



Guidance Note on
**Prevention and Management
of Postpartum Haemorrhage**

Maternal Health Division
Ministry of Health and Family Welfare
Government of India

December 2015

Maternal Health Division

Ministry of Health and Family Welfare

Government of India, Nirman Bhawan, New Delhi - 110011



C.K. Mishra

Additional Secretary &
Mission Director, NHM
Telefax : 23061066, 23063809
E-mail : asmd-mohfw@nic.in



भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110011
GOVERNMENT OF INDIA
MINISTRY OF HEALTH & FAMILY WELFARE
NIRMAN BHAVAN, NEW DELHI - 110011

Preface

High maternal mortality is largely associated with preventable causes such as Postpartum Haemorrhage (PPH), high blood pressure (pre-eclampsia/eclampsia), sepsis, unsafe abortion and obstructed labour that require Emergency obstetric care (EmOC).

PPH affects approximately 2% of all women who give birth. It is associated not only with nearly one quarter of all maternal deaths globally but is also the leading cause of maternal mortality in most low-income countries. If MMR goal is to be achieved, maternal deaths related to PPH must be significantly reduced. In India, PPH is the most common cause of death of women during childbirth in India, with 38% of maternal deaths being attributed to PPH.

Although, most of the protocols for prevention of PPH are in place as per the Government of India guidelines, during the discussions with the Federation of Obstetric and Gynaecological Societies of India (FOGSI), development partners, international NGOs and other experts, several constructive suggestions have emerged for the prevention and management of PPH at community and facility levels. In view of the importance attached to preventing the postpartum haemorrhage, the Ministry of Health & Family Welfare has drafted a PPH guidance note for the PPH care.

The guidance note outlines a comprehensive PPH strategy model to provide a roadmap for policy makers, health officials, service providers both public and private and the frontline workers to address the full spectrum of clinical and psychosocial causes of PPH morbidity and mortality.

I am confident that this Guidance Note will aid the policy makers, health officials, service providers and the frontline workers in addressing both the preventive and quality treatment aspect of PPH for providing quality health care.


(C.K.Mishra)

New Delhi
24th November, 2015



Dr. RAKESH KUMAR, I.A.S.
JOINT SECRETARY
Telefax : 23061723
E-mail : rakesh.kumar38@nic.in
E-mail : drrakeshkumar92@hotmail.com



सत्यमेव जयते

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110011
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi-110011

Foreword

Postpartum Haemorrhage (PPH) is the most common cause of maternal death during childbirth in India. PPH, which is exacerbated by widespread anaemia among pregnant women, accounts for 38 percent of all maternal deaths. A woman with PPH can die within 2 hours after the onset of bleeding if she does not receive treatment. The speed with which death occurs presents a major challenge in settings with poor communications and referral systems, and shortage of necessary drugs and equipment.

Early identification of anaemic women and adequate treatment and follow up of severely anaemic pregnant women is therefore a critical intervention which helps to prevent /reduce a significant proportion of PPH maternal mortality.

As a general preventive approach the existing Government of India guidelines strongly recommend the use of oxytocin for active management of the third stage of labour, along with controlled cord traction and uterine massage as it reduces PPH by more than 60%. However, during the field visits it has been observed that service provider do not perform the three AMTSL steps correctly. This may be due to inadequate manpower, logistical/supply chain issues, training issues, lack of on the job training, supportive supervision and poor tracking.

While most of the protocols for the prevention of PPH are in place as per the Government of India guideline, during discussions with the experts, development partners, international NGOs and medical colleges there has been a general consensus on the lack of holistic and comprehensive guidelines to address PPH which can be implemented throughout the country. In order to fulfil this felt need, the Ministry of Health & Family welfare has prepared a PPH guideline note. Through this comprehensive note, it is expected to expand access to innovative technologies and approaches, including Birth preparedness and complication readiness (BPCR), community based distribution of misoprostol and proven, but under-used practices, such as active management of third stage of labour (AMTSL) etc.

I am confident that the present Guidance Note will help the states to develop a comprehensive PPH strategy to provide a roadmap for program managers and service providers to address the full spectrum of clinical and psychological causes of PPH morbidity and mortality, both at the facility and community levels.

