PPH in low- and middle-income countries?</td>
<td>83%</td>
</tr>
<tr>
<td>10</td>
<td>Innovation</td>
<td>What is the impact of universal haemoglobin assay and intravenous iron treatment of anaemic women on PPH-related outcomes?</td>
<td>82%</td>
</tr>
</tbody>
</table>
What is the effectiveness and safety of heat-stable carbetocin for PPH treatment in women who received heat-stable carbetocin for PPH prevention?

- **Summit participants** (Q211: Carbetocin in the role of a therapeutic agent in the management of PPH. Once we are positioning carbetocin as an effective agent and noninferior to oxytocin in prevention of PPH. Its effect last for 60-120 minutes. It means that it will be administered to all delivering women. In case, a woman bleeds, should we repeat carbetocin? If yes, what should be the time interval? Treatment of PPH by carbetocin is only for those women who have not received carbetocin for prophylaxis?)

**Background to this question**

- WHO recommends oxytocin for PPH prevention and treatment, but oxytocin requires refrigeration and has limited shelf-life
- Heat-stable carbetocin was found to be as effective to oxytocin for PPH prevention
- Heat-stable carbetocin was added to the WHO Essential Medicines List for PPH prevention in 2019
- However, the effectiveness and safety of heat-stable carbetocin for PPH treatment in women who have already received it for PPH prevention is unknown and there is currently no guidance available on the use of heat-stable carbetocin for PPH treatment
- The objective of this research would be to evaluate the effectiveness and safety of heat-stable carbetocin for PPH treatment

**Score from initial survey**

- 6th overall,
- 1st Innovation,
- 95% score
What is the comparative effectiveness and safety of alternative routes of tranexamic acid (TXA) in the treatment of PPH?

- WHO recommendations (Q42: What are the effects of TXA by other routes of administration (for example, oral, intramuscular, topical, buccal) when used for PPH treatment?) - WHO recommendations on TXA for treatment of PPH; Q45: What are the longer-term effects (on women and breastfeeding newborns) of TXA when used for PPH treatment? - WHO recommendations on TXA for treatment of PPH)

- WHO recommends tranexamic acid (TXA) for PPH treatment as a slow intravenous (IV) injection over 10 minutes
- However, alternative routes of administration may be easier to administer, especially in lower levels of care
- Intramuscular (IM) injection, or oral administration, have been proposed
- In general bleeding trauma patients, IM TXA was found to be well tolerated and rapidly absorbed
- Future research could compare the effectiveness and safety of different routes of TXA administration for PPH treatment

Source: WHO PPH Summit Research
Research question

What is the effectiveness, safety, feasibility, and acceptability of alternative administration routes of oxytocin (e.g., inhaled oxytocin) for PPH prevention and treatment?

Score from initial survey

- 23rd overall,
- 3rd Innovation,
- 90% score

Source & other merged questions

- Pipeline analysis (Q1: Alternative administration routes of oxytocin that can be used for PPH)

Background to this question

WHO recommends the use of oxytocin for PPH prevention and treatment. The current route of administration is via intravenous (IV) or intramuscular (IM) injection.
- Alternative routes of administration have been proposed (e.g., inhaled oxytocin) to improve access, especially in remote and resource-constrained settings. Yet little is known about these alternatives.
- Future research could aim to evaluate the effectiveness, safety, feasibility, and acceptability of different routes of oxytocin administration for PPH prevention and treatment. Qualitative research could be used to explore the acceptability of alternative administration routes of oxytocin among women and healthcare providers.
Research question

What is the effectiveness and safety of uterine tamponade device as a pre-referral treatment of refractory PPH in basic emergency obstetric and newborn care (BEMONC) setting?

Score from initial survey

- 30th overall,
- 4th Innovation,
- 86% score

Source & other merged questions

- WHO recommendations (Q28: What is the effectiveness and safety of uterine balloon tamponade when using it as a temporizing measure for treatment of atonic refractory PPH in preparation for referral to a higher level of care, in the reduction of PPH-related severe maternal morbidity and mortality? - WHO recommendations on uterine balloon tamponade for the treatment of postpartum hemorrhage)

Background to this question

- Refractory PPH requires immediate and effective treatment and WHO recommends uterine tamponade devices as a second-line treatment for refractory PPH in settings where advanced care is available.
- There is limited evidence on the use of uterine tamponade devices as pre-referral treatment and future research should contribute to the evidence base on the use of uterine tamponade devices as a pre-referral treatment for refractory PPH in BEMONC settings.
- Qualitative research could be used to explore the acceptability and feasibility of uterine tamponade devices as a pre-referral treatment among women and healthcare providers in BEMONC settings.

Source: WHO PPH Summit Research
Can clinical criteria for hemodynamic instability facilitate earlier PPH diagnosis and improved PPH outcomes compared to blood loss measurement alone?

- Early recognition and intervention are essential for improving outcomes from PPH.
- WHO recommends a blood loss threshold of 500ml or more to diagnose PPH and routine uterine tone assessment to diagnose uterine atony.
- The proposed intervention is to include clinical signs of hemodynamic instability to facilitate earlier diagnosis of PPH.
- Future research could aim to determine whether the use of clinical criteria for hemodynamic instability facilitates earlier PPH diagnosis compared to blood loss measurement alone, and thus improves outcomes.

Source: WHO PPH Summit Research
What is the comparative effectiveness and safety of tamponade devices in women with refractory PPH during caesarean section in adequately resourced comprehensive emergency obstetric and newborn care (CEMONC) setting?

- Tamponade devices are used in the management of refractory PPH.
- There is limited evidence comparing the effectiveness and safety of these devices in women undergoing cesarean section.
- WHO recommends uterine tamponade devices to be used as second-line treatment for refractory PPH for women with vaginal birth in settings where advanced care is available, but there is no consensus on which device is the most effective and safe.
- The proposed research would compare the effectiveness and safety of different tamponade devices for the management of refractory PPH during cesarean section in CEMONC settings. Future research should also assess the feasibility and acceptability of different tamponade devices.

Source: WHO PPH Summit Research
What strategies are most effective for engaging the private sector in the development of new PPH medicines, devices, and diagnostics in low- and middle-income countries?

- The private sector has a crucial role to play in the development of new PPH medicines, devices, and diagnostics.
- However, the private sector may face barriers to engagement in low- and middle-income countries, including limited resources, lack of incentives, and regulatory challenges.
- WHO recommends that research and development of PPH medicines, devices, and diagnostics be a priority.
- WHO also recommends that engaging the private sector can accelerate innovation and improve access to quality healthcare.
- The proposed research would identify and evaluate strategies to improve private sector engagement along with research institutions, regulatory agencies, and civil society groups.

Source: WHO PPH Summit Research
What is the comparative effectiveness of uterine balloon tamponade devices compared to other tamponade interventions (such as suction devices) in the reduction of PPH-related maternal morbidity and mortality?

• WHO recommendations (Q30: What is the comparative effectiveness of uterine balloon tamponades compared to other tamponade interventions (such as suction devices) in the reduction of PPH-related maternal morbidity and mortality? - WHO recommendation on uterine balloon tamponade for the treatment of postpartum hemorrhage)

Background to this question

• WHO recommends that uterine balloon tamponade be considered as a second-line treatment for refractory PPH after vaginal birth when initial measures, such as uterotonics, have failed and in settings where advanced care is available
• It is unclear whether other uterine tamponade devices (such as suction devices) are a safe and effective alternative
• The proposed research would compare the effectiveness of uterine balloon tamponade to other uterine tamponade devices in reducing PPH-related maternal morbidity and mortality

Source: WHO PPH Summit Research
What is the effectiveness, safety, and cost of suction tamponade devices (e.g., modified Jada device, Levin gastric tube) compared to standard of care in the treatment of refractory PPH in low- and middle-income countries?

• There is a lack of evidence on the effectiveness, safety, and cost of using suction tamponade devices for refractory PPH in LMICs
• WHO currently has no specific guidance on the use of suction tamponade devices for refractory PPH
• The current practice for managing refractory PPH in LMICs is limited due to the lack of availability and access to uterine balloon tamponade and other interventions
• Suction tamponade devices may offer a low-cost, easily accessible alternative for the management of refractory PPH
• The proposed research would explore the effectiveness, safety, and cost of uterine suction tamponade devices compared to current standard of care

Source: WHO PPH Summit Research
What is the impact of universal hemoglobin assay and intravenous iron treatment of anemic women on PPH-related outcomes?

Source & other merged questions

- Summit participants (Q2: What is the role of universal hemoglobin assay and treatment with IV Iron therapy?)

Background to this question

- WHO recommends identifying and treating anemia in pregnant women
- Oral iron supplements are the most common treatment, as they are generally effective and have few side effects
- For severe anemia, oral supplements may not be effective and intravenous (IV) iron therapy may be more beneficial
- IV iron therapy allows for more rapid absorption and a quicker increase in hemoglobin levels
- Future research could compare the standard of care for PPH prevention with universal hemoglobin assay and intravenous iron treatment of anemic women for improving PPH-related morbidity and mortality, especially in low-income settings

Score from initial survey

- 44th overall,
- 10th Innovation
- 82% score

Source: WHO PPH Summit Research
1. Present technical briefs - Implementation
<table>
<thead>
<tr>
<th>Subcategory Ranking</th>
<th>Section</th>
<th>Suggested research question</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Implementation</td>
<td>What are the implementation barriers and facilitators affecting the adoption and use of evidence-based recommendations for PPH management?</td>
<td>99%</td>
</tr>
<tr>
<td>2</td>
<td>Implementation</td>
<td>What are the most effective advocacy strategies to improve the uptake and ensure sustainment of evidence-based practices for PPH management at the country level?</td>
<td>96%</td>
</tr>
<tr>
<td>3</td>
<td>Implementation</td>
<td>What are the most effective implementation strategies to improve uptake and sustainment of recommended evidence-based interventions for PPH management, including in humanitarian settings?</td>
<td>96%</td>
</tr>
<tr>
<td>4</td>
<td>Implementation</td>
<td>What are the optimal strategies to introduce and scale up the use of newer PPH medicines (e.g. heat-stable carbetocin, tranexamic acid) at various levels of care and settings?</td>
<td>96%</td>
</tr>
<tr>
<td>5</td>
<td>Implementation</td>
<td>What are the optimal strategies to ensure access to quality-assured PPH medicines (including Universal Health Coverage/Essential Packages for Health Services and Health Benefit Package) in low- and middle-income countries?</td>
<td>95%</td>
</tr>
<tr>
<td>6</td>
<td>Implementation</td>
<td>What are the critical components/models for successful introduction and implementation of new/newly recommended medications for PPH management in low- and middle-income countries?</td>
<td>95%</td>
</tr>
<tr>
<td>7</td>
<td>Implementation</td>
<td>What is the impact of training programmes for community health workers and paramedics on temporising measures (e.g. uterine massage, external aortic compression, uterine tamponade, Non-pneumatic Anti-Shock Garment) on PPH outcomes?</td>
<td>95%</td>
</tr>
<tr>
<td>8</td>
<td>Implementation</td>
<td>What is the effectiveness and cost of pre-service and in-service training programmes for frontline healthcare workers (paramedics, general practice doctors, community health workers, midwives, nurses) to manage and refer women with PPH?</td>
<td>94%</td>
</tr>
<tr>
<td>9</td>
<td>Implementation</td>
<td>What are the most effective strategies to improve the uptake and sustainment of evidence-based practices for PPH management by women’s groups, civil society organizations, and community health care providers?</td>
<td>92%</td>
</tr>
<tr>
<td>10</td>
<td>Implementation</td>
<td>What are the most effective and safe strategies for introducing tamponade devices into health service and what are the health, financial, and health system impacts?</td>
<td>92%</td>
</tr>
</tbody>
</table>
What are the implementation barriers and facilitators affecting the adoption and use of evidence-based recommendations for PPH management?

• WHO has issued guidelines for the prevention and management of postpartum hemorrhage, including recommendations for the use of uterotonics, tranexamic acid, and mechanical and surgical interventions.
• However, adoption has lagged, hampering use of lifesaving interventions in clinical practice.
• There is currently limited research on the best strategies to enable country-level adoption and subsequent use of evidence-based recommendations for PPH management, especially in low- and middle-income countries.
• This research will build on existing studies to provide a more comprehensive understanding of the implementation barriers and facilitators affecting the adoption and use of evidence-based recommendations for PPH management.

Source: WHO PPH Summit Research
What are the most effective advocacy strategies to improve the uptake and ensure sustainment of evidence-based practices for PPH management at the country level?

Advocacy efforts can influence policy and practice change, but it is not known which advocacy strategies are most effective, and under which circumstances or in which contexts.

There is a need to determine which advocacy strategies are likely to be most influential for promoting the uptake and sustainment of evidence-based practices at the country level.

The proposed research would identify different advocacy strategies and compare their effectiveness for translating evidence-based recommendations into routine clinical practice.
What are the most effective implementation strategies to improve uptake and sustainment of recommended evidence-based interventions for PPH management, including in humanitarian settings?

- Summit participants (Q3: What are the best approaches to deliver PPH prevention interventions for women living in humanitarian settings?)

Background to the question
- WHO has guidelines on the prevention and management of PPH, including the use of uterotonics, early recognition and management of PPH, and access to blood transfusion and surgery as needed
- Even with successful adoption at a country level, women often do not receive the recommended interventions, especially in humanitarian settings
- This research would aim to identify the most effective implementation strategies, barriers and facilitators to implementation, assessing the feasibility and acceptability of different implementation strategies, and evaluating the impact of these strategies on the uptake and sustainment of recommended interventions, including in humanitarian settings

Source: WHO PPH Summit Research
What are the optimal strategies to introduce and scale up the use of newer PPH medicines (e.g., heat-stable carbetocin, tranexamic acid) at various levels of care and settings?

Score from initial survey:
- #5 overall
- #4 implementation
- 96% score

Source & other merged questions:
- Summit participants (Q27: What are the optimal strategies to implement and scale up the use of 1) carbetocin and 2) tranexamic acid in various levels of care and settings? Particular attention to primary vs secondary vs tertiary care, obstetrician-led vs midwifery-led care settings)

Background to the question:
- WHO recommends the use of heat-stable carbetocin and tranexamic acid for the prevention and treatment of PPH
- However, there is limited research and guidance on how to introduce and scale up the use of these medicines in different healthcare settings, including primary health centers, district hospitals, and tertiary care centers
- This research would aim to identify the optimal strategies for introducing and scaling up the use of heat-stable carbetocin and tranexamic acid for the prevention and treatment of PPH; explore the barriers and facilitators to the adoption of these medicines in different settings and levels of care; and provide guidance for policymakers and healthcare providers on the implementation of these strategies
What are the optimal strategies to ensure access to quality-assured PPH medicines (including Universal Health Coverage/Essential Packages for Health Services and Health Benefit Package) in low- and middle-income countries?

- WHO emphasizes the importance of Universal Health Coverage (UHC)/Essential Packages for Health Services (EPHS) and Health Benefit Package (HBP) approaches in ensuring access to essential medicines, including quality-assured PPH medicines.
- Ensuring access to quality-assured PPH medicines is often difficult in LMICs due to inadequate supply chain management and lack of investment.
- This research would aim to identify the barriers to access quality-assured PPH medicines in LMICs; the optimal strategies to ensure access to quality-assured PPH medicines in LMICs; and provide guidance to policymakers and healthcare providers on the implementation of these strategies.

Source: WHO PPH Summit Research
What are the critical components/models for successful introduction and implementation of new/newly recommended medications for PPH management in low- and middle-income countries?

- #8 overall
- #6 implementation
- 95% score

The introduction and implementation of new and newly recommended medications for postpartum hemorrhage (PPH) management in low- and middle-income countries (LMICs) is often challenging due to various barriers, including limited resources, lack of trained healthcare providers, and inadequate supply chain management.

WHO emphasizes the importance of collaboration between different stakeholders, including policymakers, healthcare managers and providers, to ensure the successful implementation of new medications.

This research would aim to identify the critical components and models for successful introduction and implementation of new PPH medications in LMICs and provide guidance to policymakers and healthcare providers on the implementation of these components and models.
What is the impact of training programmes for community health workers and paramedics on temporising measures (e.g., uterine massage, external aortic compression, uterine tamponade, Non-pneumatic Anti-Shock Garment) on PPH outcomes?

- #9 overall
- #7 implementation
- 95% score

Timely management of PPH is critical to reducing the associated morbidity and mortality and community health workers (CHWs) and paramedics can play an important role, especially in resource-limited settings.

WHO provides guidelines for the prevention and management of PPH, including the use of temporizing measures.

The current training programs on CHWs and paramedics in the use of temporizing measures for PPH management is unclear.

This research would aim to assess the impact of training programs on the use of temporizing measures for PPH management by CHWs and paramedics and evaluate the effect of the use of temporizing measures on PPH outcomes in the community.

Source: WHO PPH Summit Research
What is the effectiveness and cost of pre-service and in-service training programmes for frontline healthcare workers (paramedics, general practice doctors, community health workers, midwives, nurses) to manage and refer women with PPH?

Frontline healthcare workers (paramedics, general practice doctors, community health workers, midwives, nurses) play a crucial role in the timely and effective management of PPH. The current practice of PPH management varies widely across different settings, and the effectiveness of training programs for frontline healthcare workers to manage and refer women with PPH is not well established. The proposed intervention is the implementation of pre-service and in-service training programs for frontline healthcare workers to manage and refer women with PPH. The study will evaluate the effectiveness, cost-effectiveness, and key factors that influence the success of these programs.
What are the most effective strategies to improve the uptake and sustainment of evidence-based practices for PPH management by women's groups, civil society organizations, and community health care providers?

- Women's groups, civil society organizations, and community health care providers have the potential to play a crucial role in improving the uptake and sustainment of evidence-based practices.
- Proposed interventions may include the development and implementation of targeted training and capacity-building programs, the use of community-based approaches to promote awareness and demand for evidence-based practices, and the development of supportive policy frameworks.
- The aim of this research would be to identify the most effective strategies to improve the uptake and sustainment of evidence-based practices for PPH management by women's groups, civil society organizations, and community health care providers in low- and middle-income countries.

Source: WHO PPH Summit Research
What are the most effective and safe strategies for introducing tamponade devices into health service and what are the health, financial, and health system impacts?

WHO recommends the use of tamponade devices for the management of refractory PPH after vaginal birth, but only a small number of health systems have incorporated these devices into their guidelines.

The use of tamponade devices for managing PPH is increasing, and it is essential to understand the most effective and safe strategies for introducing these devices into health services.

Future research could identify the best strategies for introducing tamponade devices into health services, taking into account factors such as provider training, cost, and availability.

Source: WHO PPH Summit Research
1. Present technical briefs: Cross-Cutting
<table>
<thead>
<tr>
<th>Rank</th>
<th>Subcategory</th>
<th>Section</th>
<th>Suggested research question</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of a strategy of early detection and first response treatment using a bundle of recommended interventions for improving PPH-related outcomes?</td>
<td>96%</td>
</tr>
<tr>
<td>2</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the effectiveness and safety of a diagnostic algorithm (e.g. shock index) and early detection strategies (e.g. Modified Early Obstetric Warning Score) in improving clinical detection and management of PPH?</td>
<td>93%</td>
</tr>
<tr>
<td>3</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the effectiveness and safety of tranexamic acid (TXA) in the prevention of PPH in general obstetric population and in women at high risk of PPH (e.g. anaemic women)?</td>
<td>92%</td>
</tr>
<tr>
<td>4</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of checklists in improving PPH quality of care and PPH-related outcomes compared to current standard of care?</td>
<td>92%</td>
</tr>
<tr>
<td>5</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the impact of simulated training with obstetric drills on the quality and outcomes of PPH care, and what are best modalities of simulation?</td>
<td>92%</td>
</tr>
<tr>
<td>6</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of a strategy designed for detection and treatment of refractory PPH on morbidity compared to usual care?</td>
<td>92%</td>
</tr>
<tr>
<td>7</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of Maternal and Perinatal Death Surveillance and Response programmes in the reduction of maternal deaths due to PPH?</td>
<td>88%</td>
</tr>
<tr>
<td>8</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the effectiveness, safety, feasibility, and cost of strategies to improve access of women with PPH to blood and blood replacement products (e.g. fibrinogen concentrate, prothrombin complex concentrate), including in settings without transport capabilities?</td>
<td>88%</td>
</tr>
<tr>
<td>9</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>Does antenatal micro- and macronutrient supplementation reduce the risk of PPH in undernourished women?</td>
<td>85%</td>
</tr>
<tr>
<td>10</td>
<td>Cross-cutting</td>
<td>Cross-cutting</td>
<td>What is the role of uterotonic agents in the management of secondary PPH (i.e. any significant vaginal bleeding between 24 hours after placental delivery and during the following 6 weeks)?</td>
<td>84%</td>
</tr>
</tbody>
</table>
Research question
What is the effectiveness of a strategy of early detection and first response treatment using a bundle of recommended interventions for improving PPH-related outcomes?

Score from initial survey
- 3rd overall score
- 1st cross-cutting,
- 96% score

Source & other merged questions
- Summit participants (Q35: What is the effectiveness of the initial bundle for PPH treatment compared to non-standardized treatment in Vaginal and C-section deliveries?)

Background to this question
- Early detection and initiation of first-response treatment can dramatically improve PPH-related outcomes
- A WHO CHNRI prioritization exercise called for research into innovative approaches to improve monitoring of women postpartum for the early diagnosis and treatment of PPH – the question was ranked #2 discovery question for the whole of maternal health
- Bundling interventions has been proposed as an implementation approach to improve early detection and expedite first-response treatment
- The proposed research would assess the effectiveness of this implementation strategy compared to standard of care
- Additional evidence is needed to assess the feasibility, acceptability, and cost of scaling the bundle approach
What is the effectiveness and safety of a diagnostic algorithm (e.g. shock index) and early detection strategies (e.g. Modified Early Obstetric Warning Score) in improving clinical detection and management of PPH?

• Early detection and prompt management of PPH are essential components of quality maternal health care to prevent adverse outcomes
• There is limited evidence on the use of diagnostic algorithms and early detection strategies for PPH
• The proposed research would assess the use of diagnostic algorithms including tools such as the Obstetric Shock Index, and strategies, such as the Modified Early Obstetric Warning Score (MEOWS), to improve early detection of PPH

Source: WHO PPH Summit Research
What is the effectiveness and safety of tranexamic acid (TXA) in the prevention of PPH in general obstetric population and in women at high risk of PPH (e.g. anemic women)?

