

WHO recommendations  
Uterotonics for the  
prevention of postpartum  
haemorrhage



World Health  
Organization

## table of contents

**01**

The global burden of postpartum haemorrhage

**02**

Uterotonics for PPH prevention

**03**

How were the WHO recommendations updated?

**04**

What are the updated WHO recommendations?

**05**

So what's new?

**06**

Implementing the WHO recommendations

# Method: Developing and applying a ‘living guidelines’ approach to WHO recommendations on Maternal and Perinatal Health\*.

- ❖ Over the past decade, WHO has issued over 400 maternal and perinatal health (MPH) recommendations for global use, and the size of this portfolio presents a major challenge to ensuring that all recommendations are up to date.
- ❖ A dynamic ‘living guidelines’ approach has been developed and applied to respond more rapidly to new, important evidence that may affect specific WHO recommendations in MPH.
- ❖ The new approach uses an evidence-informed, consultative prioritisation process, rapid updating of prioritised systematic reviews and electronic consultations with ‘living guidelines’ panels.
- ❖ Using this approach enables WHO to efficiently use resources to execute its global mandate on normative guidance for MPH.
- ❖ Other guideline development organizations can also adapt this approach to facilitate more rapid and efficient updating of recommendations.

## 1. the global burden of postpartum haemorrhage

# What is postpartum haemorrhage?

Postpartum haemorrhage (PPH) is the leading cause of maternal death worldwide.

Postpartum haemorrhage (PPH) is commonly defined as a blood loss of 500 ml or more within 24 hours after birth. It affects about 5% of all women giving birth around the world.

Globally, nearly [one quarter of all maternal deaths](#) are associated with PPH. In most low-income countries, it is the main cause of maternal mortality.

The majority of PPH-associated deaths could be avoided by the use of prophylactic uterotonics during the third stage of labour and appropriate treatment.

Improving health care for women during childbirth to prevent and treat PPH is a necessary step towards achievement of the health targets of the Sustainable Development Goals (SDGs).

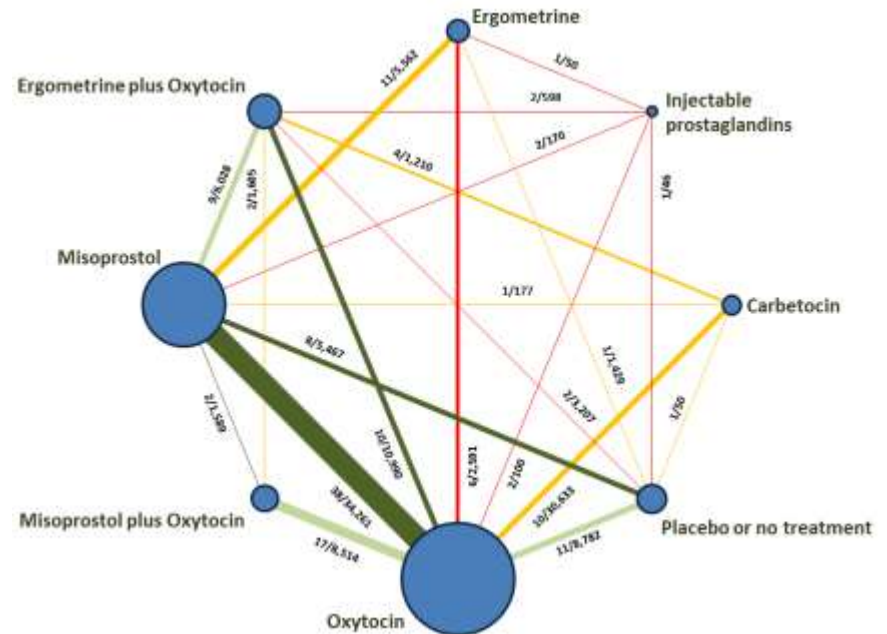
**99% of all maternal deaths occur in low- and middle-income countries (LMICs).**

## 2. Uterotonics for PPH prevention

# New findings on uterotonics for PPH prevention

A Cochrane systematic review and network meta-analysis compared uterotonic options with no uterotonic and other uterotonic options.

- 196 trials (135 559 women) across 53 countries
- Any trial comparing a uterotonic vs placebo, no uterotonic or another uterotonic
- Single agents (oxytocin, carbetocin, misoprostol, ergometrine) or combination agents (oxytocin plus ergometrine, oxytocin plus misoprostol)



Gallos et al. Uterotonic agents for preventing postpartum haemorrhage: a network meta-analysis. Cochrane Database Syst Rev. CD011689.