(Dr. Rakesh Kumar)



Dr. Dinesh Baswal

Deputy Commissioner (Maternal Health)

Telephone : 011-23062930

E-mail : dinesh126@hotmail.com



सत्यमेव जयते

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110011
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi-110011

Program Officer's Message

Despite the progress made in recent years in reducing the number of women who suffer morbidity or mortality from postpartum haemorrhage (PPH), it still remains the most common direct cause of maternal death in India. The majority of these deaths can be prevented through the use of prophylactic uterotonics during the third stage of labour and by timely and appropriate management.

Though the most of the protocols for the Prevention of PPH are in place as per the GoI guidelines. However, during the discussions with the technical experts, few important suggestions emerge for the prevention and management of PPH at Community & Facility level in addition to what is already there in existing guidelines.

To update current PPH management and treatment protocols, MOHFW along with FOGSI and key development partners have decided to develop comprehensive PPH strategy to provide a roadmap for policy makers, health officials, service providers (Public & Private), front line workers to address the full spectrum of clinical and psychosocial causes of PPH morbidity and mortality.

In the year of 2014 -2015, Maternal Health Division, Ministry of Health & Family Welfare held series of technical consultation on the prevention and treatment of Postpartum Haemorrhage to review current evidence and to update previously published PPH guidelines. This new guidelines combine previous as well as revised PPH management protocols to address both prevention and treatment recognizing the importance of integrated care. All activities for the prevention of PPH should take place within a comprehensive package of interventions to prevent and manage PPH, along the household-to-hospital continuum of care.

I would like to acknowledge the contribution of all members of the Expert Group in developing the content of these PPH guidance note. I would especially like to appreciate the concerted efforts made by Dr. Suchitra Pandit, Past President FOGSI, Dr Sudhir Maknikar, Senior Technical Advisor JSI, Dr Sanjay Kapur Managing Director JSI. I would like to thank my colleagues Dr. Veena Dhawan AC MH and consultants Dr. Pushkar Kumar, Dr. Rajeev Agarwal & Dr Tarun Singh Sodha for their valuable inputs and support.

The Guidance Note prepared by the Maternal Health Division, Ministry of Health & Family Welfare provides a holistic and comprehensive PPH model which can be implemented, throughout the country. It emphasises on a broader focus on the continuum of care in a health system beginning with prevention and first-line treatment measures, advancing to temporary measures and ending with emergency services.


(Dr) Dinesh Baswal

Healthy Village, Healthy Nation



एड्स — जानकारी ही बचाव है
Talking about AIDS is taking care of each other

List of Contributors

Dr. Rakesh Kumar, Joint Secretary (RCH), MOHFW
Dr. Dinesh Baswal, Deputy Commissioner (MH), MOHFW
Dr. Veena Dhawan, Assistant Commissioner (MH), MOHFW
Dr. Yashpal Sharma, Govt of J&K
Dr. K. Kolandaswamy, Govt of Tamil Nadu
Dr. Suchitra Pandit, FOGSI
Dr. Sanjay Gupte, FOGSI
Dr. Vinita Das, HOD, OBG, KGMU
Dr. Amita Pandey, Asso Professor, OBG, KGMU
Dr. Nirija Bhatla, Professor, OBG, AIIMS, New-Delhi
Dr. Poonam Shivkumar, Prof. OBGY, MGIMS Wardha
Dr. Devendra Khandait, BMGF
Dr. Gorakh Mandrupkar, FOGSI
Dr. Sanjay Kapur, JSI
Dr. Sudhir Maknikar, JSI
Dr. Ritu Agarwal, Sr. Consultant, National Skills Labs
Dr. Pushkar Kumar, Lead Consultant, Maternal Health, MOHFW
Dr. Rajeev Agarwal, Sr. Mgt Consultant, Maternal Health, MOHFW
Dr. Tarun Singh Sodha, Consultant, Maternal Health, MOHFW
Ms. Jenita Khwairakpam, Consultant, MOHFW