Tranexamic acid (TXA) has been shown to reduce bleeding in a variety of surgical and traumatic settings and is now recommended by WHO for PPH treatment and included in the Essential Medicines List.

In non-obstetric settings, TXA has been shown to help prevent excessive bleeding.

It’s safety and effectiveness for PPH prevention is unknown.

The proposed research would assess the use of TXA before or immediately after delivery to prevent PPH, particularly in high-risk populations (e.g. anemic women).
What is the effectiveness of checklists in improving PPH quality of care and PPH-related outcomes compared to current standard of care?

Checklists are a potential intervention that can improve the quality of care for PPH, but the evidence is lacking on effectiveness of checklists in improving PPH quality of care and PPH-related outcomes.

To bridge the gap between evidence and practice, WHO created the Safe Childbirth Checklist, a practical tool to assist birth attendants in planning for and performing a more complete bundle of 28 essential birth practices including recommended practices related to PPH.

Several professional societies have published guidelines that recommend the use of checklists for PPH management.

The proposed intervention is the use of a checklist to guide PPH management, which may include items such as timely administration of uterotonics, quantification of blood loss, and escalation of care as needed.
What is the impact of simulated training with obstetric drills on the quality and outcomes of PPH care, and what are best modalities of simulation?

Simulation-based training is one strategy for improving the clinical skills and teamwork of healthcare professionals. WHO recommends the use of simulation-based training to improve quality and patient safety. The proposed research would assess the utility of simulation-based training on PPH preparedness and response. The simulation training should reflect real-world clinical scenarios and include both technical and non-technical skills training (e.g., teamwork, communication, leadership). Specifically, can assess effectiveness of different simulation modalities; explore factors that influence skill acquisition and transfer; investigate impact on clinical outcomes and patient experience; identify best practices for the design, delivery, and evaluation of simulation-based training for PPH care.
What is the effectiveness of a strategy designed for detection and treatment of refractory PPH on morbidity compared to usual care?

Refractory PPH is particularly challenging to manage and can lead to severe morbidity, including the need for transfusion, hysterectomy, and other surgical interventions.

While several interventions exist to manage refractory PPH, there is a lack of high-quality evidence comparing different strategies for their effectiveness.

The main objective of future research should be to develop and assess the effectiveness of a standardized approach for detection and treatment of refractory PPH (e.g., bundle, algorithm).

Source: WHO PPH Summit Research
What is the effectiveness of Maternal and Perinatal Death Surveillance and Response programmes in the reduction of maternal deaths due to PPH?

- Maternal and Perinatal Death Surveillance and Response (MPDSR) programs have been implemented in some countries to track maternal and perinatal deaths, identify cause of death, and develop and implement strategies to prevent future deaths.
- However, there is a need to determine the impact of these programs to encourage universal adoption.
- WHO recommends the establishment of MPDSR programs and published guidelines on how to establish and strengthen them.
- The objectives of this research would be to identify the key components of MPDSR programs that contribute to their effectiveness; determine the impact of MPDSR programs on maternal mortality due to PPH; and identify the factors that facilitate or hinder the implementation of MPDSR programs in different settings, including the availability of resources, the involvement of key stakeholders, and the political and social context.

Source: WHO PPH Summit Research
What is the effectiveness, safety, feasibility, and cost of strategies to improve access of women with PPH to blood and blood replacement products (e.g., fibrinogen concentrate, prothrombin complex concentrate), including in settings without transport capabilities?

- Summit participants (Q102: (road accidents, work accidents) represent the most part of the blood demand: do synergies exist to maximize the use of blood among these two sectors?; Q195: Can a well-planned human blood bank system of volunteers help reduce the deaths due to PPH where blood transfusion can save a mother’s life?) RCOG 2016 (Q4: Studies are required to determine the role of fibrinogen concentrate in the management of PPH; Q5: The role of prothrombin complex concentrate in the management of PPH requires evaluation)

- Safe blood and blood replacement products are critical tools for managing PPH, particularly when severe, but access is challenging in many settings, and there is limited guidance on how to improve access
- Future research should aim to evaluate the effectiveness, safety, feasibility, and cost of strategies to improve access to blood and blood replacement products for women with PPH, including in settings without transport capabilities
- There are ongoing initiatives to improve access to blood and blood products in low-resource settings, including the WHO's Safe Blood for Africa program and the Blood Transfusion Safety project of the African Society for Blood Transfusion
Does antenatal micro- and macronutrient supplementation reduce the risk of PPH in undernourished women?

- Anemia is an important underlying contributor to PPH and adverse outcomes from PPH and WHO recommends provision of iron and folic acid supplementation to all pregnant women to prevent maternal anemia.
- However, there is currently no specific guidance on the use of other macro- and micronutrient supplementation to prevent PPH in undernourished women.
- The proposed research would evaluate the impact of providing additional micro- and macronutrient supplementation to undernourished pregnant women to reduce the risk of PPH.

Source: WHO PPH Summit Research
What is the role of uterotonic agents in the management of secondary PPH (i.e. any significant vaginal bleeding between 24 hours after placental delivery and during the following 6 weeks)?

• WHO recommends uterotonic agents, such as oxytocin, as the first-line treatment for primary PPH (first 24 hours after birth).
• However, there is limited guidance on the use of these agents for the management of secondary PPH (beyond the first 24 hours after birth).
• The current practice for the management of secondary PPH is varied, and there is a lack of consensus on the use of uterotonic agents.
• The aim of this research would be to determine the effectiveness and safety of uterotonic agents including oxytocin, misoprostol, and others in the management of secondary PPH.
Postpartum Haemorrhage Summit

Research prioritization – Wrap-up

7 March 2023
Research questions | Process to define final top 15 research priorities across section

**Pre-Summit**
- Assess the 72 questions against 5 criteria & prioritize the top 10 questions per section based on their overall score

---

**72 Q*, assessed through online survey**

<table>
<thead>
<tr>
<th>22 questions</th>
<th>24 questions</th>
<th>26 questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

**Start point**
72 research questions for scoring

**Summit**
- Based on the explanatory briefs, prioritize during Summit breakout sessions the Top 5 priorities per track
- For each Top 5 questions, further detail out how to best approach them moving forward (i.e., commissioning briefs)

---

**30 Q*, clarified with one explanatory brief each**

**Post initial survey**
Top 10 per section

**Target post summit**
Top 15 across section

<table>
<thead>
<tr>
<th>Cross-cutting</th>
<th>Implementation</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

Response rate = 95.2%
<table>
<thead>
<tr>
<th>Final Ranking</th>
<th>Section</th>
<th>Suggested research question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of a strategy of early detection and first response treatment using a bundle of recommended interventions for improving PPH-related outcomes?</td>
</tr>
<tr>
<td>2</td>
<td>Cross-cutting</td>
<td>What is the effectiveness and safety of a diagnostic algorithm (e.g. shock index) and early detection strategies (e.g. Modified Early Obstetric Warning Score) in improving clinical detection and management of PPH?</td>
</tr>
<tr>
<td>3</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of checklists in improving PPH quality of care and PPH-related outcomes compared to current standard of care?</td>
</tr>
<tr>
<td>4</td>
<td>Cross-cutting</td>
<td>What is the effectiveness of Maternal and Perinatal Death Surveillance and Response programmes in the reduction of maternal deaths due to PPH?</td>
</tr>
<tr>
<td>5</td>
<td>Cross-cutting</td>
<td>What is the effectiveness and safety of tranexamic acid (TXA) in the prevention of PPH in general obstetric population and in women at high risk of PPH (e.g. anaemic women)?</td>
</tr>
<tr>
<td>Final Ranking</td>
<td>Section</td>
<td>Suggested research question</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Implementation</td>
<td>What are the implementation barriers and facilitators affecting the adoption and use of evidence-based recommendations for PPH management?</td>
</tr>
<tr>
<td>2</td>
<td>Implementation</td>
<td>What are the optimal strategies to ensure access to quality-assured PPH medicines (including Universal Health Coverage/Essential Packages for Health Services and Health Benefit Package) in low- and middle-income countries?</td>
</tr>
<tr>
<td>3</td>
<td>Implementation</td>
<td>What are the most effective advocacy strategies to improve the uptake and ensure sustainment of evidence-based practices for PPH management at the country level?</td>
</tr>
<tr>
<td>4</td>
<td>Implementation</td>
<td>What is the effectiveness and cost of pre-service and in-service training programmes for frontline healthcare workers (paramedics, general practice doctors, community health workers, midwives, nurses) to manage and refer women with PPH?</td>
</tr>
<tr>
<td>5</td>
<td>Implementation</td>
<td>What are the most effective implementation strategies to improve uptake and sustainment of recommended evidence-based interventions for PPH management, including in humanitarian settings?</td>
</tr>
<tr>
<td>Final Ranking</td>
<td>Section</td>
<td>Suggested research question</td>
</tr>
<tr>
<td>---------------</td>
<td>---------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Innovation</td>
<td>What is the comparative effectiveness and safety of alternative routes of tranexamic acid (TXA) in the treatment of PPH?</td>
</tr>
<tr>
<td>2</td>
<td>Innovation</td>
<td>What is the effectiveness and safety of heat-stable carbetocin for PPH treatment in women who received heat-stable carbetocin for PPH prevention?</td>
</tr>
<tr>
<td>3</td>
<td>Innovation</td>
<td>What is the comparative effectiveness of uterine balloon tamponade devices compared to other tamponade interventions (such as suction devices) in the reduction of PPH-related maternal morbidity and mortality?</td>
</tr>
<tr>
<td>4</td>
<td>Innovation</td>
<td>Can clinical criteria for haemodynamic instability facilitate earlier PPH diagnosis and improved PPH outcomes compared to blood loss measurement alone?</td>
</tr>
<tr>
<td>5</td>
<td>Innovation</td>
<td>What strategies are most effective for engaging the private sector in the development of new PPH medicines, devices, and diagnostics in low- and middle-income countries?</td>
</tr>
</tbody>
</table>
Postpartum Haemorrhage Summit

Current PPH guidelines landscape – gap analysis across policy developing organizations
Virginia Diaz, Researcher and Obstetrician & Gynaecologist, Centro Rosarino de Estudios Perinatales (CREP)

Methods and results of guideline prioritization exercise
Edgardo Abalos, Independent Researcher, Obstetric Department, Maternidad Martin

8 March 2023
Guideline prioritization

2 objectives

1. Mapping and gap analysis of existing PPH recommendations from key national and international guidelines

2. Identification of priorities for either:
   - updating existing recommendations
   - developing new recommendations
Mapping of existing PPH recommendations

Why is this important

- Up-to-date evidence-based recommendations are essential for implementation of effective PPH interventions at scale

- Target audience for international recommendations on PPH (midwives, obstetricians, general practice doctors, maternal health programme managers, policy-makers) are frequently confronted with PPH recommendations from multiple sources

- Local practice guidelines are not always congruent with national and international guidelines

- Recommendations issued by developers of national and international bodies are not always in agreement, and evidence is used inconsistently
  - Variable clinical practices
  - Challenges in scaling up effective interventions

Objectives of the mapping process

- To conduct a systematic search to identify all evidence-based recommendations on PPH published in key national and international guidelines
  - Know what is out there
  - Determine whether any critical recommendation is missing
  - Determine how consistent the recommendations are
Mapping of existing PPH recommendations

Methods

Search strategies

▪ Conducted a systematic search for evidence-based guidelines in PubMed and LILACS databases

▪ We employed a broad search strategy to identify all relevant international guidelines on PPH prevention and treatment within the last 10 years

▪ We used the terms ´postpartum haemorrhage´ and ´postpartum hemorrhage´ in PubMed and LILACS, respectively, and applied ´guidelines´ and ´practice guidelines´ filters on study type in PubMed and LILACS, respectively

▪ No language restriction was applied

Characteristics of the recommendations

▪ All identified recommendations were entered with unique IDs in excel spreadsheet

▪ Categorized each recommendation according to thematic areas for PPH guidelines (from diagnosis through health systems recommendations), noting the strength of the recommendation (where available), year of the publication, and latest evidence base underpinning the recommendation

▪ Compared recommendations within thematic areas to assess any disparity, using WHO recommendations as the gold standard
## Results

69 individual recommendations identified in total

<table>
<thead>
<tr>
<th>Organization</th>
<th># recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO</td>
<td>42</td>
</tr>
<tr>
<td>ACOG</td>
<td>26</td>
</tr>
<tr>
<td>FIGO</td>
<td>25</td>
</tr>
<tr>
<td>RCOG</td>
<td>25</td>
</tr>
<tr>
<td>RANZCOG</td>
<td>16</td>
</tr>
<tr>
<td>NICE</td>
<td>15</td>
</tr>
<tr>
<td>SOGC</td>
<td>15</td>
</tr>
<tr>
<td>CNGOF</td>
<td>14</td>
</tr>
<tr>
<td>JSOG</td>
<td>8</td>
</tr>
</tbody>
</table>

World Health Organization (WHO)  
American College of Obstetrics and Gynaecology (ACOG)  
International Federation of Gynecology and Obstetrics (FIGO)  
Royal College of Obstetricians and Gynaecologists (RCOG)  
Royal Australian & New Zealand College of Obstetricians & Gynaecologists (RANZCOG)  
National Institute for Health and Care Excellence (NICE)  
The Society of Obstetricians and Gynaecologists of Canada (SOGC)  
Collège National Des Gynécologues Et Obstétriciens Français (CNGOF)  
Japan Society of Obstetrics and Gynecology (JSOG)
For each of the 69 recommendations identified, we looked into each of the 9 guidelines to see whether they:

- **Recommended in favor of the intervention in question**
- **Recommended against the intervention in question**
  - Either considered the evidence as insufficient to make a recommendation,
  - Or recommended neither in favor of or against the intervention in question
- **Did not include a recommendation** for the intervention in question
### Results | Mapping and gap analysis of existing PPH recommendations (1/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>WHO</th>
<th>FIGO</th>
<th>RCOG</th>
<th>NICE</th>
<th>ACOG</th>
<th>SOGC</th>
<th>CNGOF</th>
<th>JSOG</th>
<th>RANZCOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Oxytocin (10 IU, IM/IV) for prevention of PPH for all births</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2</td>
<td>Slow IV administration of 10 IU oxytocin in preference to IM administration where women already have IV access</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>3</td>
<td>Carbetocin (100 µg, IM/IV) for prevention of PPH for all births in contexts where its cost is comparable to other effective uterotonics</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Carbetocin in preference to oxytocin for women with one risk factor for PPH</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Oral misoprostol (either 400 µg or 600 µg) for prevention of PPH for all births</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>6</td>
<td>Ergometrine/methylergometrine (200 µg, IM/IV) for prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>7</td>
<td>Fixed-dose combination of oxytocin and ergometrine (5 IU/500 µg, IM) for prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>8</td>
<td>Injectable prostaglandins (carboprost or sulprostone) for the prevention of PPH</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Oxytocin (10 IU, IM/IV) as the uterotic agent of choice for the prevention of PPH for all births where multiple uterotonic options are available</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10</td>
<td>Other injectable uterotonics (carbetocin, or if appropriate ergometrine/methylergometrine, or oxytocin and ergometrine fixed-dose combination) or oral misoprostol for prevention of PPH where oxytocin is unavailable (or its quality cannot be guaranteed)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>11</td>
<td>Oral misoprostol (400 µg or 600 µg) by community health workers and lay health workers for prevention of PPH where skilled health personnel are not present</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>12</td>
<td>Antenatal distribution of misoprostol for self-administration in certain settings with targeted monitoring and evaluation</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>13</td>
<td>Combination of treatments for women at risk of PPH</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

** indicates that specific recommendations are not addressed in the mapping and gap analysis.
## Results | Mapping and gap analysis of existing PPH recommendations (2/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>WHO</th>
<th>FIGO</th>
<th>RCOG</th>
<th>NICE</th>
<th>ACOG</th>
<th>SOGC</th>
<th>CNGOF</th>
<th>JSOG</th>
<th>RANZCOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td>Controlled cord traction by skilled health professional for vaginal births if small reduction in the duration of the third stage of labour is considered important</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>**</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Controlled cord traction by non-skilled health professional for vaginal births</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Controlled cord traction only after oxytocin and signs of separation of the placenta</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Change from physiological to active management if haemorrhage occurs, placenta is not delivered within one hour of the birth or the woman wishes to shorten the third stage</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Placental cord drainage to reduce the duration of third stage of labour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>Sustained uterine massage as an intervention to prevent PPH in women who have received prophylactic oxytocin</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oxytocin (IV or IM) as the uterotonic drug of choice for the prevention of PPH in caesarean section</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Carbetocin 100 mg IV for the prevention of PPH in elective caesarean section to reduce the need for uterotonics</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Controlled cord traction for removal of the placenta in caesarean section</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tranexamic acid (0.5–1.0 g IV), in addition to oxytocin, at caesarean section to reduce blood loss in women at increased risk of PPH</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td>✗</td>
</tr>
<tr>
<td></td>
<td>Late cord clamping (performed after 1 to 3 minutes after birth) for all births</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Early cord clamping (&lt;1 minute after birth) unless the neonate is asphyxiated and needs to be moved immediately for resuscitation.</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Results | Mapping and gap analysis of existing PPH recommendations (3/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>WHO</th>
<th>FIGO</th>
<th>RCOG</th>
<th>NICE</th>
<th>ACOG</th>
<th>SOGC</th>
<th>CNGOF</th>
<th>JSOG</th>
<th>RANZCOG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Postpartum abdominal uterine tonus assessment for early identification of uterine atony for all women</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Measurement of blood loss rather than clinical estimation of blood loss for diagnosis of PPH</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Clinical signs rather than visual estimation of blood loss for diagnosis of PPH</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Treatment</strong> (first response)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Intravenous oxytocin as first-line treatment for PPH</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Intravenous ergometrine, oxytocin-ergometrine fixed dose, or a prostaglandin drug (including sublingual misoprostol, 800 µg) when IV oxytocin is unavailable, or if the bleeding does not respond to oxytocin</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>31</td>
<td>IV tranexamic acid (within 3 hours of birth) in addition to standard care for women with PPH for all births</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>32</td>
<td>Manual removal of the placenta within 30 and 60 min if placenta is not delivered and there is no bleeding</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>33</td>
<td>IV/IM oxytocin (10 IU) in combination with controlled cord traction if the placenta is not expelled spontaneously</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>34</td>
<td>Ergometrine for the management of retained placenta</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Prostaglandin E2 alpha (dinoprostone or sulprostone) for the management of retained placenta</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Umbilical vein injection of oxytocin for the treatment of retained placenta</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Anaesthetic for uterine exploration and manual removal of the placenta</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Uterine curettage when uterotonics fail to resolve secondary PPH or if retained products of conception are suspected</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Single dose of antibiotics (ampicillin or first-generation cephalosporin) if manual removal of the placenta is practiced</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Results | Mapping and gap analysis of existing PPH recommendations (4/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>WHO</th>
<th>FIGO</th>
<th>RCOG</th>
<th>NICE</th>
<th>ACOG</th>
<th>SOGC</th>
<th>CNGOF</th>
<th>JSOG</th>
<th>RANZCOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (refractory PPH)</td>
<td>Uterine massage for the treatment of PPH</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Bimanual uterine compression as a temporizing measure until appropriate care is available for PPH due to uterine atony after vaginal birth</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>External aortic compression as a temporizing measure until appropriate care is available for PPH due to uterine atony after vaginal birth</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Uterine balloon tamponade (UBT) for treatment of postpartum haemorrhage after vaginal birth in women who do not respond to standard first-line treatment under certain conditions</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td>**</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>44</td>
<td>Non-pneumatic anti-shock garment as a temporizing measure until appropriate care is available</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Uterine packing for the treatment of PPH due to uterine atony after vaginal birth.</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Uterine artery embolization for treatment for PPH due to uterine atony if other measures have failed and resources are available</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>47</td>
<td>Surgical interventions if bleeding does not stop despite treatment with uterotonic treatment and other available conservative interventions (e.g., uterine massage, balloon tamponade)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>
## Results | Mapping and gap analysis of existing PPH recommendations (5/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>WHO</th>
<th>FIGO</th>
<th>RCOG</th>
<th>NICE</th>
<th>ACOG</th>
<th>SOGC</th>
<th>CNGOF</th>
<th>JSOG</th>
<th>RANZCOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (refractory PPH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Isotonic crystalloids in preference to colloids for the initial intravenous fluid resuscitation of women with PPH</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>49</td>
<td>Recombinant factor VIIa for the treatment of PPH</td>
<td>**</td>
<td>❌</td>
<td>✔</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Decision-making regarding blood transfusion based on clinical and haematological criteria in the absence of firm criteria for initiating transfusion</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Transfusion of 4 units of red blood cells and 12–15 mL/kg fresh frozen plasma in the presence of continuing haemorrhage when blood test results are unavailable</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>52</td>
<td>Early transfusion of fresh frozen plasma when PPH detection has been delayed and no blood test results are available</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>53</td>
<td>Transfusion of volumes of fresh frozen plasma in excess of 15 mL/kg when prothrombin time is more than 1.5 times normal and haemorrhage is ongoing</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Maintenance of a plasma fibrinogen level &gt;2 g/L during ongoing PPH</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>55</td>
<td>Transfusion of cryoprecipitate for fibrinogen replacement during ongoing PPH</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>56</td>
<td>Transfusion of platelets when the platelet count is less than 75x10⁹/L during ongoing PPH</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Prophylaxis for venous thromboembolism once acute haemorrhage has been controlled</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>58</td>
<td>Transfusion of prothrombin complex concentrates in the setting of PPH and disseminated intravascular coagulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>59</td>
<td>Intraoperative cell salvage (autologous blood transfusion) when significant blood loss is anticipated such as in placenta previa or placenta accreta</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>60</td>
<td>Administration of intravenous iron for postpartum anaemia</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>
# Results | Mapping and gap analysis of existing PPH recommendations (6/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>WHO</th>
<th>FIGO</th>
<th>RCOG</th>
<th>NICE</th>
<th>ACOG</th>
<th>SOGC</th>
<th>CNGOF</th>
<th>JSOG</th>
<th>RANZCOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health system</td>
<td>Communication with the woman and her birthing partner, with clear information about what is happening given from the outset</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Involvement of a multidisciplinary team for women with major PPH and ongoing bleeding or clinical shock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Formal protocols by health facilities for the prevention and treatment of PPH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Formal protocols for referral of women to a higher level of care for health facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Inclusion of emergency blood provision in major obstetric haemorrhage protocols</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>PPH emergency equipment in all obstetric units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Multidisciplinary management and delivery plans for women diagnosed with placenta accreta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>Monitoring use of uterotonics after birth for the prevention of PPH as a process indicator for programmatic evaluation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>N= 69</td>
<td>N=42</td>
<td>N=25</td>
<td>N=25</td>
<td>N=15</td>
<td>N=26</td>
<td>N=15</td>
<td>N=14</td>
<td>N=8</td>
<td>N=16</td>
</tr>
<tr>
<td>Consistency with WHO recommendations</td>
<td>NA</td>
<td>22/25</td>
<td>8/25</td>
<td>10/15</td>
<td>9/26</td>
<td>7/15</td>
<td>8/14</td>
<td>6/8</td>
<td>8/16</td>
<td></td>
</tr>
</tbody>
</table>
## Consistency of PPH recommendations across organizations