## 2. Uterotonics for PPH prevention

# New findings on uterotonics for PPH prevention

A Cochrane systematic review and network meta-analysis compared all uterotonic options and placebo or no treatment.

- 196 trials (135 559 women) across 53 countries
- Any trial comparing a uterotonic vs placebo, no treatment or another uterotonic
- Single agents (oxytocin, carbetocin, misoprostol, ergometrine) or combination agents (oxytocin plus ergometrine, oxytocin plus misoprostol)

In light of this new evidence, the WHO recommendations on uterotonics for PPH prevention have been updated

The WHO PPH recommendations were first published in 2012.

**These updated recommendations (2018)** supersede the previous recommendations on uterotonics for PPH prevention.

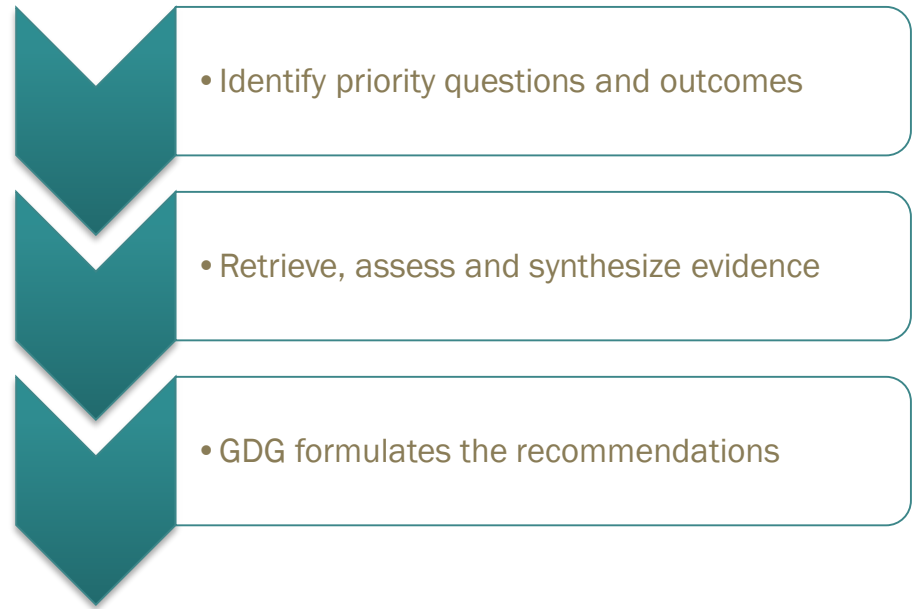
### 3. how were the WHO recommendations updated?

## A systematic approach

The recommendations were updated according to the standards of the WHO handbook on guideline development

Updating involves:

1. WHO Steering Group
2. Guideline Development Group (GDG)
3. Executive Guideline Steering Group (GSG)
4. External Review Group
5. Systematic review team
6. External partners and observers



### 3. how were the WHO recommendations updated?

# GDG formulates the recommendations

## The Guideline Development Group (GDG) convened in September & October 2018

The GDG comprised 18 external experts and relevant stakeholders with expertise in research, guideline development, policy and programmes on PPH prevention and treatment.

GDG members considered:

- Balance between desirable and undesirable effects
- Overall quality of supporting evidence
- Values and preferences of stakeholders
- Resource requirements
- Cost-effectiveness
- Acceptability
- Feasibility
- Equity



#### 4. What works: efficacy and safety of uterotonics for PPH prevention

**Recommendation 1.** The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.

To effectively prevent PPH, only one of the following uterotonics should be used:

- Oxytocin
- Carbetocin
- Misoprostol
- Ergometrine/methylergometrine
- Oxytocin and ergometrine fixed-dose combination

## 4. What works: efficacy and safety of uterotonics for PPH prevention

**Recommendation 1.** The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.

To effectively prevent PPH, only one of the following uterotonics should be used:

- **Oxytocin**
- Carbetocin
- Misoprostol
- Ergometrine/methylergometrine
- Oxytocin and ergometrine fixed-dose combination

### Recommendation 1.1

The use of oxytocin (10 IU, IM/IV) is recommended for the prevention of PPH for all births.