List of Abbreviations

AMTSL	Active Management of the Third Stage of Labour
ANC	Ante-Natal Care
ANM	Auxiliary Nurse Midwives
ASHA	Accredited Social Health Activist
BCC	Behaviour Change Communication
BEmOC	Basic Emergency Obstetric Care
BPCR	Birth Preparedness & Complication Readiness Plan
CAB	Circulation, Airway, Breathing
CCT	Control Cord Traction
EmOC	Emergency Obstetric Care
FOGSI	Federation of Obstetric and Gynaecological Societies of India
FRU	First Referral Unit
IDA	Iron Deficiency Anaemia
IEC	Information Education Communication
MMR	Maternal Mortality Ratio
NASG	Non-Pneumatic Anti Shock Garments
OBGY	Obstetrics and Gynaecology
PHC	Primary Health Centre
PPH	Post-Partum Haemorrhage
RL/NS	Ringer Lactate/ Normal Saline
SBA	Skilled Birth Attendant

Guidance Note on Prevention and Management of Postpartum Haemorrhage

Background

High maternal mortality is largely associated with preventable causes that require Emergency Obstetric Care (EmOC), such as Postpartum Hemorrhage (PPH), high blood pressure (pre-eclampsia/eclampsia), sepsis, unsafe abortion, and obstructed labor. As per the WHO, PPH affects approximately 6 percent of all women who give birth; it is associated not only with nearly one quarter of all maternal deaths globally but is also the leading cause of maternal mortality in most low-income countries. If MMR goals are to be achieved, maternal deaths related to PPH must be significantly reduced.

In India, PPH, which is exacerbated by widespread anemia among pregnant women, accounts for 38 percent of maternal deaths (RGI-SRS 2001-2003). The speed with which death from PPH occurs presents a major challenge in settings with poor communications and referral systems and shortages of necessary drugs and equipment.

Postpartum Haemorrhage (PPH) is commonly defined as a blood loss of 500 ml or more within 24 hours after birth, or a small blood loss that makes the woman hemodynamically unstable is also termed as PPH. Massive/severe PPH is defined as a blood loss of 1000 ml or more within the same timeframe. Uterine atony is the most common cause of PPH, but genital tract trauma (i.e. vaginal or cervical lacerations), uterine rupture, retained placental tissue, or maternal coagulation disorders may also result in PPH. Although the majority of women who experience PPH complications have no identifiable clinical or historical risk factors, grand multiparity and multiple gestation are associated with an increased risk of bleeding after birth. PPH may be aggravated by pre-existing anaemia and, in such instances, the loss of a smaller volume of blood may still result in adverse clinical sequelae.

A key factor in India that contributes to maternal death is the continued preference for home deliveries, which are often attended only by family members or unskilled birth attendants. For both socio-cultural and economic

reasons compounded by poor quality of care at health facilities, women prefer to deliver at home. Therefore, when complications occur, women often do not make it to hospitals for reasons including that complications are not recognized as problems, women lack decision-making power and transportation is not available. If they eventually make it to the health facility, they may experience delays in getting the care needed to save their lives because skilled health care providers do not have the appropriate skill mix, and equipment and supplies for provision of emergency obstetric care are lacking. Therefore, integrated interventions that inform women and the surrounding community on birth preparedness and possible risks, and train providers in high-quality antenatal services ensuring timely detection and management or referral of high-risk obstetrical, are essential for getting women the care they need in emergency situations.

PPH Prevention and Management at Community and Facility Level

- Communities are not aware about the importance of Birth Preparedness & Complication Readiness plan (BPCR). If clients & decision makers are properly oriented & counselled about the danger signs of pregnancy by the ANM & ASHA, the communities can be well equipped to handle the emergencies & delays at the village level.
- Early detection of high risk pregnancies such as severe anemia are missed or not detected during ANC. Early identification of anaemic women and adequate treatment & follow up of severely anaemic pregnant women is therefore a critical intervention which helps to prevent/reduce a significant proportion of PPH maternal mortality. Effective screening programs for Iron Deficiency Anemia (IDA) in prenatal and postnatal programs have been hampered by the lack of simple, safe, accurate, and low-cost hemoglobin testing tools. The majority of women who suffer from anemia live in low-resource areas where accurate diagnostics are unavailable. In such settings, anemia often goes undetected and untreated.
- Estimation of Blood Loss: In practice, blood loss after delivery is seldom measured. At present there is no standard method available for the measurement of blood loss following childbirth, with the objective of ensuring timely diagnosis of PPH and improving health outcomes.