<table>
<thead>
<tr>
<th>Thematic area</th>
<th>Consistency</th>
</tr>
</thead>
</table>
| **Overall consistency** | ✓ General concordance between WHO and FIGO recommendations.  
✓ National professional association recommendations are least consistent with WHO recommendations  
✓ Many recommendations are not actionable either because of insufficient evidence or their wording |
| **Prevention** | ✓ Oxytocin as uterotonic of choice for prevention of PPH in all births |
| **Treatment (1st line)** | ✓ IV Oxytocin for first-line treatment of PPH  
✓ IV Tranexamic acid plus standard care as first-line response for PPH treatment |
| **Treatment (refractory)** | ✓ Uterine balloon tamponade for treatment of PPH after vaginal birth in women who do not respond to standard first-line treatment under certain conditions  
✓ Uterine artery embolization for treatment for PPH due to uterine atony if other measures have failed and resources are available  
✓ Surgical interventions if bleeding does not stop despite treatment with uterotonics and other available conservative interventions |
| **Health system** | ✓ Involvement of a multidisciplinary team for women with major PPH and ongoing bleeding or clinical shock  
✓ Formal protocols for referral of women to a higher level of care for health facilities |
### Thematic area

<table>
<thead>
<tr>
<th>Inconsistency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevention</strong> (C-section)</td>
</tr>
<tr>
<td>Tranexamic acid (0.5–1.0 g IV), in addition to oxytocin, at caesarean section to reduce blood loss in women at increased risk of PPH</td>
</tr>
<tr>
<td><strong>Treatment</strong> (retained placenta)</td>
</tr>
<tr>
<td>IV/IM oxytocin (10 IU) in combination with controlled cord traction if the placenta is not expelled spontaneously</td>
</tr>
<tr>
<td>Umbilical vein injection of oxytocin for the treatment of retained placenta</td>
</tr>
<tr>
<td><strong>Treatment</strong> (refractory PPH)</td>
</tr>
<tr>
<td>Recombinant factor VIIa for the treatment of PPH</td>
</tr>
</tbody>
</table>
## Mapping | Major gaps in PPH recommendations across organizations

<table>
<thead>
<tr>
<th>Thematic area</th>
<th>Gaps identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>- No recommendations in up to 50% of the matrix&lt;br&gt;- Blood and blood products transfusion recommendations are generally lacking from WHO and FIGO guidelines</td>
</tr>
<tr>
<td>Prevention</td>
<td>- Carbetocin for prevention of PPH&lt;br&gt;- Oral misoprostol for prevention of PPH&lt;br&gt;- Fixed dose combination of oxytocin and ergometrine for PPH prevention&lt;br&gt;- Other injectable uterotonics as alternative for PPH prevention where oxytocin is unavailable&lt;br&gt;- Combination of treatments for women at risk of PPH</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>- Measurement of blood loss rather than clinical estimation for PPH diagnosis</td>
</tr>
<tr>
<td>Treatment (first response)</td>
<td>- Other injectable uterotonics as alternative for PPH treatment where oxytocin is unavailable&lt;br&gt;- Management of retained placenta - manual removal and use of injectable uterotonics</td>
</tr>
<tr>
<td>Treatment (refractory PPH)</td>
<td>- Maneuvers as temporizing measures for treatment of refractory PPH&lt;br&gt;- Non-pneumatic anti-shock garment as temporizing measure for treatment of refractory PPH&lt;br&gt;- Blood and blood products replacement therapies&lt;br&gt;- Administration of IV iron for postpartum anaemia</td>
</tr>
</tbody>
</table>
Guideline prioritization

2 objectives

1. Mapping and gap analysis of existing PPH recommendations from key national and international guidelines

2. Identification of priorities for either:
   - updating existing recommendations
   - developing new recommendations
Prioritization for recommendation development or update

Scientific knowledge is in constant change

- Continuous development in scientific knowledge requires ongoing review of health policies and practices
  => Need for updating arise from changes in the information that formed the basis of original recommendation
  => Updating is a crucial step in the lifecycle of a practice guideline

- Improving transparency, thoroughness and quality of guidelines but less attention to process for maintaining their validity and quality over time
  ⇒ Organizations that develop guidelines provide little details on updating
  ⇒ Often no formal procedures or non-systematic application of procedures

WHO ‘living’ guideline approach

- WHO “living guideline” approach has been developed and applied to respond more rapidly to impactful evidence since 2017
  ⇒ Based on an evidence-informed, consultative prioritization process
  ⇒ Determination of impactful evidence is not straightforward
  ⇒ 2021 evidence mapping and prioritization exercise resulted in no PPH guideline priorities for update
### Overview of WHO guideline prioritization process – 11 Decision rules for prioritization

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Substantial number of new effectiveness or other studies not yet assessed or included in a systematic review</td>
</tr>
<tr>
<td>2</td>
<td>Substantial number of new studies that may undermine the credibility of the recommendation</td>
</tr>
<tr>
<td>3</td>
<td>Data available on new intervention for a health condition</td>
</tr>
<tr>
<td>4</td>
<td>Evidence now available for specific intervention rather than class or group of interventions</td>
</tr>
<tr>
<td>5</td>
<td>Identification of definitional, consistency or interpretation issues in existing recommendations</td>
</tr>
<tr>
<td>6</td>
<td>Wide-scale changes in technologies (or access to technologies) that impact on clinical practice</td>
</tr>
<tr>
<td>7</td>
<td>Related recommendation has changed or has been prioritized for updating</td>
</tr>
<tr>
<td>8</td>
<td>New evidence synthesis methods (such as network meta-analysis or individual patient data meta-analysis) may give new findings</td>
</tr>
<tr>
<td>9</td>
<td>Guideline Steering Group is of the view that a recommendation should be viewed as a good practice statement</td>
</tr>
<tr>
<td>10</td>
<td>The question underlying the recommendation needs to be revisited</td>
</tr>
<tr>
<td>11</td>
<td>Changes in evidence related to <strong>how people value outcomes</strong>, or the <strong>acceptability, feasibility, equity</strong> or <strong>cost-effectiveness</strong> of the intervention, <strong>that strongly drove</strong> an existing recommendation</td>
</tr>
</tbody>
</table>
Prioritization for recommendation development or update

2 objectives of the prioritization process

- Conduct an update of evidence base underpinning existing PPH recommendations and identify which recommendations are high priority for update based on evidence-driven ‘intelligence gathering’
  - Determine whether there is any shift in evidence base that could impact the current recommendations

- Review new evidence base from the literature and determine their potential to influence new global policies on PPH
  - Know whether there is impactful evidence not covered in existing PPH guidelines

These objectives are centered around Decision rules 1 & 2
Prioritization for recommendation development or update

Methods

Search strategies

▪ Recommendations published by WHO
  => Update search based on the strategies applied to the evidence underpinning the recommendation

▪ Recommendations published by other guideline developers
  => Update search based on the strategies applied to the evidence considered most rigorous across similar recommendations

▪ Potential recommendations never addressed by any guideline
  ⇒ Update search or review up-to-date systematic review for the new evidence based on the strategies applied to such review
  ⇒ Assessment of the updated body of evidence

‘Intelligence gathering’

▪ Process
  => Assess new trial reports and trial registry records for inclusion/exclusion
  => Add data from new included trials into meta-analysis software
  => Assess whether the effects or the certainty of the evidence changes substantially

▪ Actions
  ⇒ If the direction or certainty of effect estimates for priority outcomes have changed, an update of the recommendation may be needed (high priority)
### Prioritization Method | WHO framework for assessing priority for update

<table>
<thead>
<tr>
<th>Does the published recommendation still address a current topic for clinical practice?</th>
<th>Update status and priority for update</th>
<th>Rationale for priority level</th>
<th>Future outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No update planned. <strong>Low priority</strong> for update</td>
<td>Intervention not in use or been superseded Research area no longer active or superseded Other (provide reasons)</td>
<td>Revalidate or withdraw recommendation</td>
</tr>
<tr>
<td>Yes</td>
<td>Are there any new studies, or new information?</td>
<td>Up-to-date. <strong>Low priority</strong> for update</td>
<td>Revalidate recommendation</td>
</tr>
<tr>
<td>No</td>
<td>No new studies identified with search All studies incorporated from the most recent search</td>
<td>Revalidate recommendation</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Will new studies, information or data substantively change the evidence base or credibility?</td>
<td>Up-to-date. <strong>Low priority</strong> for update</td>
<td>Revalidate recommendation</td>
</tr>
<tr>
<td>No</td>
<td>High certainty (quality) of evidence base New information identified but unlikely to change evidence base</td>
<td>Revalidate recommendation</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Prepare for full update</td>
<td>Out of date. <strong>High priority</strong> for update</td>
<td>Update existing recommendation Formulate new recommendation</td>
</tr>
<tr>
<td>New information identified and very likely to change evidence base Relevant and impactful studies completed/published</td>
<td>Update existing recommendation Formulate new recommendation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Has the systematic review been updated since the recommendation was formulated or last updated?

- NO

Are there new study reports identified for this systematic review from the new search?

- NO

Are there new study reports identified for this systematic review from the new search?

- YES

Do rapid update of the meta-analyses for guideline priority outcomes

- YES

Any substantive change in estimates of effect, compared to the recommendation / GRADE tables?

- NO

Prepare brief narrative summary

Possible high priority for update

- YES

No further action
Low priority for update

- NO
<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>Year of publication</th>
<th>Search date for evidence base</th>
<th>New search date</th>
<th>Number of studies eligible</th>
<th>Rapid appraisal conducted (Yes/No)</th>
<th>Other considerations</th>
<th>Suggested priority for update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td>1 Oxytocin (10 IU, IM/IV) for prevention of PPH for all births</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>2 Slow IV administration of 10 IU oxytocin in preference to IM administration where women already have IV access</td>
<td>2020</td>
<td>Dec 2019</td>
<td>June 2023</td>
<td>1 study (n=171)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>3 Carbetocin (100 µg, IM/IV) for prevention of PPH for all births in contexts where its cost is comparable to other effective uterotonic</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>Yes</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>4 Oral misoprostol (either 400 µg or 600 µg) for prevention of PPH for all births</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>5 Ergometrine/methylergometrine (200 µg, IM/IV) for prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>6 Fixed-dose combination of oxytocin and ergometrine (5 IU/500 µg, IM) for prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>7 Injectable prostaglandins (carboprost or sulprostone) for the prevention of PPH</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>8 Oxytocin (10 IU, IM/IV) as the uterotonic agent of choice for the prevention of PPH for all births where multiple uterotonic options are available</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>9 Other injectable uterotonics (carbetocin, or if appropriate ergometrine/ methylergometrine, or oxytocin and ergometrine fixed-dose combination) or oral misoprostol for prevention of PPH where oxytocin is unavailable (or its quality cannot be guaranteed)</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>10 Oral misoprostol (400 µg or 600 µg) by community health workers and lay health workers for prevention of PPH where skilled health personnel are not present</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>11 Antenatal distribution of misoprostol for self-administration in certain settings with targeted monitoring and evaluation</td>
<td>2020</td>
<td>Oct 2019</td>
<td>Jan 2023</td>
<td>0</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>12 Combination of treatments for women at risk of PPH</td>
<td>2016</td>
<td>Consensus</td>
<td>No</td>
<td>None</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Network meta-analysis that included 196 trials (135,559 women). Additional studies unlikely to change the direction of effect estimates for priority outcomes
### Results | Suggested priority for update (2/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>Year of publication</th>
<th>Search date for evidence base</th>
<th>New search date</th>
<th>Number of studies eligible</th>
<th>Rapid appraisal conducted (Yes/No)</th>
<th>Other considerations</th>
<th>Suggested priority for update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td>Controlled cord traction by skilled health professional for vaginal births if small reduction in the duration of the third stage of labour is considered important</td>
<td>2012</td>
<td>Jan 2014</td>
<td>Dec 2022</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Controlled cord traction by non-skilled health professional for vaginal births</td>
<td>2012</td>
<td>Jan 2014</td>
<td>Dec 2022</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Controlled cord traction only after oxytocin and signs of separation of the placenta</td>
<td>2014</td>
<td>Apr 2006</td>
<td>Dec 2022</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Change from physiological to active management if haemorrhage occurs, placenta is not delivered within one hour of the birth or the woman wishes to shorten the third stage</td>
<td>2014</td>
<td>Consensus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Placental cord drainage to reduce the duration of third stage of labour</td>
<td>2018</td>
<td>2007</td>
<td>Dec 2022</td>
<td>7</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Sustained uterine massage as an intervention to prevent PPH in women who have received prophylactic oxytocin</td>
<td>2012</td>
<td>Apr 2013</td>
<td>Dec 2022</td>
<td>1</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Oxytocin (IV or IM) as the uterotonc drug of choice for the prevention of PPH in caesarean section</td>
<td>2018</td>
<td>May 2018</td>
<td>**</td>
<td>—</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Carbetocin 100 mg IV for the prevention of PPH in elective caesarean section to reduce the need for uterotonics</td>
<td>2018</td>
<td>2007</td>
<td>**</td>
<td></td>
<td>No</td>
<td>None</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Controlled cord traction for removal of the placenta in caesarean section</td>
<td>2012</td>
<td>Sept 2007</td>
<td>Dec 2022</td>
<td>2</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Tranexamic acid (0.5–1.0 g IV), in addition to oxytocin, at caesarean section to reduce blood loss in women at increased risk of PPH</td>
<td>2016</td>
<td>Jan 2015</td>
<td>Jan 2023</td>
<td>2</td>
<td>Yes</td>
<td>None</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Late cord clamping (performed after 1 to 3 minutes after birth) for all births</td>
<td>2012</td>
<td>June 2012</td>
<td>Dec 2022</td>
<td>2</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Early cord clamping (&lt;1 minute after birth) is not recommended unless the neonate is asphyxiated and needs to be moved immediately for resuscitation.</td>
<td>2012</td>
<td>June 2012</td>
<td>Dec 2022</td>
<td>2</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
</tbody>
</table>

1. The concerned review was published and corresponding search updated after the publication of the guideline document.
### Results | Suggested priority for update (3/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>Year of publication</th>
<th>Search date for evidence base</th>
<th>New search date</th>
<th>Number of studies eligible</th>
<th>Rapid appraisal conducted (Yes/No)</th>
<th>Other considerations</th>
<th>Suggested priority for update</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagnosis</strong></td>
<td>Postpartum abdominal uterine tonus assessment for early identification of uterine atony for all women</td>
<td>2012</td>
<td>Apr 2013&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Dec 2022</td>
<td>1 study (n=2340)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Measurement of blood loss rather than clinical estimation of blood loss for diagnosis of PPH</td>
<td>2012</td>
<td>Feb 2018&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Jan 2023</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Clinical signs rather than visual estimation of blood loss for diagnosis of PPH</td>
<td>2012</td>
<td>Feb 2018&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Jan 2023</td>
<td>0</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Treatment (first response)</strong></td>
<td><strong>Intravenous oxytocin as first-line treatment for PPH</strong></td>
<td>2012</td>
<td>Aug 2013&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Jan 2023</td>
<td>0</td>
<td>NA</td>
<td>Yes</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Intravenous ergometrine, oxytocin-ergometrine fixed dose, or a prostaglandin drug (including sublingual misoprostol, 800 µg) when IV oxytocin is unavailable, or if the bleeding does not respond to oxytocin</td>
<td>2012</td>
<td>Aug 2013&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Jan 2023</td>
<td>0</td>
<td>NA</td>
<td>Yes</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>IV tranexamic acid (within 3 hours of birth) in addition to standard care for women with PPH for all births</strong></td>
<td>2017</td>
<td>May 2017</td>
<td>Dec 2022</td>
<td>3 studies (n=513)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>Manual removal of the placenta within 30 and 60 min if placenta is not delivered and there is no bleeding</strong></td>
<td>2016</td>
<td>Consensus</td>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>IV/IM oxytocin (10 IU) in combination with controlled cord traction if the placenta is not expelled spontaneously</strong></td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>1 study (n=117)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>Ergometrine for the management of retained placenta</strong></td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>1 study (n=117)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>Prostaglandin E2 alpha (dinoprostone or sulprostone) for the management of retained placenta</strong></td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>1 study (n=117)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>Umbilical vein injection of oxytocin for the treatment of retained placenta</strong></td>
<td>2020</td>
<td>June 2020</td>
<td>June 2020</td>
<td>1 study (n=523)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>Anaesthetic for uterine exploration and manual removal of the placenta</strong></td>
<td>2016</td>
<td>Consensus</td>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>Uterine curettage when uterotonics fail to resolve secondary PPH or if retained products of conception are suspected</strong></td>
<td>2017</td>
<td>No SR</td>
<td>Dec 2022</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td><strong>Single dose of antibiotics (ampicillin or first-generation cephalosporin) if manual removal of the placenta is practiced</strong></td>
<td>2012</td>
<td>July 2014&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Jan 2023</td>
<td>1 SR (n=567)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
</tbody>
</table>

SR: Systematic review

1. The concerned review was published and corresponding search updated after the publication of the guideline document.
## Results | Suggested priority for update (4/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>Year of publication</th>
<th>Search date for evidence base</th>
<th>New search date</th>
<th>Number of studies eligible</th>
<th>Rapid appraisal conducted (Yes/No)</th>
<th>Other considerations</th>
<th>Suggested priority for update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (refractory PPH)</td>
<td>Uterine massage for the treatment of PPH</td>
<td>2012</td>
<td>2012</td>
<td>Jan 2023</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Bimanual uterine compression as a temporizing measure until appropriate care is available for PPH due to uterine atony after vaginal birth</td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>External aortic compression as a temporizing measure until appropriate care is available for PPH due to uterine atony after vaginal birth</td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Uterine balloon tamponade (UBT) for treatment of postpartum haemorrhage after vaginal birth in women who do not respond to standard first-line treatment under certain conditions</td>
<td>2021</td>
<td>July 2019</td>
<td>Jan 2023</td>
<td>3 studies (n=231)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Non-pneumatic anti-shock garment as a temporizing measure until appropriate care is available</td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>1 SR (n=3210)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Uterine packing for the treatment of PPH due to uterine atony after vaginal birth</td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>1 study (n=224)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Uterine artery embolization for treatment for PPH due to uterine atony if other measures have failed and resources are available</td>
<td>2012</td>
<td>2012</td>
<td>Dec 2022</td>
<td>1 study (n=100)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Surgical interventions if bleeding does not stop despite treatment with uterotonics and other available conservative interventions (e.g., uterine massage, balloon tamponade)</td>
<td>2012</td>
<td>2012</td>
<td>Jan 2023</td>
<td>1 study (n=100)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
</tbody>
</table>

SR: Systematic review
### Results | Suggested priority for update (5/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>Year of publication</th>
<th>Search date for evidence base</th>
<th>New search date</th>
<th>Number of studies eligible</th>
<th>Rapid appraisal conducted (Yes/No)</th>
<th>Other considerations</th>
<th>Suggested priority for update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (refractory PPH)</td>
<td>Isotonic crystalloids in preference to colloids for the initial intravenous fluid resuscitation of women with PPH</td>
<td>2012</td>
<td>Oct 2012</td>
<td>Jan 2023</td>
<td>2 studies (n=479)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Recombinant factor VIIa for the treatment of PPH</td>
<td>2012</td>
<td>2012</td>
<td>Jan 2023</td>
<td>1 study (n=84)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Decision-making regarding blood transfusion based on clinical and haematological criteria in the absence of firm criteria for initiating transfusion</td>
<td>2017</td>
<td>May 2016</td>
<td>Feb 2023</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Transfusion of 4 units of red blood cells and 12–15 mL/kg fresh frozen plasma in the presence of continuing haemorrhage when blood test results are unavailable</td>
<td>2016</td>
<td>2016</td>
<td>Feb 2023</td>
<td>18 studies (n=31318)</td>
<td>Yes</td>
<td>None</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Early transfusion of fresh frozen plasma when PPH detection has been delayed and no blood test results are available</td>
<td>2016</td>
<td>2016</td>
<td>Feb 2023</td>
<td>4 Studies (n=516)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Transfusion of volumes of fresh frozen plasma in excess of 15 mL/kg when prothrombin time is more than 1.5 times normal and haemorrhage is ongoing</td>
<td>2016</td>
<td>2016</td>
<td>Feb 2023</td>
<td>4 studies (n=516)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Maintenance of a plasma fibrinogen level &gt;2 g/L during ongoing PPH</td>
<td>2016</td>
<td>2016</td>
<td>Feb 2023</td>
<td>1 SR (n=299) / 3 studies (n=1319)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Transfusion of cryoprecipitate for fibrinogen replacement during ongoing PPH</td>
<td>2016</td>
<td>2016</td>
<td>Feb 2023</td>
<td>1 SR (n=299) / 3 RCT (n=1319)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Transfusion of platelets when the platelet count is less than 75x10^9/L during ongoing PPH</td>
<td>2016</td>
<td>2016</td>
<td>Feb 2023</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Prophylaxis for venous thromboembolism once acute haemorrhage has been controlled</td>
<td>2021</td>
<td>2021</td>
<td>Feb 2023</td>
<td>1 SR (n=55)</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Transfusion of prothrombin complex concentrates in the setting of PPH and disseminated intravascular coagulation</td>
<td>2017</td>
<td>2017</td>
<td>Feb 2023</td>
<td>0</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Intraoperative cell salvage (autologous blood transfusion) when significant blood loss is anticipated such as in placenta previa or placenta accreta</td>
<td>2016</td>
<td>2016</td>
<td>Jan 2023</td>
<td>6 studies (n=3305)</td>
<td>Yes</td>
<td>None</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Administration of intravenous iron for postpartum anaemia</td>
<td>2017</td>
<td>2017</td>
<td>Feb 2023</td>
<td>2 SR (10=1553 15=2182) / 1 RCT (n=200)</td>
<td>Yes</td>
<td>None</td>
<td>High</td>
</tr>
</tbody>
</table>