- Vaginal birth or caesarean section
- Skilled health personnel required to administer
- At caesarean section: consider dividing doses and avoid a rapid IV bolus

## 4. What works: efficacy and safety of uterotonics for PPH prevention

**Recommendation 1.** The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.

To effectively prevent PPH, only one of the following uterotonics should be used:

- Oxytocin
- **Carbetocin**
- Misoprostol
- Ergometrine/methylergometrine
- Oxytocin and ergometrine fixed-dose combination

### Recommendation 1.2

The use of carbetocin (100 µg, IM/IV) is recommended for the prevention of PPH for all births in contexts where its cost is comparable to other effective uterotonics.

- Vaginal birth or caesarean section
- Skilled health personnel required to administer
- For PPH prevention only

## 4. What works: efficacy and safety of uterotonics for PPH prevention

**Recommendation 1.** The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.

To effectively prevent PPH, only one of the following uterotonics should be used:

- Oxytocin
- Carbetocin
- **Misoprostol**
- Ergometrine/methylergometrine
- Oxytocin and ergometrine fixed-dose combination

### Recommendation 1.3

The use of misoprostol (either 400 µg or 600 µg PO) is recommended for the prevention of PPH for all births.

- Alternative routes may be needed at caesarean section, but oral route is preferred by women
- No clear evidence of which dose is superior, but higher doses have more side effects
- Inform women of possible adverse effects
- Can be used in hospital or community

## 4. What works: efficacy and safety of uterotonics for PPH prevention

**Recommendation 1.** The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.

To effectively prevent PPH, only one of the following uterotonics should be used:

- Oxytocin
- Carbetocin
- Misoprostol
- **Ergometrine/methylergometrine**
- Oxytocin and ergometrine fixed-dose combination

### Recommendation 1.4

The use of ergometrine (200 µg, IM/IV) is recommended for the prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use

- Vaginal birth or caesarean section
- Skilled health personnel are required
- Inform women of possible side effects - other options may have better side effect profile

## 4. What works: efficacy and safety of uterotonics for PPH prevention

**Recommendation 1.** The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.

To effectively prevent PPH, only one of the following uterotonics should be used:

- Oxytocin
- Carbetocin
- Misoprostol
- Ergometrine/methylergometrine
- **Oxytocin and ergometrine fixed-dose combination**

### Recommendation 1.5

The use of oxytocin and ergometrine fixed-dose combination (5 IU/500 µg IM) is recommended for the prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use.

- Vaginal birth or caesarean section
- Skilled health personnel are required

## 4. What works: efficacy and safety of uterotonics for PPH prevention

**Recommendation 1.** The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.

To effectively prevent PPH, only one of the following uterotonics should be used:

- Oxytocin
- Carbetocin
- Misoprostol
- Ergometrine/methylergometrine
- Oxytocin and ergometrine fixed-dose combination
- **Injectable prostaglandins**

### Recommendation 1.6

Injectable prostaglandins (carboprost or sulprostone) are **not recommended** for the prevention of PPH

#### 4. Which one: Choice of uterotonics for PPH prevention

**Recommendation 2.** In settings where multiple uterotonic options are available, **oxytocin (10 IU, IM/IV)** is the recommended uterotonic agent for the prevention of PPH for all births.

Vaginal birth or caesarean section

Skilled health personnel are required

Combination of misoprostol and oxytocin may be more effective than oxytocin alone for some priority outcomes, however:

- increases side effects
- not available as a fixed dose combination
- requires parenteral and oral administration



#### 4. Which one: Choice of uterotonics for PPH prevention

**Recommendation 3.** In settings where oxytocin is unavailable (or its quality cannot be guaranteed), the use of other injectable uterotonics (carbetocin, or if appropriate ergometrine/methylergometrine or oxytocin and ergometrine fixed-dose combination) or oral misoprostol is recommended.