- As a general preventive approach, the existing Gol guideline strongly recommend the use of oxytocin for active management of the third stage of labour (along with other two steps:- CCT & Uterine massage), because it reduces PPH by more than 60%. However, service providers do not perform the three AMTSL (Active Management of the Third Stage of Labour) steps correctly. This can be due to: inadequate HR, logistical/ supply chain issues, training issues, lack of on the job training & supportive supervision, and poor tracking AMTSL (quality, coverage) particularly when indicators were not integrated into supervisory tools or national information systems.
- Service providers are unable to diagnose and differentiate between an atonic and traumatic PPH & their mode of treatment.
- Management of shock and resuscitation protocols remain the missing link in current strategy and needs to be emphasized as a central component in the comprehensive strategy.
- Shortages of blood storage unit within the maternity ward of high case load facility and tertiary care centers like Medical College Hospital.
- All the service providers needs to be trained or oriented as per the revised Gol and WHO recommendations:

 - Oxytocin remains the uterotonic of choice, if oxytocin is not available, oral misoprostol should be given
 - Service providers are not aware or ignorant to screen all pregnant women for hypertension when opting for ergot derivatives for the prevention of PPH as these drugs have clear contraindications in women with hypertensive disorders.
 - Service providers are not aware about the recent WHO recommendation about the Control Cord Traction (CCT) with or without presence of SBA. In settings where SBA are unavailable, CCT is not recommended .

PPH management protocols in collaboration with FOGSI and other development partners

It is generally assumed that by preventing and treating PPH, most PPH-associated deaths could be avoided. The prevention and treatment of PPH are therefore vital steps towards improving the health care of women during childbirth and the reducing maternal mortality and morbidities. Though the most of the protocols for the Prevention of PPH are in place as per the Gol guidelines. However, during the discussions with the Federation of Obstetric and Gynaecological Societies of India (FOGSI) and other Experts, few important suggestions emerge for the prevention and management of PPH at Community & Facility level in addition to what is already there in existing guidelines.

Besides, all the Development partners/ International NGOs are working vertically in the states with their own technical innovation & approaches without any coherence & coordination with the Gol. Such non-scalable pilot PPH interventions are difficult to scale at national level in a cost effective way, though these projects have their best practices or success stories from their project areas. However, due to lack of scalable technical interventions to address the PPH & its local evidences, Gol has decided to have the holistic & comprehensive PPH model, which can be implemented, throughout the country. Through this comprehensive model, Gol will expand access to innovative technologies and approaches, including BPCR, community based distribution of misoprostol and proven, but under-used practices such as AMTSL etc.

To finalize the revised PPH guideline based on some of the issues mentioned above, Gol & FOGSI along with key development partners have decided to develop Comprehensive PPH strategy model to provide a roadmap for policy makers, health officials, service providers (Public & Private), front line workers to address the full spectrum of clinical and psychosocial causes of PPH morbidity and mortality.

The discussion during various consultations with the Experts provided the opportunity to follow a woman with PPH through the health system, highlighting how effective programs must think beyond traditional prevention approaches and establish ways to facilitate quality treatment of PPH as quickly as possible as part of BEmOC. Universal prophylaxis programs alone are

insufficient, as 6-16% of women who receive prophylaxis may still go on to have PPH. The need for a broader focus on the continuum of care in a health system was emphasized, beginning with prevention and first-line treatment measures, advancing to temporizing measures and ending with emergency services. To this end, different program approaches to PPH management were presented, all with an eye towards task-sharing PPH management down to where women deliver.

The deliberation of different PPH management strategies, including the advantages and disadvantages of each, underscored the complexity of moving from established science to the practicalities of programming. A one-size-fits-all approach for programs is not sufficient; rather, program strategies will differ by specific contexts. Subsequent consultation with the Experts provided the opportunity to closely examine different hypothetical settings and to discuss optimal technologies, strategies and health system components needed to provide comprehensive PPH care to women. There is not one road ahead, but multiple pathways to ensure more comprehensive services of high quality to reduce PPH-related mortality.