SR: Systematic review
### Results | Suggested priority for update (6/6)

<table>
<thead>
<tr>
<th>Thematic areas</th>
<th>All recommendations identified</th>
<th>Year of publication</th>
<th>Search date for evidence base</th>
<th>New search date</th>
<th>Number of studies eligible</th>
<th>Rapid appraisal conducted (Yes/No)</th>
<th>Other considerations</th>
<th>Suggested priority for update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Communication with the woman and her birthing partner, with clear information about what is happening given from the outset</td>
<td>2016</td>
<td>Consensus</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Involvement of a multidisciplinary team for women with major PPH and ongoing bleeding or clinical shock</td>
<td>2016</td>
<td>Consensus</td>
<td>NA</td>
<td>None</td>
<td>None</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>63</td>
<td>Formal protocols by health facilities for the prevention and treatment of PPH</td>
<td>2012</td>
<td>No SR</td>
<td>None</td>
<td>0</td>
<td>None</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>64</td>
<td>Formal protocols for referral of women to a higher level of care for health facilities</td>
<td>2012</td>
<td>No SR</td>
<td>None</td>
<td>0</td>
<td>None</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>65</td>
<td>Inclusion of emergency blood provision in major obstetric haemorrhage protocols</td>
<td>2014</td>
<td>No SR</td>
<td>None</td>
<td>NA</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>66</td>
<td>PPH emergency equipment in all obstetric units</td>
<td>2018</td>
<td>2007</td>
<td>None</td>
<td>NA</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>67</td>
<td>Multidisciplinary management and delivery plans for women diagnosed with placenta accreta</td>
<td>2016</td>
<td>No SR</td>
<td>Feb 2023</td>
<td>0</td>
<td>None</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>68</td>
<td>Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2023</td>
<td>5 SR (n=1M women)</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>69</td>
<td>Monitoring use of uterotonics after birth for the prevention of PPH as a process indicator for programmatic evaluation</td>
<td>2012</td>
<td>No SR</td>
<td>Jan 2022</td>
<td>0</td>
<td>NA</td>
<td>None</td>
<td>Low</td>
</tr>
</tbody>
</table>

SR: Systematic review
Summary | Significant inconsistencies across guidelines and 6 recommendations suggested as priority for update

- Only **11 are consistent** across < 50% of the 9 guidelines
- **5 are inconsistent** across at least two guidelines
- **28 are recommended by only 1 or 2 guidelines**
- **6 are suggested as priority for update**

Overall, **only 51%** of recommendations formulated by other guidelines are consistent with WHO’s

<table>
<thead>
<tr>
<th>Guideline</th>
<th>What % of the guideline’s recommendations are consistent with WHO’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIGO</td>
<td><strong>88%</strong> (22/25)</td>
</tr>
<tr>
<td>JSOG</td>
<td><strong>75%</strong> (6/8)</td>
</tr>
<tr>
<td>NICE</td>
<td><strong>67%</strong> (10/15)</td>
</tr>
<tr>
<td>CNGOF</td>
<td><strong>57%</strong> (8/14)</td>
</tr>
<tr>
<td>RANZCOG</td>
<td><strong>50%</strong> (8/16)</td>
</tr>
<tr>
<td>SOGC</td>
<td><strong>47%</strong> (7/15)</td>
</tr>
<tr>
<td>ACOG</td>
<td><strong>35%</strong> (9/26)</td>
</tr>
<tr>
<td>RCOG</td>
<td><strong>32%</strong> (8/25)</td>
</tr>
<tr>
<td>OVERALL</td>
<td><strong>51%</strong> (78/154)</td>
</tr>
</tbody>
</table>

- Carbetocin (100 µg, IM/IV) for prevention of PPH for all births in contexts where its cost is comparable to other effective uterotonics
- Tranexamic acid (0.5–1.0 g IV), in addition to oxytocin, at caesarean section to reduce blood loss in women at increased risk of PPH
- Transfusion of 4 units of red blood cells and 12–15 mL/kg fresh frozen plasma in the presence of continuing haemorrhage when blood test results are unavailable
- Intraoperative cell salvage (autologous blood transfusion) when significant blood loss is anticipated such as in placenta previa or placenta accreta
- Administration of intravenous iron for postpartum anaemia
Panel discussion: alignment of priorities for PPH recommendations
Panel discussion with professional associations on alignment of priorities for PPH recommendations
Postpartum Haemorrhage Summit

PPH Country Case Study – reflecting national contextual factors, policies, scale-up plans and investments, and service delivery - Uzma Syed, WHO

8 March 2023
Objectives

• Systematically document the policies, services and programmes that influenced PPH management and related outcomes in the case study countries over the past decade.

• Understand the status of implementation of evidence-based interventions related to the management of PPH at national, sub-national and at the district or health facility level.

• Identify important enablers and barriers for scale up of interventions related to management of PPH.
Trends in Maternal Mortality Ratio in the Countries Selected for PPH Case Studies

<table>
<thead>
<tr>
<th>Country</th>
<th>MMR 2000</th>
<th>MMR 2015</th>
<th>MMR 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pakistan</td>
<td>387</td>
<td>187</td>
<td>154</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1148</td>
<td>1113</td>
<td>1047</td>
</tr>
<tr>
<td>Tanzania</td>
<td>760</td>
<td>330</td>
<td>238</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>Target</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pakistan</td>
<td>95</td>
<td>2030</td>
</tr>
<tr>
<td>Nigeria</td>
<td>100</td>
<td>2025 (HSSP V)</td>
</tr>
<tr>
<td>Tanzania</td>
<td>100</td>
<td>2025 (HSSP V)</td>
</tr>
</tbody>
</table>
Case Study
Methods

Desk Review

• >150 documents reviewed on policies, technical guidelines, clinical protocols, reports and published articles

Data collection from selected facilities

• In each country, data were collected from 20-40 facilities on the operational factors around PPH service delivery

Stakeholder interview

• About ~50 stakeholders were interviewed, individually or in group, for data collection as well as for validating the data on identified barriers and successes.
Factors influencing PPH implementation
Background Characteristics
## Country profile

<table>
<thead>
<tr>
<th>Country</th>
<th>Pakistan</th>
<th>Tanzania</th>
<th>Nigeria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female literacy rate²</td>
<td>46% (2019)</td>
<td>78% (2021)</td>
<td>53% (2018)</td>
</tr>
<tr>
<td>Proportion of facility births³</td>
<td>70% (2020)</td>
<td>81% (2022)</td>
<td>39.4% (2018)</td>
</tr>
<tr>
<td>Private sector⁴ (% of facility births)</td>
<td>42.6% (2019)</td>
<td>Total private (2.4%) + faith based (9.4%): ~12%</td>
<td>33% (2018)</td>
</tr>
</tbody>
</table>
## Status of Key Maternal Health Policies

<table>
<thead>
<tr>
<th>Key Policies (Green = yes/present; Red = no/absent; orange: partial)</th>
<th>Nigeria</th>
<th>Tanzania</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>National RMNCAH coordinating body</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sub-national/provincial RMNCAH platform</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Private sector included in RMNCAH body</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>National law guarantees universal access to PHC</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Law requiring birth and death registration</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>National QoC Guideline for Maternal Health</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>National ANC, Childbirth and PNC guidelines include global standards</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Policies requires all maternal deaths to be reviewed</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Policies include</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National panel/committee to review maternal deaths</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sub-national panel to review maternal deaths</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>National policy recommending midwife-led care for birth</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Births attended by skilled health personnel

Source: Nigeria DHS 2018, Pakistan DHS 2019, Tanzania DHS Key Indicator Report 2022,
Analysis
Analysis Framework

Non-health context
- Political
- Social
- Humanitarian
- Environmental

Health Policies, programmes & investment
- Policy
  - Technical guidelines
  - Financing/investment
  - Access (equity)
  - Scale up

Community level
- Care-seeking
- Experience of care
- Engagement

Service level
- Levels of care
- Quality of care
- Health workforce
- Private sector
- Supply chain
- Monitoring & data use
- Clinical audit and feedback
- Referral linkages
Summary Findings
Timeline - Nigeria

2011
- FMOH approved the Inclusion of Misoprostol in Essential Drug List
- National Health Insurance Scheme continues & Community HIS launched (2010)

2013
- Community distribution of Misoprostol initiated
- National obstetric care protocols

2017
- MPDSR report highlights PPH burden
- SOGON developed PPH guideline

2019
- RMNCAEH+N multistakeholder platform formed for UHC
- Introduction of Carbetocin in 3 states

2020
- Nigerian National Assembly passed Bill on Maternal deaths reporting & MPDSR bill – adopted by 4 states

2021
- Carbetocin guideline launched

2022

Timeline:
- Out-of-pocket spending 75%
- Champion trial 2007-2013
- Woman trial 2010-2016
- Out-of-pocket spending 77%
- Emotive Trial 2019-2024
- Out-of-pocket spending 73.3%
- National
- Sub-national / local
Timeline - Tanzania

2011
- PPP Act to encourage private sector collaboration

2013
- MPDSR introduced

2017
- Campaign on women’s right to health

2019
- Members of parliament committed to address PPH
- Implementation of Carbetocin in 5 districts & quality-assured oxytocin and tranexamic acid
- NASG in 280 facilities

2020
- MoH article on PPH
- Campaign on pregnant women to deliver in health facility
- Implementation of Carbetocin in private facilities

2021
- Quality assessment of Oxytocin and Tranexamic acid
- Initiation of National maternal death audits via Zoom

2022
- PPH guideline in progress

Out-of-pocket spending:
- 2011: 28%
- 2013: 21%
- 2017: 22%

Other initiatives:
- Thamini Uhai: 16 CEmONC and 32 BEmONC facilities
- Distribution of clean birth kits with Misoprostol
- Distribution of clean birth kits with Misoprostol
- EMOTIVE Trial 2019-2024
Timeline - Pakistan

**2011-2015**
- National vertical programs like MNCH, LHWs plus donor funded large scale initiatives

**2016-2017**
- Setting SDG targets
- NATIONAL VISION 2016-2025
- Pilots on UBT & PPH mgt.

**2018-2019**
- Development of Essential Health Services Package and development of Universal health Coverage Benefit Package in the post Astana declaration
- MPDSR implementation in KP
- Community midwives initiative by Sindh govt.

**2020**
- 24/7 Basic Health Units providing skill birth attendants at govt facilities

**2021**
- MPDSR initiated in 4 provinces & ICT
- Misoprostol and Oxytocin provided through ESP
- PPH and Referral Guidelines developed
- Regional blood transfusion program

**2022**
- Provincial level sexual reproductive health rights bill is in process

- Out-of-pocket spending 70%
- Out-of-pocket spending 66%
- Out-of-pocket spending 54%

**WOMAN trial**

**EMOTIVE Trial 2019-2024**
Non-health Contextual Factors

- **Social Status:**
  - Slow but increasing trend in female literacy
  - Women with more than primary level education sought care more, delayed early pregnancy, long birth spacing, more involvement in decision making
  - Gender based violence and adolescent marriage are prevalent across the countries

- **Emergency response:**
  - Conflicts, migration, natural disasters, Covid 19 pandemic affected access, availability, utilization and financing for maternal health services; maternity staff were tasked with other services related to emergency response
  - Use of virtual means (mobile apps, tele-consultations, etc.) facilitated programme delivery;
  - Local community leaders influenced resource allocation (e.g., relief, commodity distribution, etc.)
Health Policy and Guidelines

- **Advocacy**: PPH, being the biggest killer, often does not appear as a national agenda; advocacy efforts are mainly geared towards broader maternal health agenda

- **Intervention Adoption and Technical Guidelines**:  
  - Context-specific local evidence is favoured for adoption and implementation of interventions  
  - Stakeholders preferred independent PPH protocols for implementation  
  - Lack of clear criteria for selection and adoption of evidence-based interventions  
  - Adoption of interventions (guidelines development) and subnational implementation are often not linked, especially in decentralised contexts; Sub-national level RMNCAH platforms could provide the linkage and comprise of local partners  
  - Protocols are inconsistently followed because of different stakeholders addressing PPH with different views  
  - ANC 8 is yet to be adopted in country policies
Programme and Investment

- **Programme development:**
  - Unclear pathway from pilot to adoption of interventions to implementation;
  - Projects often did not have handover/exit strategies; inadequate dissemination of results at local level;
  - Vertical approach for introducing various drugs and commodities hindered strategic scaling up and resources allocation.

- **Subnational level implementation:**
  - MPDSR provided the comprehensive platform for improving MNH services including PPH; however, the implementation is still localized, inadequately integrated and response is very low;
  - Wide subnational level disparities – rural/urban, poor/rich, minority/indigenous, etc.
  - Subnational level implementation yet to engage all relevant partners;
  - Private health sector is large; includes both formal and informal providers; sometimes the major/preferred provider at subnational level.

- **Financing:**
  - National government health expenditure continued to remain low over the years; subnational level pilots were largely funded by external donors;
  - Continuation/expansion of interventions suffered from withdrawal of funds;
  - “Contributory” health insurance schemes did not support the poor, unemployed, marginalized population.
Service Delivery

- Data sharing:
  - Facilities lack adequate data literacy and consequently are not benefitting from MPDSR data
  - Lack of regular communication between the MPDSR committees and local facility team leaders
  - Sometimes the Information shared is only for maternal deaths and not the survivors or near misses from PPH
  - Private health providers, major MH service providers in many states/provinces, are generally not engaged in local planning and sharing data/experiences; MPDSR did not include private providers/facilities
Service Delivery (cont’d)

- **Training / staffing:**
  - Clinical protocols are often not available/ accessible to the providers
  - Inconsistent use of clinical protocols across the facilities, both public and private
  - Providers trained in International Classification of Diseases are inadequate in number
  - Vertical in-service training not cost-effective; pre-service training often not updated to include the latest evidences
  - Tendency of concentrating skilled providers at teaching hospitals or in the cities; subnational/provincial level strategic deployment and resource allocation could improve the availability of skilled motivated staff
  - Efforts for strengthening the roles and social status of midwives was suboptimal

- **Availability of drugs / commodities:**
  - PPH drugs and commodities were costly and often not available in lower-level facilities; shelf life and quality of drugs were doubtful
  - Unavailability of blood challenged PPH management; requires sustainable strategies around blood donation, storage and distribution.
Community

- **Community engagement:**
  - Structured feedback mechanism between health care providers and community is stated in programme documents but not implemented consistently
  - Engaging community and male members in the MPDSR processes was promising but the implementation is limited

- **Out of pocket payment:** High costs and families bear the majority of payment for PPH

- **Local champions:** Local champions and committed individuals make a difference in managing resources
Seven Exemplar countries selected based on positive outlier performance at reducing Maternal and Neonatal Mortality

COUNTRY SELECTION

Methodology
- Compared NMR and MMR reductions to what would be expected based on change in GNI per capita
- Factored in regional representation, data availability, potential for cross-topic research saturation, and existing partnerships

Exemplar countries
- South Asia: Bangladesh, Nepal, India
- North Africa and Middle East: Morocco
- East Africa: Ethiopia
- West Africa: Niger, Senegal

Research questions
- Assess contribution of health system policies and programs, financing, human resources, intervention coverage, quality of care and contextual factors to the decline in NMR and MMR
- Hypothesize how drivers of success could be translated to other country contexts
<table>
<thead>
<tr>
<th>Exemplar countries</th>
<th>Global / Regional institutions</th>
<th>Host-country institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morocco</td>
<td>London School of Hygiene and Tropical Medicine (LSTMH)</td>
<td>Centre de Santé Reproductrice</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Johns Hopkins University (JHU)</td>
<td>International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)</td>
</tr>
<tr>
<td>India</td>
<td>University of Manitoba (UoM)</td>
<td>National Health System Resource Centre (NHSRC) International Institute for Population Sciences (IIPS)</td>
</tr>
<tr>
<td>Nepal</td>
<td>LSHTM</td>
<td>South Asian Institute for Policy Analysis</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>University of Manitoba (UoM)</td>
<td>Ethiopian Public Health Institute</td>
</tr>
<tr>
<td>Niger</td>
<td>JHU</td>
<td>Niger National Institute of Statistics</td>
</tr>
<tr>
<td>Senegal</td>
<td>LSHTM</td>
<td>Medical Research Council (MRC) Unit The Gambia</td>
</tr>
</tbody>
</table>
Exemplar countries made rapid progress along the Integrated Maternal, Neonatal, and Stillbirth Transition Model compared to case study countries.

Stage I indicates the highest levels of maternal and neonatal mortality, mainly caused by infections, low access to services, large inequalities, and high fertility.

Stage II still entails high NMR and MMR, though with improvements from Stage I that are often driven by increased contraception access and decreased fertility rates.

Stage III refers to intermediate NMR and MMR levels, with declines linked to more accessible health care services via expansion of physical infrastructure and human resources.

Stage IV follows the progress made in stage III, as more easily preventable (often infectious) causes of death are treated successfully in health facilities.

Stage V, the lowest possible NMR and MMR levels, wherein (almost) all preventable deaths are eliminated, and existing gaps in coverage for poorer, rural, less-educated communities shrink.

Cumulative Progress

Increased Health Service Coverage

Narrowing Equity Gaps

Fertility Decline
Key components of progress along the Mortality Transition in Exemplar Countries

**Key Takeaways: Fertility Decline**
- Fertility decline is a major contributor for NMR/MMR decline in most Exemplar countries, especially when moving from stages I to II and III
- Declines in maternal mortality associated with fertility decline driven by increases in contraceptive use among rural and lower SES women, later marriages and age at first birth, and better access to abortion services
- Increases in women’s education and labor force participation also contributed to fertility decline and associated mortality reductions

**Key Takeaways: Increased Service Contacts**
- Large increases in institutional birth and widespread improvements in ANC coverage and quality, indicating expanded access to services and interventions
- 75% of all maternal lives saved in Exemplar countries were due to interventions at childbirth and 20% due to peri-conceptual (family planning) interventions
- In most Exemplars, uterotonic for PPH is the top obstetric intervention
- Increased service contacts are often driven by removing financial obstacles, pro-poor schemes, investments in road systems, and growing health workforce capacity

**Key Takeaways: Equity Improvements**
- Major reduction in rich-poor gaps seen for countries later in the transition, with little to no change for countries earlier in the transition
- C-section among poor is a key indicator for equity improvements, with low rates (<1%) for countries in Stages II and III, increasing to 5% in Stage III and 10% in Stage IV
- Making comprehensive emergency obstetric care accessible to all women is essential for reaching stages IV and V

---

**Percentage of mortality reduction associated with fertility decline 2000-2017**

- India (National): 27%
- Nepal: 39%
- Bangladesh: 42%
- Morocco: 47%
- Senegal: 12%
- Niger: 10%
- Ethiopia: 29%

**Maternal Lives Saved by Key Interventions in Exemplar Countries, 2020**

**C-Section Among Poorest Wealth Quintile**

- Stage III to IV
- Stage I/II to III
- Stage I to II
Major reductions in Maternal Mortality in most exemplar countries relative to case study countries, from 2000 to 2015

Key Takeaways

- On average, Exemplar countries saw a 55.8% reduction in MMR overall as compared to an average 38% MMR reduction in case study countries

- Declines in maternal mortality are largely driven by reductions in death due to infections, abortion/miscarriage, and hemorrhage

- Maternal mortality declines are usually driven by increased facility births, improved access to increasingly skilled providers, and improvements in quality-of-care indicators such as C-section
Most Exemplars see large declines in Hemorrhage related maternal deaths, with India and Nepal showing rapid improvements in recent decades

Maternal Deaths from Hemorrhage by Country

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>39.2%</td>
<td>140</td>
<td>25</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>55.5%</td>
<td>220</td>
<td>100</td>
</tr>
<tr>
<td>India</td>
<td>62%</td>
<td>280</td>
<td>110</td>
</tr>
<tr>
<td>Morocco</td>
<td>68.5%</td>
<td>300</td>
<td>50</td>
</tr>
<tr>
<td>Nepal</td>
<td>42.8%</td>
<td>150</td>
<td>70</td>
</tr>
</tbody>
</table>

- **Key Takeaways**
  - Maternal deaths from hemorrhage in Exemplar countries see rapid declines from 1990-2019
  - Case study countries show little improvement for maternal deaths from Hemorrhage since 1990
  - Although apparent stagnation, Exemplar countries Niger, Senegal, and Morocco have maintained generally low levels of maternal deaths from hemorrhage
  - India had the largest overall decline, with hemorrhage related deaths decreasing from 168 to 64 per 100,000 live births in 2019
  - Nepal had the steepest decline in recent years, decreasing from 105 to 64 hemorrhage-related maternal deaths per 100,000 live births between 2011 and 2019 after relative stagnation prior
  - Morocco has maintained consistently low levels of hemorrhage related maternal deaths, with rapid declines occurring around 2000

Source: IHME GBD 2019
Nepal achieved rapid declines in Hemorrhage related mortality by increasing access to uterotonics

Percent of Deliveries with Access to Uterotonics
Maternal Lives Saved Due to Increased Availability of Uterotonics
MMR from Hemorrhage (Deaths per 100,000 live births)
In-facility delivery

Key Takeaways

- Whereas in 1996, only 3.2% of births in Nepal were estimated to occur in a facility with uterotonics available, by 2020 this had increased to 76.6%
- In 2020, improved availability of uterotonics since was estimated to have saved 321 maternal lives in Nepal
- MMR from Hemorrhage in Nepal fell from 111 to 64 maternal deaths per 100,000 live births from 1990 to 2019
- Availability of uterotonics rapidly increased in the last decade, leading to more maternal lives saved and MMR due to hemorrhage declines

