ADVOCACY PRESENTATION: Postpartum Hemorrhage

Objectives

- Present PPH as a public health priority
- Define interventions available for PPH prevention and management
- Share country experiences and expected results

Reducing Maternal Mortality Due to Postpartum Hemorrhage (PPH)

What Is Safe Motherhood?

A woman’s ability to have a SAFE and healthy pregnancy and childbirth.

Where is Motherhood Less Safe?

- Maternal & Newborn Health: Scope of Problem
  - 180–200 million pregnancies per year
  - 75 million unwanted pregnancies
  - 50 million induced abortions
  - 20 million unsafe abortions (same as above)
  - 342,900 maternal deaths (2008)
  - 1 maternal death = 30 maternal morbidities
  - 3 million neonatal deaths (first week of life)
  - 3 million stillbirths

Deaths of Women from Pregnancy and Childbirth: 99% in developing world
ADVOCACY PRESENTATION: Postpartum Hemorrhage

PPH: Leading Cause of Maternal Mortality

- Hemorrhage is a leading cause of maternal deaths
- 35% of global maternal deaths
- Estimated 132,000 maternal deaths
- 14 million women in developing countries experience PPH—26 women every minute

Sources: Khan et al., 2006; POPPHI, 2009; Taking Stock of Maternal, Newborn and Child Survival, 2000–2010 Decade Report

What is PPH?

- Blood loss >500mL in the first 24 hours after delivery
- Severe PPH is loss of 1000mL or more.
- Accurately quantifying blood loss is difficult in most clinical or home settings.
- Many severely anemic women cannot tolerate even 500mL blood loss

Why Do Women Die From Postpartum Hemorrhage?

- We cannot predict who will get PPH.
- Almost 50% of women deliver without a skilled birth attendant (SBA).
- 30% of maternal deaths occur in the first 24 hours following birth, mostly due to PPH.
- PPH can kill in as little as 2 hours.
- Anemia increases the risk of dying from PPH.
- Timely referral and transport to facilities are often not available or affordable.
- Emergency obstetric care is available to less than 20% of women.


What Can Be Done?

Prevention

- Promotion of family planning and birth spacing
- Prevention, detection and treatment of anemia
- Community based distribution of misoprostol for third stage use

Management

- Active triage of emergency cases
- Rapid assessment and diagnosis
- Emergency protocols for PPH management
- Basic emergency obstetric and newborn care (EmONC)

PPH Prevention & Management

<table>
<thead>
<tr>
<th>PPH PREVENTION</th>
<th>PPH MANAGEMENT</th>
</tr>
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<tbody>
<tr>
<td>WITHOUT AN SBA</td>
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<tr>
<td>Community awareness—BCC/IEC</td>
<td>Community-based counseling and distribution of misoprostol</td>
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<tr>
<td>Birth preparedness/complication readiness (BP/CR)</td>
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<tr>
<td>Prevention of unsafe abortion (IASP)</td>
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<tr>
<td>Family planning and birth spacing</td>
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<tr>
<td>Promotion of prolonged labor reduction</td>
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<tr>
<td>Community-based distribution of misoprostol for third stage care</td>
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<tr>
<td>Active management of the third stage of labor (AMTSL)</td>
<td>Community-based complication planning</td>
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<tr>
<td>Routine inspection of placentas for completeness</td>
<td>Community-based complication planning</td>
</tr>
<tr>
<td>Routine inspection of perineum/vagina for lacerations</td>
<td>Community-based complication planning</td>
</tr>
<tr>
<td>Routine immediate postpartum monitoring</td>
<td>Community-based complication planning</td>
</tr>
</tbody>
</table>

1. Active management of the third stage of labor (AMTSL)
   - During deliveries with a skilled provider
   - Prevents immediate PPH
   - Associated with almost 60% reduction in PPH occurrence

2. Misoprostol
   - During home births without a skilled provider
   - Community-based counseling and distribution of misoprostol
**Active Management of the Third Stage of Labor (AMTSL)**

1. Administration of a uterotonic agent within one minute after the baby is born (oxytocin is the uterotonic of choice)
2. Controlled cord traction while supporting and stabilizing the uterus by applying counter traction
3. Uterine massage after delivery of the placenta.

**Risk of PPH**

<table>
<thead>
<tr>
<th>Management of third stage of labor</th>
<th>Blood Loss (&gt; 500 ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiologic</td>
<td>1.0%</td>
</tr>
<tr>
<td>Active (oxytocin)</td>
<td>2.7%</td>
</tr>
<tr>
<td>Misoprostol</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

**AMTSL**

- More effective than physiologic management
  - 60% decrease in PPH and severe PPH
  - Decreased need for blood transfusion
  - Decreased anemia (<9 g/dl)
- Uterotonic agent = most effective component
  - Choice depends on cost, stability, safety, side effects, type of birth attendant, cold chain availability

**Choice of Uterotonic Drug**

- Oxytocin preferred
  - Fast-acting, inexpensive, no contraindications for use in the third stage of labor, relatively few side effects
  - Requires refrigeration to maintain potency, requires injection (safety)
- Misoprostol
  - Does not require refrigeration or injection, no contraindications for use in the third stage of labor
  - Common side effects include shivering and elevated temperature, is less effective than oxytocin