Vaginal birth or caesarean section

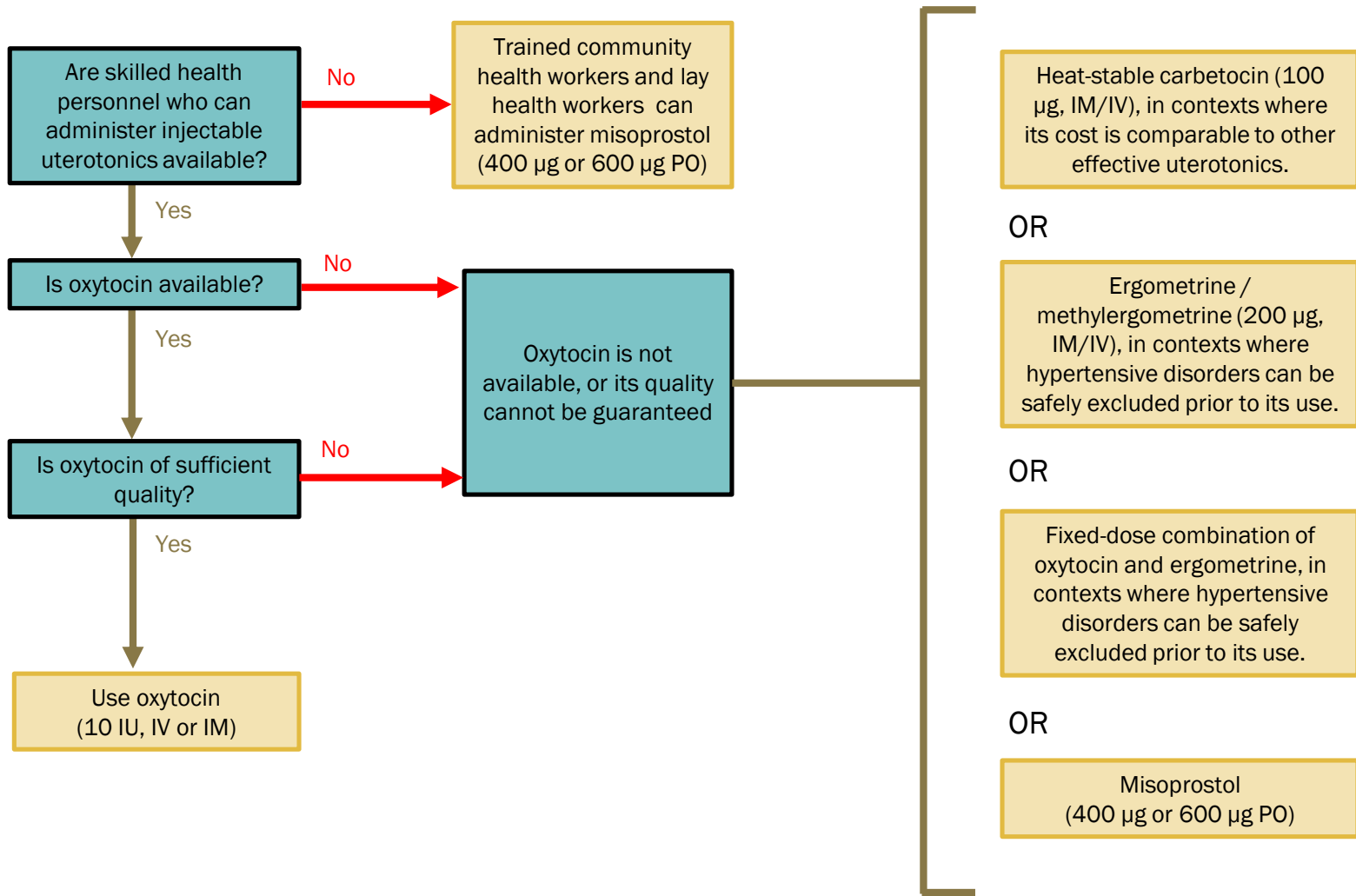
Skilled health personnel are required

#### 4. Which one: Choice of uterotonics for PPH prevention

**Recommendation 4.** In settings where skilled health personnel are not present to administer injectable uterotonics, the administration of misoprostol (either 400 µg or 600 µg PO) by community health care workers and lay health workers is recommended for the prevention of PPH.

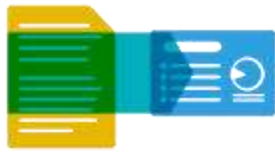
If skilled health personnel are not present or have not been trained to administer injectable uterotonics, **oral misoprostol** is preferred

## 6. implementing the updated WHO recommendations



## 6. implementing the updated WHO recommendations

# Implementation considerations



### Update clinical guidance

Develop or revise existing clinical guidelines, protocols or job aids



### Equip health facilities

Ensure necessary supplies, equipment and staff to use uterotonics safely



### Support behaviour change

Obtain technical support for implementation, engage stakeholders and partners, and provide training

## 6. implementing the updated WHO recommendations

# Implementation considerations



### Quality-certified uterotonics

Regulatory, procurement and logistics processes that work



### Cold-chain transport & storage

For heat-sensitive uterotonics  
(oxytocin, ergometrine)



### Effective communication

Ensure women are informed of risks, benefits and alternatives

# Contact us



**Email:**

reproductivehealth@who.int



**Twitter:**

@HRPresearch



**Facebook:**

World Health  
Organization