Postpartum Hemorrhage Prevention Program

- In 2009, Nepal Ministry of Health and Population launched a program targeted at preventing PPH in home births using advanced distribution of misoprostol to mothers during ANC visits
- In 2011, 85% of women in Nepal received at least one ANC visit, while only 35% delivered in a health facility—making ANC visits a powerful opportunity that could be leveraged to improve PPH outcomes
Morocco has the lowest mortality from PPH of all Exemplar countries, declining 66% from 1990-2019

Key Takeaways
- Maternal mortality from hemorrhage has improved steadily in Morocco over recent decades, with a particularly sharp decline near the year 2000
- This decline in hemorrhage related MMR aligns with improved essential availability of essential drugs, as over 100 maternal lives per year are estimated to be saved in Morocco due to the increased availability of uterotonics since 2000

Emergency Obstetric Care Prioritization in 1995
- Aimed at addressing the ‘three-delays’ women face in accessing essential maternal healthcare
  - Delay in decision to seek care (poor understanding of complications/risk factors, financial implications, previous poor healthcare experience)
  - Delay in reaching care due to distance to facilities, transportation issues, and other logistical hurdles
  - Delay in receiving adequate healthcare due to poor facility quality, lack of trained staff, or poor referral system
Niger halved PPH Case Fatality Rate in facilities from 2015-2020 by implementing a 3-step treatment plan

**Program Implementation**

- All deliveries in health facilities followed a 3-step treatment process that utilized low-cost interventions and included clear treatment decision points
- This program included 1.4 million in-facility births from 2015-2020 that took place in 1,217 health centers, 35 district hospitals, and 9 referral hospitals

**Key Takeaways**

- While PPH incidence stayed relatively constant, PPH case fatality fell 49% from 5.05 to 2.58 deaths per 100 cases over the span of 2015 to 2020
- The contribution of PPH to maternal mortality declined at all levels of health facilities including hospitals and health centers
- An estimated 1,417 maternal lives were saved from 2015-2020 as a result of this program

---

**In-Facility Deliveries**

1. Measure blood loss using wrap-garment which absorbs 500mL
   - If bleeding exceeds 500mL
2. Administered 800µg of misoprostol
   - If bleeding continues after 20 minutes
3. Insertion and inflation of an intrauterine tamponade
   - If bleeding persists 6-12 minutes
4. Non-Pneumatic Anti-Shock Garment used & patient transferred to hospital

**Home Deliveries**

- 600µg of misoprostol pre-emptively provided at ANC visit for use
- If warning signs discussed during ANC visit arise
- Patient encouraged to seek care in nearest facility

---

**PPH Incidence (cases per 100 births)**

- 2015: 5.05
- 2016: 4.37
- 2017: 3.76
- 2018: 3.49
- 2019: 2.67
- 2020: 2.58

**PPH Case Fatality Rate (deaths per 100 PPH cases)**

- 2015: 2.10
- 2016: 2.10
- 2017: 1.61
- 2018: 1.47
- 2019: 1.61
- 2020: 1.65
How we can support uptake and use of findings

**Build Awareness**
- Disseminate results at global conferences and virtual webinars
- Participate in regional or country dissemination workshops

**Facilitate Peer-to-Peer Learning**
- Exchange learnings and support collaboration between Exemplar and learner countries
- Facilitate consultations with EGH research partners, key stakeholders, and broader network of partners

**Provide Strategic and Technical Guidance**
- Repackage findings to support upcoming decisions related program, policy, funding, and/or evaluation

**Inform Research Agendas**
- Guide additional qualitative or quantitative research based on findings, literature review, and limitations

For more information, please reach out

[ONLINE](www.exemplars.health)  [E-MAIL](insights@exemplars.health)  [FOLLOW](@exemplarshealth)  [CONNECT](Exemplars in Global Health)
Panel discussion: Challenges in implementing what works
Challenges in implementing what works – perspectives from the Ministries of Health

**Panelists**

**Dr Fatema RAHMAN**  
Professor of Obstetrics and Gynecology  
Dhaka Medical College  
Ministry of Health and Family Welfare  
Bangladesh

**Dr Anders SEIM**  
Executive Director and Founder  
Health & Development International  
Norway and USA

**Dr Samuel OYENIYI**  
Head of Safe Motherhood Branch  
Ministry of Health  
Nigeria

**Dr Nousheen FAROOQ**  
Head of Gynaecology and Obstetrics  
Department Mother and Child Health Centre  
Ministry of National Health Services Regulations and Coordination  
Pakistan

**Dr Dalya ELTAYEB**  
Director General of PHC  
Federal Ministry of Health of Sudan  
Sudan

**Moderator**

**Dr Richard MUGAHI**  
Assistant Commissioner of Health Services  
Reproductive and Infant Health  
Ministry of Health (MOH)  
Uganda
Postpartum Haemorrhage Summit

Methods & results from pre-Summit survey on implementation barriers to recommended intervention

Caitlin R. Williams (IECS) & Guervan Adnet (BCG)

8 March 2023
Implementation | Four inputs will be presented in Plenary session to feed discussions in four dedicated breakout sessions... 

Country case studies on Nigeria, Pakistan and Tanzania

Experience from global exemplar countries

Perspectives from Ministries of Health on challenges in implementing what works

Survey on barriers to Implementation for 20 recommended interventions: what works best and what are the main barriers to implementation

... feeding four discussions in breakouts to frame barriers to implementation and brainstorm on solutions

1 National context – e.g., Women’s rights & social status, Legislative measures, emergency situations

2 Programme & Investments – e.g. PPH guideline, programme development from pilot to scale up, equity and access to care, Investment

3 Commodities – e.g., Regulatory, procurement & supply chain, quality, affordability & out of pocket expenses

4 Service delivery – e.g., Job aids for guideline implementation, referral pathways between levels of care and community, training staffing, audit & feedback

Focus for this section
**Analysis** | Deep dive on methodology for scoring barriers to implementation

1. **Input**
   - For each recommended intervention, each respondent:
     - **answered 6 or 10 questions** (depending on whether medicines or devices are involved) with one of the following: "Strongly agree", "Agree", "Neither agree or disagree", "Disagree", "Strongly disagree", "Don't know"
     - had the opportunity to provide **additional comments** (incl. known enablers or barriers for successful implementation)

2. **Analysis**
   - For each recommended intervention, each question is **attributed a score** based on participant assessment:
     - "Strongly agree" = 1
     - "Agree" = 0.75
     - "Neither agree or disagree" = 0.5
     - "Disagree" = 0.25
     - "Strongly disagree" = 0
     - "Don't know" → dropped from analysis
   
   - For each intervention x question, scores are **summed up across respondents and divided** per total number of responses (thus excluding "Don't know"s)

- **6 questions per recommended intervention**, 4 additional questions if medicine or devices are involved
  - National guideline aligns and specifies how to deliver this intervention?
  - Stakeholders act as 'champions' to locally support implementation by raising awareness and encouraging uptake of this intervention?
  - Medicine or device nationally registered and licensed for this indication?
  - Medicine or device included in national Essential Medicines List or national equivalent for this indication in the country?
  - Medicine or device is available, and stock-outs are not an obstacle to use?
  - Appropriate job aids (e.g., clinical protocols) for this intervention are available in facility level?
  - Healthcare workers are aware and perceive this intervention as useful and effective?
  - Available products in the market are perceived as affordable and of good quality?
  - Healthcare workers are trained, experienced, & confident to consistently deliver this intervention?
  - Healthcare facilities are adequately staffed and equipped to consistently deliver this intervention?

**Clinical recommendation involving medicine or devices**
**Back-up**: 20 clinical interventions recommended by WHO are included in this survey

<table>
<thead>
<tr>
<th>WHO recommended intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical recommendations involving medicines</td>
</tr>
<tr>
<td>1. Oxytocin injection for PPH prevention and treatment</td>
</tr>
<tr>
<td>2. Ergometrine injection for PPH prevention and treatment</td>
</tr>
<tr>
<td>(if oxytocin is unavailable)</td>
</tr>
<tr>
<td>3. Fixed-dose oxytocin and ergometrine combination injection</td>
</tr>
<tr>
<td>for PPH prevention and treatment (if oxytocin is unavailable)</td>
</tr>
<tr>
<td>4. Heat-stable carbetocin injection for PPH prevention</td>
</tr>
<tr>
<td>(if oxytocin is unavailable or quality cannot be guaranteed)</td>
</tr>
<tr>
<td>5. Oral misoprostol for PPH prevention and treatment</td>
</tr>
<tr>
<td>(if oxytocin is unavailable or did not stop the bleeding)</td>
</tr>
<tr>
<td>6. Isotonic crystalloids for fluid resuscitation of women with</td>
</tr>
<tr>
<td>PPH</td>
</tr>
<tr>
<td>7. Tranexamic acid (TXA) injection plus standard care for PPH</td>
</tr>
<tr>
<td>treatment</td>
</tr>
<tr>
<td>8. Oxytocin in combination with controlled cord traction for</td>
</tr>
<tr>
<td>retained placenta</td>
</tr>
<tr>
<td>Clinical recommendations involving devices</td>
</tr>
<tr>
<td>9. Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
</tr>
<tr>
<td>10. Non-pneumatic anti-shock garment (NASG) as temporizing</td>
</tr>
<tr>
<td>measure for definitive PPH care</td>
</tr>
<tr>
<td>Clinical recommendations involving no medicines nor devices</td>
</tr>
<tr>
<td>11. Uterine artery embolization for refractory PPH treatment</td>
</tr>
<tr>
<td>12. Bimanual uterine compression as temporizing measure before</td>
</tr>
<tr>
<td>definitive PPH care</td>
</tr>
<tr>
<td>13. External aortic compression as temporizing measure for</td>
</tr>
<tr>
<td>definitive PPH care</td>
</tr>
<tr>
<td>14. Surgical interventions (laparotomy with vessel ligation or</td>
</tr>
<tr>
<td>compressive sutures or hysterectomy) for refractory PPH treatment</td>
</tr>
<tr>
<td>15. Abdominal uterine tonus assessment for early identification</td>
</tr>
<tr>
<td>of uterine atony for all women postpartum</td>
</tr>
<tr>
<td>16. Controlled cord traction is the recommended method for</td>
</tr>
<tr>
<td>removal of the placenta in caesarean section</td>
</tr>
<tr>
<td>17. Uterine massage for conservative treatment of PPH</td>
</tr>
<tr>
<td>18. Formal protocols at health facilities for prevention and</td>
</tr>
<tr>
<td>treatment of PPH</td>
</tr>
<tr>
<td>19. Formal protocols for referral of women to a higher level of</td>
</tr>
<tr>
<td>care for treatment of PPH</td>
</tr>
<tr>
<td>20. Simulations of PPH treatment for pre-service and in-service</td>
</tr>
<tr>
<td>training programmes</td>
</tr>
</tbody>
</table>

We acknowledge this is not a comprehensive list and if these alone were implemented correctly PPH mortality may not disappear. However these are critical interventions to implement. Regarding other effective interventions, we should consider developing guidance.
For each intervention (horizontal), the main barriers to implementation are identified based on their score: i.e., the lower / redder the score is, the more it represents a barrier to implementation.

A threshold of 75% was used to identify priority barriers to implementation.

Scores for each intersection Intervention x Question are positioned on a heatmap to help visualize priority gaps.

A threshold of 75% was used to identify priority barriers to implementation.

### Question

<table>
<thead>
<tr>
<th>Question</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Inclusion in national EMIs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q01 Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>89%</td>
<td>81%</td>
<td>70%</td>
<td>72%</td>
<td>72%</td>
<td>79%</td>
<td>77%</td>
<td>77%</td>
</tr>
<tr>
<td>Q02 Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>58%</td>
<td>67%</td>
<td>58%</td>
<td>54%</td>
<td>53%</td>
<td>59%</td>
<td>55%</td>
<td>55%</td>
</tr>
<tr>
<td>Q03 Fixed-dose oxytocin and ergometrine combination injection for PPH</td>
<td>50%</td>
<td>52%</td>
<td>37%</td>
<td>40%</td>
<td>50%</td>
<td>48%</td>
<td>52%</td>
<td>40%</td>
<td>39%</td>
</tr>
<tr>
<td>Q04 Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>59%</td>
<td>45%</td>
<td>45%</td>
<td>45%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Q05 Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)</td>
<td>84%</td>
<td>85%</td>
<td>81%</td>
<td>82%</td>
<td>77%</td>
<td>78%</td>
<td>75%</td>
<td>77%</td>
<td>76%</td>
</tr>
<tr>
<td>Q06 Isotonic crystalloids for fluid resuscitation of women with PPH</td>
<td>84%</td>
<td>84%</td>
<td>81%</td>
<td>84%</td>
<td>72%</td>
<td>75%</td>
<td>78%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>Q07 Tranexamic acid (TIVA) injection plus standard care for PPH treatment</td>
<td>79%</td>
<td>80%</td>
<td>80%</td>
<td>78%</td>
<td>82%</td>
<td>72%</td>
<td>75%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Q08 Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>83%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>82%</td>
<td>82%</td>
</tr>
<tr>
<td>Q09 Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>48%</td>
<td>52%</td>
<td>52%</td>
<td>57%</td>
<td>49%</td>
<td>47%</td>
</tr>
<tr>
<td>Q11 Uterine artery embolization for refractory PPH treatment</td>
<td>50%</td>
<td>54%</td>
<td>54%</td>
<td>52%</td>
<td>44%</td>
<td>48%</td>
<td>48%</td>
<td>42%</td>
<td>42%</td>
</tr>
<tr>
<td>Q12 Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>56%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>44%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Q13 External aortic compression as temporizing measure for definitive PPH care</td>
<td>71%</td>
<td>70%</td>
<td>69%</td>
<td>69%</td>
<td>64%</td>
<td>64%</td>
<td>67%</td>
<td>62%</td>
<td>62%</td>
</tr>
<tr>
<td>Q14 Uterine massage for conservative treatment of PPH</td>
<td>70%</td>
<td>70%</td>
<td>66%</td>
<td>66%</td>
<td>68%</td>
<td>68%</td>
<td>66%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Q15 Uterine artery embolization for definitive PPH treatment</td>
<td>71%</td>
<td>71%</td>
<td>66%</td>
<td>66%</td>
<td>63%</td>
<td>63%</td>
<td>67%</td>
<td>64%</td>
<td>64%</td>
</tr>
<tr>
<td>Q16 Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>74%</td>
<td>74%</td>
<td>74%</td>
<td>74%</td>
<td>74%</td>
<td>74%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Q17 Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>67%</td>
<td>66%</td>
<td>66%</td>
<td>66%</td>
<td>66%</td>
<td>66%</td>
<td>69%</td>
<td>69%</td>
<td>69%</td>
</tr>
<tr>
<td>Q18 Normal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td>Q19 Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
</tr>
<tr>
<td>Q20 Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>70%</td>
<td>70%</td>
<td>64%</td>
<td>64%</td>
<td>64%</td>
<td>64%</td>
<td>64%</td>
<td>64%</td>
<td>64%</td>
</tr>
</tbody>
</table>

**Score scale**

- **Low**
- **Medium**
- **High**

**Analysis** | Visualizing gaps on a heatmap
# Q1 Oxytocin injection for PPH prevention and treatment

## What works best

+ National guidelines align and specify how to deliver this intervention
+ Stakeholders locally support implementation
+ Medicine is registered and licensed for this indication and included in national essential medicines lists

## Main barriers to implementation

- **Stockouts** perceived as an obstacle to use
- Available products are perceived of **poor quality** (esp. cheaper brands of Oxytocin)
- Lack of **staff** (especially in lower levels of care) and **equipment** (*e.g.* fridges for storage) to deliver this intervention

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q01 Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
<td>68%</td>
</tr>
<tr>
<td>Q02 Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>83%</td>
<td>56%</td>
<td>57%</td>
<td>90%</td>
<td>74%</td>
<td>77%</td>
<td>82%</td>
<td>77%</td>
<td>78%</td>
<td>72%</td>
</tr>
<tr>
<td>Q03 Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>55%</td>
<td>52%</td>
<td>57%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
<td>38%</td>
</tr>
<tr>
<td>Q04 Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
<td>38%</td>
</tr>
<tr>
<td>Q05 Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)</td>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
<td>72%</td>
</tr>
<tr>
<td>Q06 Isotonic crystalloids for fluid resuscitation of women with PPH</td>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
<td>73%</td>
</tr>
<tr>
<td>Q07 Tranexamic acid (TMA) injection plus standard care for PPH treatment</td>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>75%</td>
<td>71%</td>
<td>71%</td>
</tr>
<tr>
<td>Q08 Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
<td>73%</td>
</tr>
<tr>
<td>Q09 Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>40%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>49%</td>
<td>46%</td>
</tr>
</tbody>
</table>
### Q2 Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
<td>68%</td>
<td></td>
</tr>
<tr>
<td>63%</td>
<td>56%</td>
<td>67%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>59%</td>
<td>52%</td>
<td>55%</td>
<td>48%</td>
<td></td>
</tr>
<tr>
<td>55%</td>
<td>52%</td>
<td>57%</td>
<td>56%</td>
<td>40%</td>
<td>48%</td>
<td>52%</td>
<td>45%</td>
<td>50%</td>
<td>44%</td>
<td></td>
</tr>
<tr>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>75%</td>
<td>71%</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>49%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>49%</td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
<td></td>
</tr>
</tbody>
</table>

#### What works best

- **None of the prerequisites for successful implementation are satisfied**

#### Main barriers to implementation - overall lack of promotion of ergometrine (due to Oxytocin’s spread)

- **Overall lack of promotion of ergometrine** - especially because of Oxytocin’s and misoprostol’s spread (e.g., lack of alignment in national guidelines, poor support from local stakeholders, low registration and licensing)

- **Concerns about side effects** (e.g., safety for hypertensive women, vascular side effect in case of intraovens)}
### Q3 Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLS or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q01</td>
<td>Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
</tr>
<tr>
<td>Q02</td>
<td>Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>56%</td>
<td>67%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>59%</td>
<td>52%</td>
<td>55%</td>
</tr>
<tr>
<td>Q03</td>
<td>Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>$\text{55%}$</td>
<td>$\text{52%}$</td>
<td>$\text{57%}$</td>
<td>$\text{56%}$</td>
<td>$\underline{\text{40%}}$</td>
<td>$\underline{\text{48%}}$</td>
<td>$\underline{\text{52%}}$</td>
<td>$\underline{\text{45%}}$</td>
<td>$\underline{\text{50%}}$</td>
</tr>
<tr>
<td>Q04</td>
<td>Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>49%</td>
<td>40%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td>Q05</td>
<td>Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)</td>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
</tr>
<tr>
<td>Q06</td>
<td>Isotonic crystalloids for fluid resuscitation of women with PPH</td>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>Q07</td>
<td>Tranexamic acid (TXA) injection plus standard care for PPH treatment</td>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>75%</td>
<td>71%</td>
</tr>
<tr>
<td>Q08</td>
<td>Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>Q09</td>
<td>Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>40%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>49%</td>
</tr>
</tbody>
</table>

### What works best
- None of the prerequisites for successful implementation are satisfied

### Main barriers to implementation
- **Overall lack of promotion** of this combination in many settings (e.g. not included in national guidelines and not licensed)
- Combination **rarely used**, and often qualified as "out of fashion"
- **Combination unavailable** in most settings (e.g. Pakistan, India, Lebanon, Uganda)
- Lack of **qualified healthcare** workers for this intervention
- Lack of **equipment** to deliver this intervention (e.g. fridges for storage)
Q4 Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q01</td>
<td>Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
</tr>
<tr>
<td>Q02</td>
<td>Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>56%</td>
<td>67%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>59%</td>
<td>52%</td>
<td>55%</td>
</tr>
<tr>
<td>Q03</td>
<td>Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>55%</td>
<td>52%</td>
<td>57%</td>
<td>56%</td>
<td>40%</td>
<td>48%</td>
<td>52%</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td>Q04</td>
<td>Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td>Q05</td>
<td>Non-pneumatic anti-shock garment (NASG) as temporizing measure for definitive PPH care</td>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
</tr>
<tr>
<td>Q06</td>
<td>Carboplatin for fluid resuscitation of women with PPH</td>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>Q07</td>
<td>Tranexamic acid (TXA) injection plus standard care for PPH treatment</td>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>75%</td>
<td>71%</td>
</tr>
<tr>
<td>Q08</td>
<td>Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>Q09</td>
<td>Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>40%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>40%</td>
</tr>
</tbody>
</table>

What works best

None of the prerequisites for successful implementation are satisfied

Main barriers to implementation – new and expensive drug

- Still very new drug, still not known everywhere
- Not widely included in national guidelines or protocols
- When registered, often not yet delivered to health facilities (e.g. Uganda) or faces cold chain issues (e.g. Tanzania)
- Perceived as unaffordable for routine use routinely

- Not available in most settings (e.g. Pakistan, South Africa)
- Lack of qualified healthcare workers for this intervention
- Lack of equipment to deliver this intervention
Q5 Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5</td>
<td>Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)</td>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
</tr>
<tr>
<td>Q21</td>
<td>Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
</tr>
<tr>
<td>Q22</td>
<td>Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>56%</td>
<td>67%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>59%</td>
<td>52%</td>
<td>55%</td>
</tr>
<tr>
<td>Q23</td>
<td>Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>55%</td>
<td>52%</td>
<td>57%</td>
<td>56%</td>
<td>40%</td>
<td>48%</td>
<td>52%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>Q24</td>
<td>Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable)</td>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td>Q57</td>
<td>Tranexamic acid (TXA) injection plus standard care for PPH treatment</td>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>Q58</td>
<td>Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>73%</td>
<td>71%</td>
</tr>
<tr>
<td>Q59</td>
<td>Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>Q60</td>
<td>Non-pneumatic anti-shock garment (NASG) as temporizing measure for non-examined birth</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>40%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>49%</td>
</tr>
</tbody>
</table>

What works best

+ National guidelines align and specify how to deliver this intervention
+ Stakeholders locally support implementation
+ Medicine is registered and licensed for this indication
+ Medicine is rather cheap and easy to use (esp. in rural communities and health facilities)

Main barriers to implementation

- Stockouts issues in some settings (e.g. Lebanon)
- Lack of staff (especially in lower levels of care) to deliver this intervention
Q6 Isotonic crystalloids for fluid resuscitation of women with PPH