**Misoprostol at Home Births: 2006**

- Oral misoprostol can be delivered with efficacy and feasibility in a rural home delivery setting.
- Reduced acute PPH by almost 50% (compared to placebo)
- Associated with an 80% reduction in acute severe PPH

**Balanced Approach to PPH Prevention**

Combination can prevent 50–60% of PPH

- Community-based education and distribution of misoprostol
  - AMTSL
## Distribution of Misoprostol and Information on Safe Use

- Misoprostol to prevent PPH offered to women in intervention area at 8 months
  - Safe and correct timing
  - Risks of taking tablet prior to delivery
  - Common side effects
  - Where to go if PPH occurs even after taking medication

## Emerging PPH Prevention Innovations

- Oxytocin in Uniject™ for simpler dosing and improved infection prevention during AMTSL
- Reduction in the dose: Misoprostol 400mcg (vs. 600 mcg) may be as effective with fewer side effects
- Simplification of AMTSL protocol: Oxytocin vs. Oxytocin + CCT

## PPH Management

<table>
<thead>
<tr>
<th>Component</th>
<th>BE=ONC</th>
<th>CE=ONC</th>
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</thead>
<tbody>
<tr>
<td>Active triage of emergency cases</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Manual removal of retained placenta and placental fragments</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Suturing genital lacerations, bimanual compression of uterus, aortic compression</td>
<td>X</td>
<td></td>
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<tr>
<td>Intravenous therapy</td>
<td>X</td>
<td></td>
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<tr>
<td>Parenteral uterotonic drugs and antibiotics</td>
<td>X</td>
<td></td>
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<tr>
<td>Blood transfusion</td>
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<td>X</td>
</tr>
<tr>
<td>Surgery</td>
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<td>X</td>
</tr>
</tbody>
</table>

## Emerging PPH Management Innovations

- Use of misoprostol for treatment of PPH that occurs at home
- Use of oxytocin in the Uniject™ device for prevention and treatment of PPH in home births
- Non-pneumatic anti-shock garment (NASG) to stabilize and prevent/treat shock during management of PPH
- Condom tamponade to treat PPH at facilities

## Expected Results

- Improved policy environment to support evidence-based practices (AMTSL)
- Increased uterotonic coverage especially in areas with low levels of skilled birth attendance
- Increased skilled attendance at birth
- Decreased PPH cases
- Reduced maternal and neonatal mortality
- Increased awareness about danger signs

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## Results: Universal Uterotonic Use

- 10 countries surveyed
- Use of uterotonic high
- Correct use of AMTSL was low: only 0.5 to 32 percent of observed deliveries
- Findings suggest that AMTSL was not used at 1.4 million deliveries per year
Results: Improved Policy Environment to Support Evidence-based Practice—Uganda

- All SBAs authorized to practice AMTSL and use oxytocin for AMTSL
- AMTSL integrated into preservice: doctors, nurses, midwives
- Oxytocin and ergometrine on National Essential Drugs List for PPH prevention and treatment; not misoprostol
- Ergometrine first line drug
- 58% of selected facilities have oxytocin in stock

Results: Increased Uterotonic Coverage in Afghanistan

Results: Increased Uterotonic Coverage in Indonesia

- Uterotonic coverage: Oxytocin or misoprostol tablets

Results: Increased Uterotonic Coverage in Nepal

Results: Increased Attendance with SBA in Indonesia

Results: Reduced PPH Rate in Niger

- Promotion of AMTSL, 33 government facilities
- Increased AMTSL coverage from 5% to 98% of births
- Dropped the PPH rate from 2.3% to 0.2%
Results: Reduced Cases & Costs in Afghanistan

- Training TBAs to administer misoprostol to treat PPH, 2 hypothetical cohorts of 10,000 women:
  1. TBA referral after blood loss ≥500 ml
  2. Administer 1000 μg of misoprostol at blood loss ≥500 ml

- Misoprostol strategy could:
  - Prevent 1647 cases of severe PPH (range: 810–2920)
  - Save $115,335 in costs of referral, IV therapy and transfusions (range: $13,991–$1,563,593) per 10,000 births.

  Source: S.E.K. Bradley et al., IJOG, 2006

Results: Anecdotal Mortality Impact

- Indonesia: 1 district
  - Before program (2004): 19 PPH cases; 7 maternal deaths
  - During program (2005): 8 PPH cases; 2 maternal deaths

- Nepal: 1 district
  - Expected # maternal deaths for the period: 45
  - Observed # maternal deaths for the period: 29

- Afghanistan:
  - Expected # maternal deaths in intervention area: 27
  - Actual # maternal deaths: 1 (postpartum eclampsia)

Results: PPH Reduction Modeling

- Sub-Saharan Africa
- Comprehensive intervention package (health facility strengthening and community-based services) reduces deaths due to PPH or sepsis after delivery by 32%—compared to just health facility strengthening alone (12% reduction)

  Source: C Pagel et al., 2009

Conclusions

- PPH is the leading cause of maternal mortality
- PPH is largely preventable
- AMTSL should be provided at ALL births attended by a skilled attendant
- When not possible, misoprostol should be provided to prevent PPH