<table>
<thead>
<tr>
<th>Q</th>
<th>Question</th>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q01</td>
<td>Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
<td>68%</td>
<td></td>
</tr>
<tr>
<td>Q02</td>
<td>Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>56%</td>
<td>67%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>50%</td>
<td>52%</td>
<td>55%</td>
<td>48%</td>
<td></td>
</tr>
<tr>
<td>Q03</td>
<td>Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>55%</td>
<td>52%</td>
<td>57%</td>
<td>56%</td>
<td>40%</td>
<td>48%</td>
<td>52%</td>
<td>45%</td>
<td>50%</td>
<td>44%</td>
<td></td>
</tr>
<tr>
<td>Q04</td>
<td>Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>Q05</td>
<td>Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)</td>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>71%</td>
<td>77%</td>
<td>78%</td>
<td>74%</td>
<td></td>
</tr>
<tr>
<td>Q06</td>
<td>Isotonic crystalloids for fluid resuscitation of women with PPH</td>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>Q07</td>
<td>Tranexamic acid (TXA) injection plus standard care for PPH treatment</td>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>75%</td>
<td>71%</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>Q08</td>
<td>Oxytocin in combination with controlled cord traction for retained placenta or did not stop the bleeding)</td>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>Q09</td>
<td>Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>49%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>49%</td>
<td>46%</td>
<td></td>
</tr>
</tbody>
</table>

What works best

- National guidelines align and specify how to deliver this intervention
- Stakeholders locally support implementation
- Medicine is registered and licensed for this indication and included in national essential medicines lists
- Widely available, included in clinical protocols at facility level
- Considered useful, effective & affordable and providers are trained and confident to use

Main barriers to implementation

- Lack of staff (especially in rural or lower levels of care) to deliver this intervention
### Q7 Tranexamic acid (TXA) injection plus standard care for PPH treatment

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q01</td>
<td>Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>80%</td>
<td>73%</td>
<td>82%</td>
</tr>
<tr>
<td>Q02</td>
<td>Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>56%</td>
<td>65%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>59%</td>
<td>52%</td>
<td>55%</td>
</tr>
<tr>
<td>Q03</td>
<td>Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>55%</td>
<td>52%</td>
<td>55%</td>
<td>56%</td>
<td>40%</td>
<td>48%</td>
<td>52%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>Q04</td>
<td>Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td>Q05</td>
<td>Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)</td>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
</tr>
<tr>
<td>Q06</td>
<td>Isotonic crystalloids for fluid resuscitation of women with PPH</td>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>Q07</td>
<td>Tranexamic acid (TXA) injection plus standard care for PPH treatment</td>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>.70%</td>
<td>.72%</td>
<td>.75%</td>
<td>.75%</td>
<td>.71%</td>
</tr>
<tr>
<td>Q08</td>
<td>Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>Q09</td>
<td>Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>49%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>49%</td>
</tr>
<tr>
<td>Q10</td>
<td>Non-pneumatic anti-shock garment (NASC) as temporizing measure for placenta in caesarean section</td>
<td>72%</td>
<td>79%</td>
<td>54%</td>
<td>67%</td>
<td>82%</td>
<td>48%</td>
<td>79%</td>
<td>75%</td>
<td>78%</td>
</tr>
</tbody>
</table>

### What works best
- National guidelines align and specify how to deliver this intervention
- Stakeholders locally support implementation
- Medicine is registered and licensed for this indication and included in national essential medicines lists
- Considered useful, effective & affordable
- Available products are perceived as affordable and of good quality

### Main barriers to implementation
- Stockouts perceived as an obstacle to use and perception of price increase
- Lack of training and job aids to deliver this intervention
- Lack of staff (especially in rural or lower levels of care) to deliver this intervention
Q8 Oxytocin in combination with controlled cord traction for retained placenta

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Health care workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q21</td>
<td>Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
<td>68%</td>
</tr>
<tr>
<td>Q22</td>
<td>Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>67%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>59%</td>
<td>52%</td>
<td>55%</td>
<td>48%</td>
</tr>
<tr>
<td>Q23</td>
<td>Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>55%</td>
<td>57%</td>
<td>56%</td>
<td>40%</td>
<td>48%</td>
<td>52%</td>
<td>45%</td>
<td>50%</td>
<td>44%</td>
</tr>
<tr>
<td>Q24</td>
<td>Heat-stable carbetocin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
<td>38%</td>
</tr>
<tr>
<td>Q25</td>
<td>Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or didn’t stop the bleeding)</td>
<td>64%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
<td>72%</td>
</tr>
<tr>
<td>Q26</td>
<td>Isotonic crystalloids for fluid resuscitation of women with PPH</td>
<td>64%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
<td>73%</td>
</tr>
<tr>
<td>Q27</td>
<td>Tranexamic acid (TXA) injection plus standard care for PPH treatment</td>
<td>75%</td>
<td>78%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>75%</td>
<td>71%</td>
<td>71%</td>
</tr>
<tr>
<td>Q28</td>
<td>Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
<td>73%</td>
</tr>
<tr>
<td>Q29</td>
<td>Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>40%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>40%</td>
</tr>
</tbody>
</table>

What works best

+ National guidelines align and specify how to deliver this intervention
+ Stakeholders locally support implementation
+ Medicine is registered and licensed for this indication
+ Widely available, included in clinical protocols at facility level
+ Considered useful, effective & affordable and providers are trained and confident to use

Main barriers to implementation

- Lack of staff and equipment (especially in rural or lower levels of care) to deliver this intervention.
### Q9 Uterine balloon tamponade (UBT) for refractory PPH treatment

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q09</td>
<td>62%</td>
<td>58%</td>
<td>66%</td>
<td>60%</td>
<td>49%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>62%</td>
<td>46%</td>
</tr>
</tbody>
</table>

#### What works best
- None of the prerequisites for successful implementation are satisfied

#### Main barriers to implementation
- **Rarely used** and in most settings purpose-built devices are either **unavailable** or perceived as **unaffordable**
  - Although some providers use improvised devices such as water filled condoms, sterile gloves, 3-way foley
- **Overall lack of promotion**: lack of alignment in national guidelines, poor support from local stakeholders, low registration and licensing
- **Rarely included in clinical protocols** at facility level
- **Lack of trained staff** to deliver this intervention
### Q10 Non-pneumatic anti-shock garment (NASG) as temporizing measure for definitive PPH care

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Registration and license</th>
<th>Inclusion in national EMLs or equivalents?</th>
<th>Availability / Procurement</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Affordability &amp; quality</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q21</td>
<td>Oxytocin injection for PPH prevention and treatment</td>
<td>89%</td>
<td>83%</td>
<td>91%</td>
<td>90%</td>
<td>72%</td>
<td>79%</td>
<td>88%</td>
<td>73%</td>
<td>82%</td>
</tr>
<tr>
<td>Q22</td>
<td>Ergometrine injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>63%</td>
<td>56%</td>
<td>67%</td>
<td>63%</td>
<td>44%</td>
<td>52%</td>
<td>59%</td>
<td>52%</td>
<td>55%</td>
</tr>
<tr>
<td>Q23</td>
<td>Fixed-dose oxytocin and ergometrine combination injection for PPH prevention and treatment (if oxytocin is unavailable)</td>
<td>55%</td>
<td>52%</td>
<td>57%</td>
<td>56%</td>
<td>40%</td>
<td>48%</td>
<td>52%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>Q24</td>
<td>Heat-stable carbocetin injection for PPH prevention (if oxytocin is unavailable or quality cannot be guaranteed)</td>
<td>46%</td>
<td>49%</td>
<td>50%</td>
<td>47%</td>
<td>34%</td>
<td>39%</td>
<td>45%</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td>Q25</td>
<td>Oral misoprostol for PPH prevention and treatment (if oxytocin is unavailable or did not stop the bleeding)</td>
<td>84%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>74%</td>
<td>77%</td>
<td>81%</td>
<td>77%</td>
<td>78%</td>
</tr>
<tr>
<td>Q26</td>
<td>Isotonic crystalloids for fluid resuscitation of women with PPH</td>
<td>84%</td>
<td>81%</td>
<td>83%</td>
<td>82%</td>
<td>75%</td>
<td>77%</td>
<td>82%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>Q27</td>
<td>Tranexamic acid (TXA) injection plus standard care for PPH treatment</td>
<td>79%</td>
<td>79%</td>
<td>80%</td>
<td>78%</td>
<td>70%</td>
<td>72%</td>
<td>75%</td>
<td>71%</td>
<td>72%</td>
</tr>
<tr>
<td>Q28</td>
<td>Oxytocin in combination with controlled cord traction for retained placenta</td>
<td>85%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>Q29</td>
<td>Uterine balloon tamponade (UBT) for refractory PPH treatment</td>
<td>62%</td>
<td>62%</td>
<td>60%</td>
<td>58%</td>
<td>49%</td>
<td>52%</td>
<td>57%</td>
<td>52%</td>
<td>49%</td>
</tr>
<tr>
<td>Q10</td>
<td>Non-pneumatic anti-shock garment (NASG) as temporizing measure for definitive PPH care</td>
<td>55%</td>
<td>54%</td>
<td>54%</td>
<td>52%</td>
<td>39%</td>
<td>44%</td>
<td>48%</td>
<td>44%</td>
<td>42%</td>
</tr>
</tbody>
</table>

#### What works best
- Recognize as a successful intervention when available

#### Main barriers to implementation
- **Rarely used** and in most settings either **unavailable** or perceived as **unaffordable**, requiring a lot of skill for effective use, and difficult to maintain
- **Combination rarely used**, and often qualified as "out of fashion"

- **Overall lack of local awareness & promotion**: lack of alignment in national guidelines, poor support from local stakeholders, low registration and licensing
Q11 Uterine artery embolization for refractory PPH treatment

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11</td>
<td>56%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Q12</td>
<td>Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td>Q13</td>
<td>External aortic compression as temporizing measure for definitive PPH care</td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>Q14</td>
<td>Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
</tr>
<tr>
<td>Q15</td>
<td>Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Q16</td>
<td>Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>Q17</td>
<td>Uterine massage for conservative treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td>Q18</td>
<td>Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
</tr>
<tr>
<td>Q19</td>
<td>Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
</tr>
<tr>
<td>Q20</td>
<td>Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>69%</td>
<td>70%</td>
<td>66%</td>
<td>71%</td>
<td>66%</td>
</tr>
</tbody>
</table>

What works best

None of the prerequisites for successful implementation are satisfied

Main barriers to implementation – lack of awareness and promotion

- **Unavailable** in most settings as it requires specialist intervention radiology equipment and expertise
- **Rarely used** in public sector by some tertiary centers only
- **Overall lack of awareness & local promotion**: lack of alignment in national guidelines, poor support from local stakeholders, low registration and licensing
- **Lack of specialized training** of Healthcare providers (incl. surgical skills)
## Q12 Bimanual uterine compression as temporizing measure before definitive PPH care

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q12</td>
<td>Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
</tr>
<tr>
<td>Q13</td>
<td>Uterine artery embolization for refractory PPH treatment</td>
<td>50%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>39%</td>
</tr>
<tr>
<td>Q14</td>
<td>Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>Q15</td>
<td>Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
</tr>
<tr>
<td>Q16</td>
<td>Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Q17</td>
<td>Uterine massage for conservative treatment of PPH</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>Q18</td>
<td>Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
</tr>
<tr>
<td>Q19</td>
<td>Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
</tr>
<tr>
<td>Q20</td>
<td>Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
</tr>
</tbody>
</table>

### What works best
- National guidelines align and specify how to deliver this intervention

### Main barriers to implementation – lack of awareness
- **Not used often** because of **lack of training** and **dedicated staff** for carrying out this maneuver
- **Overall lack of local awareness & promotion**: lack of alignment in national guidelines, poor support from local stakeholders, low inclusion in clinical protocols at facility level
Q13 External aortic compression as temporizing measure for definitive PPH care

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11</td>
<td>Uterine artery embolization for refractory PPH treatment</td>
<td>56%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>39%</td>
</tr>
<tr>
<td>Q12</td>
<td>Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>79%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
</tr>
<tr>
<td>Q13</td>
<td>External aortic compression as temporizing measure for definitive PPH care</td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>Q14</td>
<td>Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>76%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
</tr>
<tr>
<td>Q15</td>
<td>Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td>80%</td>
<td>78%</td>
<td>66%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Q16</td>
<td>Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>Q17</td>
<td>Uterine massage for conservative treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td>Q18</td>
<td>Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
</tr>
<tr>
<td>Q19</td>
<td>Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
</tr>
<tr>
<td>Q20</td>
<td>Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>69%</td>
<td>70%</td>
<td>66%</td>
<td>71%</td>
<td>66%</td>
</tr>
</tbody>
</table>

What works best

None of the prerequisites for successful implementation are satisfied

Main barriers to implementation

- Lack of training and dedicated staff to carry out this maneuver
- Overall lack of local awareness & promotion: lack of alignment in national guidelines, poor support from local stakeholders, low inclusion in clinical protocols at facility level
Q14 Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11 Uterine artery embolization for refractory PPH treatment</td>
<td></td>
<td>50%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Q12 Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td></td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td>Q13 External aortic compression as temporizing measure for definitive PPH care</td>
<td></td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>Q14 Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td></td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td>Q15 Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td></td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
<td>72%</td>
</tr>
<tr>
<td>Q16 Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td></td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
<td>70%</td>
</tr>
<tr>
<td>Q17 Uterine massage for conservative treatment of PPH</td>
<td></td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td>Q18 Formal protocols at health facilities for prevention and treatment of PPH</td>
<td></td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
<td>69%</td>
</tr>
<tr>
<td>Q19 Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td></td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
<td>67%</td>
</tr>
<tr>
<td>Q20 Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td></td>
<td>69%</td>
<td>70%</td>
<td>66%</td>
<td>71%</td>
<td>66%</td>
<td>61%</td>
</tr>
</tbody>
</table>

**What works best**

- National guidelines align – each practician has a preference according to his skills (e.g., vessel ligation, others in compressive sutures, some with hysterectomy)
- Stakeholders locally support implementation
- Providers consider these interventions as useful and effective

**Main barriers to implementation – lack of awareness**

- **Not used often** because of lack of training and dedicated staff (esp. at lower level facilities) – only done at referral hospitals by specialists
- Requires well equipped and manned tertiary facilities
Q15 Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum

Score

<table>
<thead>
<tr>
<th>Question</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11 Uterine artery embolization for refractory PPH treatment</td>
<td>50%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>49%</td>
<td>38%</td>
</tr>
<tr>
<td>Q12 Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td>Q13 External aortic compression as temporizing measure for definitive PPH care</td>
<td>61%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>Q14 Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>76%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td>Q15 Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
<td>72%</td>
</tr>
<tr>
<td>Q16 Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
<td>70%</td>
</tr>
<tr>
<td>Q17 Uterine massage for conservative treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td>Q18 Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
<td>69%</td>
</tr>
<tr>
<td>Q19 Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
<td>67%</td>
</tr>
<tr>
<td>Q20 Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>69%</td>
<td>70%</td>
<td>66%</td>
<td>71%</td>
<td>66%</td>
<td>61%</td>
</tr>
</tbody>
</table>

What works best

- National guidelines align and specify how to deliver this intervention
- Stakeholders locally support implementation, which is registered and licensed
- Considered successful, effective & affordable as a low-technology procedure

Main barriers to implementation

- Lack of dedicated staff to carry out this intervention consistently resulting in late diagnoses of PPH, especially in understaffed settings
**Q16 Controlled cord traction is the recommended method for removal of the placenta in caesarean section**

<table>
<thead>
<tr>
<th>Question</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11 Uterine artery embolization for refractory PPH treatment</td>
<td>56%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Q12 Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td>Q13 External aortic compression as temporizing measure for definitive PPH care</td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>Q14 Surgical interventions (lапarotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td>Q15 Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
<td>72%</td>
</tr>
<tr>
<td>Q16 Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
<td>70%</td>
</tr>
<tr>
<td>Q17 Uterine massage for conservative treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>85%</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td>Q18 Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
<td>69%</td>
</tr>
<tr>
<td>Q19 Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
<td>67%</td>
</tr>
<tr>
<td>Q20 Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>69%</td>
<td>70%</td>
<td>66%</td>
<td>71%</td>
<td>66%</td>
<td>61%</td>
</tr>
</tbody>
</table>

**What works best**
- Stakeholders **locally support** implementation
- Considered **successful** and highly **effective**

**Main barriers to implementation – lack of awareness**
- Lack of inclusion in clinical protocols
- Lack of **staff time** for carrying out this intervention, which often results in manual removal of placenta
### Q17 Uterine massage for conservative treatment of PPH

<table>
<thead>
<tr>
<th>Question</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11</td>
<td>50%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Q12</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td>Q13</td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>Q14</td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td>Q15</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
<td>72%</td>
</tr>
<tr>
<td>Q16</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
<td>70%</td>
</tr>
<tr>
<td>Q17</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td>Q18</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
<td>69%</td>
</tr>
<tr>
<td>Q19</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
<td>67%</td>
</tr>
<tr>
<td>Q20</td>
<td>68%</td>
<td>78%</td>
<td>76%</td>
<td>75%</td>
<td>72%</td>
<td>61%</td>
</tr>
</tbody>
</table>

**What works best**

+ National guidelines align and specify how to deliver this intervention
+ Stakeholders locally support implementation, which is registered and licensed
+ Providers consider this intervention as useful and effective, are trained and confident to use it

**Main barriers to implementation**

- No substantial barriers to implementation identified – although understaffing is sometimes mentioned
Q18 Formal protocols at health facilities for prevention and treatment of PPH

<table>
<thead>
<tr>
<th>Q</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11</td>
<td>Uterine artery embolization for refractory PPH treatment</td>
<td>50%</td>
<td>52%</td>
<td>64%</td>
<td>52%</td>
<td>39%</td>
</tr>
<tr>
<td>Q12</td>
<td>Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
</tr>
<tr>
<td>Q13</td>
<td>External aortic compression as temporizing measure for definitive PPH care</td>
<td>53%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>Q14</td>
<td>Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
</tr>
<tr>
<td>Q15</td>
<td>Abdominal uterine tone assessment for early identification of uterine atony for all women postpartum</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Q16</td>
<td>Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>Q17</td>
<td>Uterine massage for conservative treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
</tr>
<tr>
<td>Q18</td>
<td>Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
</tr>
<tr>
<td>Q19</td>
<td>Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
</tr>
<tr>
<td>Q20</td>
<td>Simulations of PPH treatment for pre-service and in-service training programmes</td>
<td>69%</td>
<td>70%</td>
<td>66%</td>
<td>71%</td>
<td>66%</td>
</tr>
</tbody>
</table>

What works best

- National guidelines align and specify how to deliver this intervention
- Stakeholders locally support this
- Providers consider this as useful and effective, are trained and confident to use it

Main barriers to implementation

- Lack of staff for customizing national protocols at the facility level and disseminating them locally
- Supervision could be strengthened
### Q19 Formal protocols for referral of women to a higher level of care for treatment of PPH

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11</td>
<td>Uterine artery embolization for refractory PPH treatment</td>
<td>50%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>39%</td>
</tr>
<tr>
<td>Q12</td>
<td>Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
</tr>
<tr>
<td>Q13</td>
<td>External aortic compression as temporizing measure for definitive PPH care</td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>Q14</td>
<td>Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
</tr>
<tr>
<td>Q15</td>
<td>Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Q16</td>
<td>Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>Q17</td>
<td>Uterine massage for conservative treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
</tr>
<tr>
<td>Q18</td>
<td>Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
</tr>
<tr>
<td>Q19</td>
<td>Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>79%</td>
<td>73%</td>
</tr>
</tbody>
</table>

**What works best**
- National guidelines align and specify how to deliver this intervention
- Stakeholders locally support implementation
- Providers consider this as useful and effective

**Main barriers to implementation – lack of awareness**
- Lack of local clinical protocols integrating referral pathways
- Lack of staff for customizing national protocols at the facility level for disseminating them locally
- Where referral pathways exist, there is lack of confidence in the pathways to ensure a safe transfer and poor availability of transport
Q20 Simulations of PPH treatment for pre-service and in-service training programmes

<table>
<thead>
<tr>
<th>Q11 Uterine artery embolization for refractory PPH treatment</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td>Q12 Bimanual uterine compression as temporizing measure before definitive PPH care</td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td>Q13 External aortic compression as temporizing measure for definitive PPH care</td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>Q14 Surgical interventions (laparotomy with vessel ligation or compressive sutures or hysterectomy) for refractory PPH treatment</td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td>Q15 Abdominal uterine tonus assessment for early identification of uterine atony for all women postpartum</td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
<td>72%</td>
</tr>
<tr>
<td>Q16 Controlled cord traction is the recommended method for removal of the placenta in caesarean section</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
<td>70%</td>
</tr>
<tr>
<td>Q17 Uterine massage for conservative treatment of PPH</td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td>Q18 Formal protocols at health facilities for prevention and treatment of PPH</td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
<td>60%</td>
</tr>
<tr>
<td>Q19 Formal protocols for referral of women to a higher level of care for treatment of PPH</td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Q20 Simulations of PPH treatment for pre-service and in-service training programmes

<table>
<thead>
<tr>
<th>Score</th>
<th>Inclusion in national guidelines</th>
<th>Local support from stakeholders acting as champions</th>
<th>Job aids available at facility level?</th>
<th>Healthcare workers awareness &amp; trust in effectiveness</th>
<th>Training &amp; experience of healthcare workers</th>
<th>Healthcare facilities staffing &amp; equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
<td>52%</td>
<td>44%</td>
<td>52%</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td>72%</td>
<td>69%</td>
<td>71%</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>63%</td>
<td>57%</td>
<td>52%</td>
<td>54%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>70%</td>
<td>74%</td>
<td>68%</td>
<td>75%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td>80%</td>
<td>78%</td>
<td>76%</td>
<td>78%</td>
<td>77%</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>75%</td>
<td>74%</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>87%</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td></td>
<td>80%</td>
<td>79%</td>
<td>76%</td>
<td>79%</td>
<td>75%</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>79%</td>
<td>78%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
<td>67%</td>
</tr>
</tbody>
</table>

What works best

None of the prerequisites for successful implementation are satisfied

Main barriers to implementation

- Rarely implemented because of lack of trainers and specialized simulators outside a few tertiary centers only
- Simulation training not included in clinical protocols at facility level
- Understaffing hinders releasing staff for simulated training

Overall lack of local promotion: lack of alignment in national guidelines, low support from local stakeholders
Implementation | Four inputs will be presented in Plenary session to feed discussions in four dedicated breakout sessions

Four inputs will be addressed in plenary sessions...

- **Country case studies** on Nigeria, Pakistan and Tanzania
- Experience from **global exemplar countries**
- **Perspectives from Ministries of Health** on challenges in implementing what works
- **Survey on barriers to Implementation** for 20 recommended interventions: what works best and what are the main barriers to implementation

... feeding four discussions in breakouts to frame barriers to implementation and brainstorm on solutions

1. **National context** – e.g., Women’s rights & social status, Legislative measures, emergency situations
2. **Programme & Investments** – e.g. PPH guideline, programme development from pilot to scale up, equity and access to care, Investment
3. **Commodities** – e.g., Regulatory, procurement & supply chain, quality, affordability & out of pocket expenses
4. **Service delivery** – e.g., Job aids for guideline implementation, referral pathways between levels of care and community, training staffing, audit & feedback

Focus for this section
### Breakout Format

- **Participants are split into 4 tables** of 7-9 participants
- Each table will focus on one of the 4 key problems allocated to the breakout
- **One lead per table** will report back to the broader breakout group

### Breakout Topic | Table subtopics

1. **National context**
   - Women’s rights & social status
   - Legislative measures
   - Humanitarian/emergency situations
   - National health policy & leadership

2. **Programme and Investment**
   - PPH guideline
   - Programme development from pilot to scale up
   - Equity and access to care
   - Investment

3. **Commodities**
   - Regulatory
   - Procurement & supply chain
   - Quality
   - Affordability & out of pocket expenses

4. **Service delivery**
   - Job aids for guideline implementation
   - Referral pathways between levels of care and community
   - Staffing, Training & Supervision of healthcare providers
   - Audit & feedback and data for QI
Breakout sessions | Discussion will be articulated around 6 steps to frame the barriers to implementation and brainstorm on solutions and next steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Timing</th>
<th>Method Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction of the breakout session - overview of the group work</td>
<td>10 min Full breakout</td>
<td>1-pager per table</td>
</tr>
<tr>
<td>2</td>
<td>Table discussion on pre-identified bottlenecks - Are these the right challenges?</td>
<td>10 min Split per table</td>
<td>1-pager per table</td>
</tr>
<tr>
<td>3</td>
<td>Table discussion on potential solutions – Based on different input discussed in plenary, what could be potential solutions to address these challenges?</td>
<td>30 min Split per table</td>
<td>1-pager per table</td>
</tr>
<tr>
<td>4</td>
<td>Table discussion on next steps – What would be recommended next steps towards implementing these solutions?</td>
<td>20 min Split per table</td>
<td>1-pager per table</td>
</tr>
<tr>
<td>5</td>
<td>Each table lead to report to broader breakout group with feedback from other participants</td>
<td>40 min Full breakout</td>
<td>1-pager per table</td>
</tr>
<tr>
<td>6</td>
<td>Synthesis – consolidate inputs from 4 tables in a 1-pager to be shared in the wrap up plenary session</td>
<td>10 min Full breakout</td>
<td>1-pager per table</td>
</tr>
</tbody>
</table>
Postpartum Haemorrhage Summit

Priority bottlenecks to be addressed by the global community

Caitlin R. Williams (IECS)

8 March 2023
During this session we will get to a Top 5 of categories of implementation barriers that are most critical for global action.
## 16 categories of implementation barriers

<table>
<thead>
<tr>
<th>Breakout topic</th>
<th>Category of implementation barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. National context</strong></td>
<td></td>
</tr>
<tr>
<td>• A1. Women’s rights and social status</td>
<td>(e.g., lack of education, low social status, constrained women’s choices around pregnancy and childbirth)</td>
</tr>
<tr>
<td>• A2. Legislative &amp; non-health policy measures</td>
<td>(e.g., lack of laws protecting women from gender-based violence, early marriages, women’s political power)</td>
</tr>
<tr>
<td>• A3. Emergency situations</td>
<td>(e.g., conflict or humanitarian setting, COVID19)</td>
</tr>
<tr>
<td>• A4. National health policy &amp; leadership</td>
<td>(e.g., health sector governance, leadership skills, health policies, policy advocacy)</td>
</tr>
<tr>
<td><strong>B. Programme &amp; Investment</strong></td>
<td></td>
</tr>
<tr>
<td>• B1. Technical PPH guidelines</td>
<td>(e.g., guidelines out of date, requiring local data, not linked to subnational implementation)</td>
</tr>
<tr>
<td>• B2. Programme Development from pilot to scale up</td>
<td>(e.g., no handover/exit strategy, vertical programmes)</td>
</tr>
<tr>
<td>• B3. Equity and access to care</td>
<td>(e.g., persistent disparities, limited data, lack of access to care for vulnerable and marginalized groups, lack of engagement with the private sector)</td>
</tr>
<tr>
<td>• B4: Investment</td>
<td>(stagnant government expenditure, lack of sustainability of externally funded programmes)</td>
</tr>
<tr>
<td><strong>C. Commodities</strong></td>
<td></td>
</tr>
<tr>
<td>• C1. Regulatory</td>
<td>(e.g., poor post-marketing surveillance, non-harmonized regulatory pathways, complex or inexistent regulatory pathways for devices)</td>
</tr>
<tr>
<td>• C2. Procurement &amp; supply chain</td>
<td>(e.g., lack of availability of blood or blood products, weak procurement systems in lower-level facilities, lack of communication between hospital management and healthcare providers in terms of stockouts)</td>
</tr>
<tr>
<td>• C3. Quality</td>
<td>(e.g., poor quality products, cold chain difficult to maintain, little incentive for manufacturers to obtain WHO PQ or SRA)</td>
</tr>
<tr>
<td>• C4. Affordability and out of pocket expenditures</td>
<td>(e.g., lack of free delivery care, unaffordable private sector when the only provider available, certain commodities not provided by government)</td>
</tr>
<tr>
<td><strong>D. Service delivery</strong></td>
<td></td>
</tr>
<tr>
<td>• D1. Job aids for guideline implementation</td>
<td>(e.g., lack of expertise for guideline adaptation to a clinical protocols; clinical protocols not available, accessible, usable or appropriate)</td>
</tr>
<tr>
<td>• D2. Referral pathways between levels of care and community</td>
<td>(e.g., unclear when and where to go/refer for delivery or emergency (women and providers), transport issues, referral pathways not used effectively)</td>
</tr>
<tr>
<td>• D3. Staffing, training &amp; supervision of healthcare providers</td>
<td>(e.g., acquiring and maintaining skills, roles/status of midwives and nurses, HRH in remote areas)</td>
</tr>
<tr>
<td>• D4. Audit &amp; feedback</td>
<td>(e.g., private providers not regulated, accountable; limited local capacity to use data for decision-making)</td>
</tr>
</tbody>
</table>
Topics to frame the advocacy conversation

- Overview of the PPH advocacy landscape
  - Key organizations and initiatives
  - Limitations of current ecosystem and critical gaps
- Benchmark of other health sector ecosystems
- Case studies: success stories of targeted advocacy efforts
- Thought starters on potential interventions
Many global actors are involved in PPH advocacy effort

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Partnership for Maternal, Newborn &amp; Child Health</strong></td>
<td>Provides a platform for organizations to align objectives, strategies and resources, and agree on interventions to improve maternal, newborn, child and adolescent health</td>
</tr>
<tr>
<td><strong>Maternal Health Task Force</strong></td>
<td>Learning network that strives to create a strong, well-informed and collaborative community of individuals focused on ending preventable maternal mortality and morbidity worldwide</td>
</tr>
<tr>
<td><strong>Healthy Newborn Network</strong></td>
<td>Online community of maternal health and newborn health professionals dedicated to addressing critical knowledge gaps in newborn health</td>
</tr>
<tr>
<td><strong>MCSP PPH Community of Practice</strong></td>
<td>Convenes maternal health stakeholders to share PPH evidence, new initiative, and research</td>
</tr>
<tr>
<td><strong>Quality of Care Network (formerly Quality, Equity, Dignity Network)</strong></td>
<td>Provides a platform for countries to ensure that quality of care becomes an integral part of health care delivery; facilitates intercountry learning, knowledge sharing, and generation of local evidence and best practices.</td>
</tr>
<tr>
<td><strong>Every Women Every Child</strong></td>
<td>Aims to intensify national &amp; inter-national commitment and action (financing, technical assistance, implementation) by governments, the UN, multilaterals, the private sector and civil society. Provides resources for knowledge and advocacy.</td>
</tr>
<tr>
<td><strong>International Federation of Gynecology and Obstetrics (FIGO)</strong></td>
<td>Convenes global obstetrical and gynecological associations to provide guidance and evidence on key maternal health issues, develops advocacy materials, and has select implementation programs</td>
</tr>
<tr>
<td><strong>Maternal Health Supplies Caucus</strong></td>
<td>Provides forum for maternal health and family planning communities to come together, forge a common language for understanding maternal health supply-related challenges, and draw on existing approaches to address commodity bottlenecks</td>
</tr>
<tr>
<td><strong>Management Science for Health</strong></td>
<td>Advisory organization that provides governments, health organizations, and the private sector with the strategies, tools, and management support to effectively and efficiently deliver high-functioning health systems</td>
</tr>
</tbody>
</table>
In addition, numerous programmes at country level contribute to the advocacy effort and require further coordination.

<table>
<thead>
<tr>
<th>Country</th>
<th>Programme/Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>The Ethiopian government developed the National Health Care Quality Strategy to focus on preventing and managing PPH</td>
</tr>
<tr>
<td>India</td>
<td>The Indian government deployed the Janani Shishu Suraksha Karyakram (JSSK) scheme to provide free maternal and child health services</td>
</tr>
<tr>
<td>Kenya</td>
<td>As part of its Universal Health Coverage agenda the Kenyan government developed initiatives to prevent and manage PPH</td>
</tr>
<tr>
<td>Nigeria</td>
<td>The Nigerian Government launched the &quot;Midwives Service Scheme&quot; to address the shortage of skilled birth attendants in rural areas</td>
</tr>
<tr>
<td>Philippines</td>
<td>The Philippines government deployed the &quot;No Home Birth Policy&quot; to promote safer childbirth</td>
</tr>
<tr>
<td>Tanzania</td>
<td>CDC rolled out Maternal and Reproductive Health Projects to reduce maternal deaths and improve maternal and newborn health in Tanzania’s remote northwestern Kigoma Region</td>
</tr>
</tbody>
</table>
Yet, there is limited synchronization between initiatives across the PPH landscape

Currently no global champion to lead and drive PPH efforts
Potential for greater collaboration among the stakeholders, at global, regional and local levels

Limited and fragmented funding
Compared to other health areas (e.g., malaria, TB, HIV), funding for PPH is sparser & more fragmented

Variety of priorities and approaches across organizations
While addressing PPH remains a top maternal health initiative, approaches to do so differ across organizations

Initiatives led from the Global North
Limited inclusion of perspectives of in-country voices in current fora

We need global thought leadership - a group to disseminate agreed-upon catalytic solutions (frameworks, principles) and engage key stakeholders to unify orgs

We need a common vision among funders, who are driving fragmentation in approaches to prioritize, as money drives most activities

We do not have a unified research agenda – we need people to come together

In-country players must lead these discussions; lack of their participation may impede ability for global players to respond to their needs
When we talk about advocacy, we must think through different levels of advocacy for different target audiences:

- **Women & general population**: Increasing patients' awareness on PPH risk and appropriate behavior to prevent it (e.g., encouraging hospital births vs. home births)
- **Healthcare workers**: Training healthcare workers to prevent and manage PPH effectively, including improving teamwork, communication and leadership
- **Ministries of Health/governments**: Driving country-led discussions and effort to tailor global policies to on-the-ground challenges and unlock real and effective change
- **International community**: Rallying the key international health stakeholders - e.g., global funders, implementing partners, multilateral organizations - around common priorities and a shared agenda
## Critical advocacy gaps in the ecosystem hinders the response towards PPH

### Key stakeholders

<table>
<thead>
<tr>
<th>Women &amp; general population</th>
<th>Critical gaps that could be addressed with strengthened advocacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insufficient general awareness on PPH risk</td>
</tr>
<tr>
<td></td>
<td>Insufficient awareness of standard of care and expectation of good management</td>
</tr>
<tr>
<td>Healthcare workers</td>
<td>Limited receptiveness of national societies (i.e., HCWs associations) to new guidelines</td>
</tr>
<tr>
<td></td>
<td>Lack of on-the-job and continued trainings</td>
</tr>
<tr>
<td>Ministries of Health/ governments</td>
<td>Insufficient data collection – e.g., on burden, patient journey data</td>
</tr>
<tr>
<td></td>
<td>Poor quality and availability of medicines – e.g., substandard and falsified drugs, poor storage conditions</td>
</tr>
<tr>
<td></td>
<td>Limited collaboration between global and national levels resulting in inefficiencies in the adaptation process of national guidelines</td>
</tr>
<tr>
<td></td>
<td>Insufficient political will to foster broad engagement and ensure sustainable change</td>
</tr>
<tr>
<td></td>
<td>Lack of multisectoral engagement (e.g., coordination between MoH departments)</td>
</tr>
<tr>
<td>International community</td>
<td>Fragmented ecosystem– e.g., lack of unified mechanism to develop new products, lack of common indicators</td>
</tr>
<tr>
<td></td>
<td>Major funding gaps</td>
</tr>
</tbody>
</table>
Compared to other health areas, PPH ecosystem lacks leadership, funding consolidation, and vertical delivery platform

<table>
<thead>
<tr>
<th>Family Planning</th>
<th>HIV</th>
<th>Vaccine</th>
<th>TB</th>
<th>Malaria</th>
<th>NTDs(^1)</th>
<th>Nutrition</th>
<th>Health Systems</th>
<th>PPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global leader / funding aggregator</td>
<td><img src="image1" alt="G1" /></td>
<td><img src="image2" alt="UNFPA" /></td>
<td><img src="image3" alt="The Global Fund" /></td>
<td><img src="image4" alt="Gavi" /></td>
<td><img src="image5" alt="The Global Fund" /></td>
<td><img src="image6" alt="USAID" /></td>
<td><img src="image7" alt="President's Emergency Fund" /></td>
<td><img src="image8" alt="Maternal Health" /></td>
</tr>
<tr>
<td>Coordinating / Collaborating orgs</td>
<td><img src="image9" alt="FP2020" /></td>
<td><img src="image10" alt="UNAIDS" /></td>
<td><img src="image11" alt="The END TB Strategy" /></td>
<td><img src="image12" alt="CTVD" /></td>
<td><img src="image13" alt="UNITING.COMBAT" /></td>
<td><img src="image14" alt="Scaling Up Nutrition" /></td>
<td><img src="image15" alt="Malawi's Ministry of Health" /></td>
<td><img src="image16" alt="CBM" /></td>
</tr>
<tr>
<td>Convenings</td>
<td><img src="image17" alt="International Conference on Family Planning" /></td>
<td><img src="image18" alt="IAS" /></td>
<td><img src="image19" alt="Decade Vaccines" /></td>
<td><img src="image20" alt="Global Forum" /></td>
<td><img src="image21" alt="N4G" /></td>
<td><img src="image22" alt="hsa" /></td>
<td></td>
<td>NEW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of vertical delivery platform</th>
<th>Moderate</th>
<th>High</th>
<th>High</th>
<th>Moderate</th>
<th>Moderate</th>
<th>Moderate</th>
<th>Low</th>
<th>Low</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of funding consolidation</td>
<td>Moderate</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Level of leadership / key champions</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Key learnings</td>
<td>Key leadership (e.g., Melinda Gates) &amp; coordination (FP2020) has driven community together</td>
<td>Key stakeholders came together to sign 2012 London Declaration to align on set goals</td>
<td>SUN Movement offers multi-stakeholder, country-led platform for thought leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To be defined post-Summit</td>
</tr>
</tbody>
</table>

1. NTDs = Neglected Tropical Diseases
Case study | Organizing Overview of Task Force on Child Survival

Value Proposition & Mandate

- **Goal:** Reach child immunization coverage rate of 80% globally
- **Collaborative model** to mobilize resources and expertise, identify synergies, and build the consensus to address health issues
- **Facilitated work of member agencies** through improved processes, communication, and problem solving

Outcomes

- **Immunization coverage** climbed from ~15% of the world’s children for some vaccines to 80% of the world’s children for at least one vaccine by 1990
- **Mobilized support for child health** and aligned key partners on primary goals to improve Under-5 mortality

Key success factors

- **Clear, specific target / definition of success**
- **Strong commitment from the heads of the top organizations**
- **Limited number of member organizations, with clear roles, a defined secretariat, and decision rights**
- **Regular communication, with meetings centered around solving real problems**
- **Focus on collaboration & facilitation as a "neutral catalyst", rather than on individual interests**
Case study | Scaling Up Nutrition (SUN) Movement profile

Value Proposition & Mandate

- Goal: By 2030, have a world free from malnutrition in all its forms
- Local government-led collaborative model
- Role is to organize stakeholders, mobilize resources & political will, & align priorities around strategy / roadmap

Outcomes

- Acts as a catalyst for change, broaden commitments and amplify its members’ actions and coherence (e.g., experience sharing)
- Improves in-country capabilities, through best practice sharing and technical assistance
- Hosts annual global gathering to bring all stakeholders together, share progress, learn best practices, and discuss path forward

Key success factors

- Focus on political pressure & change (beyond science)
- Country leadership (and collaboration & competition)
- Broad convening power globally & locally
- Small, but efficient Secretariat
- Clear metrics, accountability measures, and goals
**Case studies | Illustration of other diseases initiatives to raise awareness among the general public**

<table>
<thead>
<tr>
<th>Event – Telethon</th>
<th>Ambassadors – Elton John AIDS Foundation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background</strong></td>
<td>Elton John AIDS Foundation was established in 1992 and is one of the leading independent AIDS organization in the world</td>
</tr>
<tr>
<td>Telethon was created in 1966 in the US and has progressively been adapted in different countries (France, UK, Canada, Chile, Australia, etc.)</td>
<td></td>
</tr>
<tr>
<td><strong>Objective</strong></td>
<td>Overcoming the stigma and neglect hindering the fight against AIDS through advocacy, research and breaking down myths, with the influence of the founder Elton John and the support of donors and partnerships</td>
</tr>
<tr>
<td>Leveraging television as a medium to bolster awareness and raise income to fund programs, research, procurement of equipment on rare genetic conditions</td>
<td></td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Donations from the general public</td>
</tr>
<tr>
<td>Televised fundraising that lasts for many hours, and even days</td>
<td>Funding event each year, gathering celebrities to raise money against AIDS and spread awareness on the disease</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>The foundation has raised more than $525 million for HIV/AIDS grants globally supported about 3,000 projects to end AIDS in 90 countries</td>
</tr>
<tr>
<td>Over the years, Telethon events have helped raised billions of dollars – e.g., $≈2bn in the US (MDA Telethon), $&gt;2.4Bn in France, etc.</td>
<td></td>
</tr>
</tbody>
</table>

Source: MDA website, [The Rocket Fund powered by Elton John AIDS Foundation](https://www.eltongost.org/)
## What advocacy interventions could address PPH advocacy gaps?

<table>
<thead>
<tr>
<th>Target audience</th>
<th>Potential solutions—Illustrative</th>
</tr>
</thead>
</table>
| **Women & general population**  | Leverage diverse communication channels to raise awareness among the population, incl.  
   - Leverage one-off activities—e.g., webinars, forums, stories publications  
   - Develop recurrent activities—e.g., dedicated PPH week or day, ambassadors, national/international campaigns |
| **Healthcare workers**           | • Organize regular symposiums with professional associations to discuss latest recommendations and evidence  
   • Support creation of care pathways, toolkits, algorithms to foster adherence to recommendations  
   • Create advocacy groups (OBGYN, midwifery associations) to foster change |
| **Ministries of Health/Governments** | • Define and align on joint PPH reporting metrics (e.g., burden, use of uterotonics) and create/maintain global database  
   • Create incentives for the procurement of quality assured medicines and devices and demonstrate cost effectiveness of QA products  
   • Engage with CSOs to accelerate push to update national guidelines  
   • Build capacity of leaders to turn them into advocates, identify “champions” of advocacy effort  
   • Implement a national day |
| **International Community**      | • Identify leading entity, with a defined mandate from global community, buy-in from key stakeholders, and sufficient financial commitment  
   • Build compelling investment case to mobilize additional funding |
Panel: discussion and consensus on advocacy priorities
Discussion and consensus on advocacy priorities

**Moderator**

Angela NGUKU  
Founder and Executive Director  
White Ribbon Alliance  
Kenya

**Panelists**

Daisy RUTO  
Technical Director  
Jhpiego,  
Project Director  
Smiles for Mothers Project  
Kenya

Sara Rushwan  
Project Manager  
Concept Foundation  
Switzerland

Joyce NGANGA  
Policy Advisor  
WACI-Health  
Kenya

Aseema MAHUNTA  
Senior Programme Officer at Centre for Catalyzing Change  
White Ribbon Alliance  
India

Andrew STOREY  
Senior Director at Maternal and Newborn Health  
Clinton Health Access Initiative  
United Kingdom
Postpartum Haemorrhage Summit

Introduction to roadmap – key elements to include
Ioannis Gallos (WHO) & Sarah Chamberlain (BCG)

9 March 2023
What is a roadmap?
And what it is not

What it is

A high-level plan with the major milestones that need to be hit in order to achieve planned impact

What it is not

A detailed project plan with a list of dozens of tasks and milestones that outlines everything that needs to happen with very specific details

Six key ingredients to support a Roadmap aligned upon goals we are trying to achieve

- Alignment on goal(s) we aim to achieve
- A timeline with major milestones and sequencing of activities
- Interdependencies between topics
- Roles & responsibilities
- High level funding requirements
- Success measurement
Why will a roadmap be critical

**Align the field** around key priorities and actions required to meet shared goals and objectives, reflecting input from the summit.

**Focus work** on key activities to remove duplication of efforts in the PPH space.

**Engage key stakeholders** (researchers, industry experts, implementers, donors) to advance PPH work across countries.
To course correct and achieve 2030 goals & targets, our roadmap efforts need to start now.

**What do we need to start now?**

- **Research**
  - Answer *priority research questions*

- **Guidelines**
  - Update / develop *high priority global recommendations*
  - Update / develop *national recommendations tailored to local context*
  - Translate guidance into *clinical protocols*

- **Implementation & Advocacy**
  - Address priority implementation *barriers*

**What can we start once a prerequisite is met?**

- **Research**
  - Update / develop *high priority global recommendations*

- **Guidelines**
  - Update / develop *national recommendations tailored to local context*
  - Translate guidance into *clinical protocols*

**What goals are we seeking to achieve?**

- All *priority questions of the research agenda have been answered*
- Global guidelines are aligned and *reflect the latest evidence available*, and are contextualized into *national guidelines, with clear clinical protocols*
- Priority *barriers have been removed*
# Illustrative output | High level milestones to course correct and achieve SDG 2030 targets

<table>
<thead>
<tr>
<th>Objective</th>
<th>Q2 2023</th>
<th>Q3 2023</th>
<th>Q4 2023</th>
<th>S1 2024</th>
<th>S2 2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross cutting activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alignment on Roles &amp; Responsibilities of key stakeholders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Announcement of funding mobilized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd PPH Summit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All enablers to PPH efforts are fully in place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publication of joint research agenda</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st batch of research results to inform potential WHO recommendations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd batch of research results to inform potential WHO recommendations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All priority questions of the research agenda have been answered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidelines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st wave of joint global guidelines (actioning existing evidence)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global guidelines contextualized into national guidelines and clinical protocols</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Update of joint global guidelines (actioning new evidence)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translation into national guidelines and protocols</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Update of joint global guidelines updates (actioning new evidence)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global guidelines reflect latest evidence available, and are cascaded into national guidelines, with clear clinical protocols</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priority implementation bottle-necks and hurdles, incl. context-specific ones, have been removed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launch of Initiative A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launch of Measurement platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launch of Initiative B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successful engagement of all target audiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advocacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launch of Initiative A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launch of Initiative B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launch of Initiative C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Milestones**
- **Interdependencies**
Who will do it? The roles of the different stakeholders to support PPH objectives

**MoH**
- Tailor global priority agenda to local context
- Update guidelines
- Act as a connector

**Industry & Innovators**
- Focus innovation efforts on priority gaps
- Generate required evidence to support policy update

**WHO & other normative org.**
- Develop new framework for developing PPH recommendations
- Update & align guidelines
- Support stakeholders in implementing guidelines

**Funding agencies & donors**
- Ensure adequate financing to the global priority agenda
- Provide technical support to initiatives at all levels

**Academia & research**
- Focus efforts on priority research gaps
- Support innovators and other partners on effective trial design

**Civil Society Organizations**
- Support targeted advocacy efforts
- Build capacity of leaders
- Foster political will and community engagement

**Care providers**
- Implement and adhere to guidelines
- Proactively anticipate implementation barriers (e.g., stockouts, storage conditions)

**Women**
- Share learnings from experience
- Participate in solution design
- Advocate to raise awareness

Support advocacy effort to raise awareness about PPH and foster engagement from all stakeholders
Postpartum Haemorrhage Summit

Synthesized view of key milestones and critical activities to build momentum

Ioannis Gallos (WHO), Caitlin Williams (IECS)

10 March 2023
Research
Research | Additional takeaways from the Summit discussions

**Finalization of the prioritization process**
- Flexibility to reframe priority questions (e.g., broader wording)
- Need to conduct systematic reviews before primary research
- Near-term priority focused on where mortality is happening in remote populations, with particular focus on first-aid
- Possibility to set up a research network for PPH (e.g., WHO multi-country platform trials, as done for COVID trials, MAGPIE trial)
- No de-prioritization of questions that have not made to the Top5, rather need to consider them as "supplementary priority questions"

**Funding assessment**
- Acknowledgment that some priority questions are already funded, funding gap assessment to be further refine

**Additional input to consider**
- Get broader feedback from clients/CSOs on the research agenda

**Communication improvement areas on**
- Impact pathway, providing more transparency on what evidence is required to shift guidance, and recommendation - on drugs and devices
- Clinical needs for innovators
### Key milestones

- **May 2023** - IMNHC, Cape Town Summit: Research Agenda ready for launch
- **Q1 2024**: Announcement of funding
- **Q1 2026**: 1st batch of research results to inform WHO recommendations

### Immediate next steps

<table>
<thead>
<tr>
<th>What needs to happen</th>
<th>By when?</th>
<th>By whom?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refine the framing of priority questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct review of ongoing research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design ideal research</td>
<td>May 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Clarify and communicate on pathway to impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assess funding gaps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialize joint research agenda</td>
<td>May 2023</td>
<td>WHO / Donors</td>
</tr>
<tr>
<td>Conduct call for proposals for researchers / innovators</td>
<td>Q1 2024</td>
<td>WHO / Donors</td>
</tr>
<tr>
<td>Analyze first batch of research results to inform WHO recommendations</td>
<td>Q1 2026</td>
<td>WHO</td>
</tr>
</tbody>
</table>
Guidelines
Priority for updates/new recommendations have been highlighted:

- **Risk factors/Contributors**
  - Anaemia
  - Placenta praevia/accreta
  - Induction of labour
  - Augmentation of labour
  - Retained placenta
  - Poor quality uterotonic
  - Episiotomy
  - Delay in diagnosis
  - Poor quality uterotonic
  - Lack of access to theater
  - No access to TXA
  - Lack of referral or transport

- **Strategies**
  - Prevention
  - Diagnosis
  - First line treatment
  - Refractory treatment
  - Post PPH supportive care

- **WHO recommendations**
  - No rec
  - N=19
  - N=2
  - N=5
  - No rec
  - N=7
  - N=4

- **Health systems**
  - Cord traction
  - Uterotonics
  - Fluids
  - Massage
  - TXA
  - Supportive care
  - Surgery
  - Temporizing
  - Embolization
  - Protocols
  - Referrals
  - Simulation
  - Monitoring

- **Priority areas**
Key milestones

**Q1 2024**: Publication of 1\textsuperscript{st} wave of WHO guidelines updates (actioning existing evidence)

**Q2 2024**: Integrate WHO guidelines updates on IMPAC and contextualize into 20 high burden countries guidelines

2026: 2nd wave of joint global guidelines (actioning new evidence)

2030: 3rd wave of joint global guidelines updates (actioning new evidence)

Immediate next steps

<table>
<thead>
<tr>
<th>What needs to happen</th>
<th>By when?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Establish</strong> Task force / Steering Committee comprising representatives from WHO, FIGO, ICM and enable national societies and high burden to opt in</td>
<td>Next week</td>
</tr>
<tr>
<td><strong>Agreement</strong> on issuing joint recommendations</td>
<td>End of March</td>
</tr>
<tr>
<td><strong>Scoping of core set of recommendations</strong>, identification of critical gaps(^1), send out of results to other organizations</td>
<td>Start/end in April 2023</td>
</tr>
<tr>
<td>Review of the method for guidelines development</td>
<td></td>
</tr>
<tr>
<td><strong>Evidence base updates</strong></td>
<td>Ends in October 2023</td>
</tr>
<tr>
<td><strong>Synthesis</strong> - Evidence summaries</td>
<td>November 2023</td>
</tr>
<tr>
<td><strong>Consultation</strong> on 1\textsuperscript{st} wave of guidelines updates</td>
<td>November 2023</td>
</tr>
<tr>
<td><strong>Publication</strong> of 1\textsuperscript{st} wave of guidelines updates</td>
<td>Q1 2024</td>
</tr>
</tbody>
</table>

1. e.g., referral criteria, anemia, blood transfusion
Supportive Care

Published on Dec 14, 2022 at 9:46 am

Ensure that the woman has a companion of her choice and, where possible, the same health care provider throughout labour and childbirth: 1 https://srhr.org/rhl/resources/video/labour-companionship-every-womans-choice

(Link to PM handbook on birth companion and measures to ensure companionship during labour)

- Encourage the woman to have support from a person of her choice throughout labour and childbirth. Supportive companionship can enable a woman to face fear and pain, while reducing loneliness and distress, and can promote positive physiologic birth outcomes.

- Where possible, encourage companions to take an active role in her care.

- Encourage the companion to give support to the woman during labour and childbirth (e.g. by rubbing her back, wiping her brow with a wet cloth, helping her move about).

- During the second stage, position the companion at the top of the bed to allow the companion to focus on caring for the woman’s emotional needs.

Ensure good communication and support by staff:

(Link to communications handbook)

- Explain all procedures, seek permission and discuss findings with the woman.

- Provide a supportive, encouraging atmosphere for birth that is respectful of the woman’s wishes.
Implementation
<table>
<thead>
<tr>
<th>Topic</th>
<th>Prioritized category of bottleneck</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Context</td>
<td><strong>National health policy &amp; leadership</strong> (e.g., health sector governance, leadership skills, health policies, policy advocacy)</td>
</tr>
<tr>
<td>Programme &amp; Investment</td>
<td><strong>Equity and access to care</strong> (e.g., persistent disparities, limited data, lack of access to care for vulnerable and marginalized groups, lack of engagement with the private sector)</td>
</tr>
<tr>
<td>National Context</td>
<td><strong>Women's rights and social status</strong> (e.g., lack of education, low social status, constrained women’s choices around pregnancy and childbirth)</td>
</tr>
<tr>
<td>Service Delivery</td>
<td><strong>Staffing, training &amp; supervision of healthcare providers</strong> (e.g., acquiring and maintaining skills, roles/status of midwives and nurses, HRH in remote areas)</td>
</tr>
<tr>
<td>Commodity</td>
<td><strong>Availability &amp; supply chain</strong> (e.g., lack of availability of blood or blood products, weak procurement systems in lower-level facilities, lack of communication between hospital management and healthcare providers in terms of stockouts)</td>
</tr>
</tbody>
</table>

5 prioritized categories of bottlenecks to focus global efforts on
### Key milestones

- **Q3 2023:** Launch of “quick win” initiatives*
- **Q4 2023:** End of scoping exercise for longer-term solutions
- **2025:** Launch of first-wave of longer-term solutions
- **2027:** Launch of second-wave of longer-term solutions

### Immediate next steps

<table>
<thead>
<tr>
<th>Topic</th>
<th>Immediate next step</th>
<th>Date</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>National health policy &amp; leadership</td>
<td>Draft first version of framework</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Framework on PPH*</td>
<td>Draft first version of framework</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Clear set of limited PPH indicators</td>
<td>Map existing indicators collected by countries</td>
<td>Q3 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>PPH targets (e.g., 90, 90, 90)</td>
<td>Develop options for end points to be targeted &amp; measured</td>
<td>Q3 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Adoption and adaptation of PPH guidelines*</td>
<td>Translate PPH guidelines in Arabic</td>
<td>Q2 2023</td>
<td>EMRO</td>
</tr>
<tr>
<td>Equity and access to care</td>
<td>Draft first proposal on common set of stratifiers</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Guidance on how to disaggregate data for</td>
<td>Draft first proposal on common set of stratifiers</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>easier comparison across settings</td>
<td>Draft first proposal on common set of stratifiers</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Women’s rights &amp; social status</td>
<td>Propose draft statement to STAGE</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Clarify global guidance on role of midwives</td>
<td>Propose draft statement to STAGE</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Staffing, Training &amp; Supervision of healthcare providers</td>
<td>Map existing pools of funding for technical assistance</td>
<td>Q4 2023</td>
<td>TBD</td>
</tr>
<tr>
<td>Capacity building to translate global guidance into practice</td>
<td>Map existing pools of funding for technical assistance</td>
<td>Q4 2023</td>
<td>TBD</td>
</tr>
<tr>
<td>Procurement &amp; Supply Chain</td>
<td>Scope potential solutions (e.g., Global Fund mandate expansion, UNFPA/GFF)</td>
<td>Q4 2023</td>
<td>UNFPA? GFF?</td>
</tr>
<tr>
<td>International funding for procurement of</td>
<td>Scope potential solutions (e.g., Global Fund mandate expansion, UNFPA/GFF)</td>
<td>Q4 2023</td>
<td>UNFPA? GFF?</td>
</tr>
<tr>
<td>quality assured EML drugs (incl. PPH)</td>
<td>Scope potential solutions (e.g., Global Fund mandate expansion, UNFPA/GFF)</td>
<td>Q4 2023</td>
<td>UNFPA? GFF?</td>
</tr>
<tr>
<td>Global supply chain guidance on quality</td>
<td>Map existing guidance</td>
<td>Q3 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>procurement of devices and blood products</td>
<td>Map existing guidance</td>
<td>Q3 2023</td>
<td>WHO</td>
</tr>
</tbody>
</table>
Advocacy
<table>
<thead>
<tr>
<th>Topic</th>
<th>Immediate next step</th>
<th>Date</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create global branding strategy for reducing maternal mortality due to PPH and global advocacy framework</td>
<td>Set up working group, responsible for strategy and framework creation</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Organize global PPH Day (incl. townhall in Africa)</td>
<td>Select targeted date for annual PPH Day</td>
<td>Q2 2023</td>
<td>WHO</td>
</tr>
<tr>
<td>Create advocacy framework for regional and national level (incl. country commitments, funding increase)</td>
<td>n/a – development of regional &amp; local framework will start when global framework finalized</td>
<td>n/a</td>
<td>WHO with local entities</td>
</tr>
</tbody>
</table>
## Roadmap | High level milestones to course correct and achieve SDG 2030 targets

<table>
<thead>
<tr>
<th>Objective</th>
<th>Q2 2023</th>
<th>Q3 2023</th>
<th>Q4 2023</th>
<th>S1 2024</th>
<th>S2 2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>IMNHC Summit - Launch of joint research agenda</td>
<td>Announcement of funding mobilized</td>
<td>1st batch of research results to inform potential WHO recommendations</td>
<td>2nd batch of research results to inform potential WHO recommendations</td>
<td>All priority questions of the research agenda have been answered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidelines</td>
<td>1st wave of joint global guidelines (actioning existing evidence)</td>
<td>Integration of WHO guidelines updates on IMPAC, followed by contextualization into 20 high burden countries national guidelines, and further translation into clinical protocols</td>
<td>2nd wave of joint global guidelines, followed by contextualization into national guidelines, and further translation into clinical protocols</td>
<td>3rd wave of joint global guidelines, followed by contextualization into national guidelines, and further translation into clinical protocols</td>
<td>Global guidelines reflect latest evidence available, and are cascaded into national guidelines, with clear clinical protocols</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation</td>
<td>Launch of quick End of scoping exercise</td>
<td>Launch of first-wave of longer-term solutions</td>
<td>Launch of second-wave of longer-term solutions</td>
<td>Priority implementation bottlenecks and hurdles, incl. context-specific ones, have been removed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advocacy</td>
<td>Global branding strategy and advocacy framework</td>
<td>1st Global PPH day</td>
<td>Regional and local advocacy framework</td>
<td>Successful engagement of all target audiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Milestones**
- IMNHC Summit - Launch of joint research agenda
- Announcement of funding mobilized
- 1st batch of research results to inform potential WHO recommendations
- 2nd batch of research results to inform potential WHO recommendations
- 1st wave of joint global guidelines (actioning existing evidence)
- Integration of WHO guidelines updates on IMPAC, followed by contextualization into 20 high burden countries national guidelines, and further translation into clinical protocols
- 2nd wave of joint global guidelines, followed by contextualization into national guidelines, and further translation into clinical protocols
- 3rd wave of joint global guidelines, followed by contextualization into national guidelines, and further translation into clinical protocols
Panel discussion: existing and future commitment & pledges for support
Panel discussion with donors on existing and future commitment & pledges for support

**Moderator**

Sabaratnam Arulkumaran  
Emeritus Professor  
Department of Obstetrics and Gynaecology  
St George's University of London  
United Kingdom

Jeff Smith  
Deputy Director  
Maternal, Newborn and Child Health  
Bill and Melinda Gates Foundation (BMGF)  
United States

Jill Jones  
Head of Global Health Strategy  
MRC UK  
United Kingdom

Mary-Ann Etiebet  
Lead of MSD for Mothers  
Assistant Vice President  
Health Equity  
Merck & Co. Inc.  
United States

Robyn Churchill  
Maternal Health Team Lead  
Maternal Child Health and Nutrition  
USAID Bureau for Global Health  
United States

Romane Théoleyre  
Programme Manager  
Unitaid  
Switzerland

Aparna Kamath  
Portfolio Manager  
Maternal and Newborn Health  
Grand Challenges Canada
Panel discussion with Ministries of Health on existing and future commitment & pledges for support

Moderator

Karima Gholbzouri
Regional Adviser
Sexual and Reproductive Health and Research
World Health Organization
Regional Office for the Eastern Mediterranean (EMRO)
Egypt

Panelists

Norbert-Richard Ngbale
Professor of Gynecology-Obstetrics
General Treasurer of SAGO Ministry of Health and Population
Central African Republic

Etenesh Gebreyohannes
Senior Maternal Health Program Expert
Maternal, Child and Adolescent Health Services Lead Executive Office
Ministry of Health
Ethiopia

Anupama Prasad
Deputy Commissioner Maternal Health
Ministry of Health and Family Welfare
Govt. of India
India

Hadeel Masri
Head of Women’s Health & Development Unit
Ministry of Health
Palestine

Phineas Ferdinand Sospeter
Head of Safe Motherhood Program
Ministry of Health
Tanzania

Elhadji Thierno Mbengue
Ministry of Health
Senegal

Paul OYERE Moke
Director General, Direction Generale de la Population, République du Congo
A Call to Action publicly outlines the **rationale** for change, **evidence** that things can change and **what is required** of different stakeholders to achieve this. It provides a foundation for **public commitments** and **jointly coordinated efforts**.

Publication of a Call to Action at conclusion of the PPH summit can **draw** the attention of stakeholders to the **critical needs** we have identified. It will **motivate and guide commitments** and **increase public accountability** to improve PPH outcomes.
Calls-to-action have successfully been used to influence health outcomes in other areas, with variations in format

The Global Fund issues a call to action every 3 years, requesting financial support from donors in the fight against HIV, Malaria & TB

USD$ 15.7B was raised in the last replenishment

Since first call-to-action: number of people living with HIV on antiviral therapy has increased from ~0% to ~75%

In the early 2000s, WHO FCTC had a call to action for countries to sign a global treaty on tobacco control, committing parties to regulatory changes & public health efforts

168 countries signed the treaty & implemented changes

Since call-to-action: Global prevalence of smoking has decreased from ~33% to ~23%

CSOs jointly issued a call to action to the G20 Leaders' Summit, asking for action to improve access to C-19 tools and improve resilience and prevent future pandemics

20+ world leaders reached consensus on further PPR action

Since call-to-action: Increased investment in the Pandemic Fund; maintained the joint finance & health taskforce

Effective calls to action contain certain ingredients

- **Case for change**
  - Outline of the current situation and why it should change
  - Description of an achievable target

- **Proof of the possibility**
  - Overview of what has stifled change
  - Evidence to convince readers that change is possible

- **Right ask of the right people**
  - Identification all stakeholders who have a role in enabling and undertaking change
  - Clear articulation of what is needed from each stakeholder to achieve desired change

- **Proof it’s the right time**
  - Outline of what is driving momentum for imminent change

Today, we will discuss the content of the PPH Summit's call to action through these four areas.

The document will be developed from the input in this session, and reviewed by the PPH Steering Committee prior to publication.
Who should be the signatories for the call to action?

- Steering Committee?
- All summit participants?
- Representatives from select organizations?
- Representatives from countries?

Elements to consider
- Signatory rights
- Representativity
- Political weight
- Coalition size
Case for change

• What is the problem?
• How much can this change?

PPH has high morbidity and mortality
- Leading cause of maternal mortality
- Where patients survive, often need surgery, may be left with life long reproductive disability

PPH impact is distributed disproportionately
- Disproportionate impact on low and low- and middle-income countries: Account for ~80% of all maternal deaths

MMR stagnating for the past 5-10y
- MMR around 215, still a long way to go to reach SDG target

Target is SDG 3.1
- Reduce global maternal mortality ratio to less than 70 per 100,000 live births – currently significantly off track
Proof of the possibility

• What has stifled change to date?

• Why should stakeholders believe that things can change?

Change has been stifled across all areas

- Limited developments in discovery science, new innovations & implementation of existing, proven interventions

WHO and the HRP have brought together relevant stakeholders to prioritize joint efforts

- > 130 participants across all stakeholder groups & geographies brought together
- Reviewed results from studies, surveys, case studies & interviews
- Held evidence-based & data-driven discussions
- Jointly aligned on priority gaps across research, guidelines, advocacy & implementation
- Reached consensus, acknowledging some regional variation

Limited developments in discovery science, new innovations & implementation of existing, proven interventions
Right ask of the right people (I/II)

• I. Which stakeholders need to act to enable change in PPH outcomes?

• II. What does each stakeholder need to do to ensure effective & coordinated efforts towards improved PPH outcomes?
### Right ask of the right people (II/II)

#### I. Which stakeholders need to act to enable change in PPH outcomes?

- **Global community**
  - Identify a leading organization responsible for a unified agenda
  - Launch coordinated initiatives that increase PPH awareness

- **Donors**
  - Increase financial commitments, channeling investments to priority gaps

- **Research community**
  - Focus efforts on the clinical and implementation research priorities

- **Industry & innovators**
  - Focus their R&D efforts on critical tools that are missing, or, improving existing tools

- **Policy makers**
  - Ensure & maintain alignment between their recommendations
  - Update & develop new recommendations
  - Develop derivative materials such as toolkits or care pathways

- **Implementors (incl. NGOs & CSOs)**
  - Develop new delivery models to address priority gaps

- **Professional associations**
  - Promote adherence to recommended interventions

- **Ministries of Health**
  - Ensure national guidelines reflect evidence & use full PPH tools
  - Steer national procurement to quality-assured medicines & devices
  - Systematically capture & disseminate PPH-related data
  - Ensure health facilities are appropriately resourced

- **Donors**
  - Increase financial commitments, channeling investments to priority gaps

- **Women**
  - Share learnings from experience
  - Participate in solution design
Momentum

• Why is now the right time for action?

For the first time ever, the global community has come together to align on priority PPH gaps to address

We must seize this clarity to make headway in the fight against PPH
Next steps

PPH Summit Call to Action will be developed with the input from today's session

- **Case for change**, with additions & amendments as per today’s discussion
- **Proof of the possibility**, with additions & amendments as per today’s discussion
- **Right ask for the right people**, informed by today's discussion
- **Momentum**, with additions & amendments as per today’s discussion
- **Signatories**, informed by today's discussion

Publication will occur after review by the Steering Committee and other signatories as agreed today