The Maternal Health Division of the MoHFW has made endeavours to develop a number of guidelines & tools to help program managers & service providers in delivering quality care to women during pregnancy & childbirth, such as Skilled Birth Attendant (SBA), BEmOC, EmOC, MNH tool kit, Quality Assurance & Skill Labs guidelines. Recently, MoHFW has developed new Operational Guideline for prevention of PPH through Community based distribution of Misoprostol.

This new initiative of revising existing PPH prevention and management protocols with intention of enhancing access to appropriate medications/technical innovations and to be trained in relevant clinical & surgical procedures. But beyond this, GoI needs to have evidence-based operational guidelines on the safety, quality, and usefulness of various technical innovations to reduce PPH related maternal mortality. This revised guidance note from GoI, will provide the foundation for the strategic policy and programme development needed to ensure realistic and sustainable implementation of appropriate technical interventions.

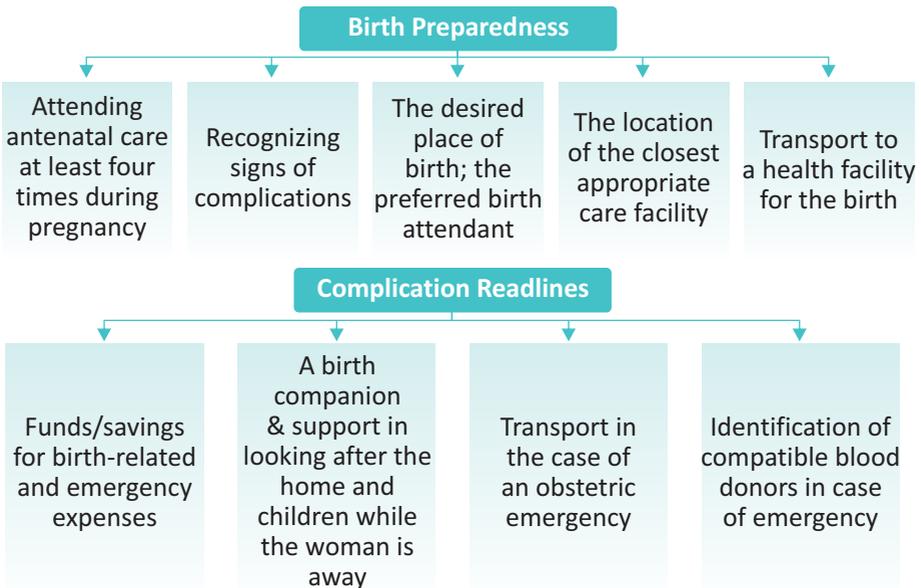
Framework: Community & Clinical Interventions for PPH Management

Community	Clinical
Prevention	
<ul style="list-style-type: none"> 🕒 Community awareness-BCC & IEC 🕒 Birth preparedness & complication readiness plan (BPCR) 🕒 Promotion of skilled attendant at birth 🕒 Detection & treatment of Anemia 🕒 Misoprostol at Community level 	<ul style="list-style-type: none"> 🕒 Focussed ANC 🕒 Line listing & Treatment of Anemia 🕒 Use of Partograph- to reduce prolonged labor 🕒 Limiting episiotomy at normal birth 🕒 AMTSL 🕒 Routine inspection of placenta for completeness 🕒 Routine immediate postpartum care & monitoring
Management	
<ul style="list-style-type: none"> 🕒 Facility or place of birth 🕒 Skilled provider 🕒 Early detection of danger signs 🕒 Designated decision maker(s) 🕒 Communication 🕒 Emergency transportation 🕒 Emergency funds 🕒 Blood donors 	<ul style="list-style-type: none"> 🕒 Active triage of emergency cases 🕒 Resuscitation 🕒 Rapid assessment & diagnosis 🕒 Emergency protocol for PPH management 🕒 Basic emergency Obstetric care <ul style="list-style-type: none"> • IV fluid resuscitation • Manual removal of Placenta • Parental Oxytocics & antibiotics 🕒 Comprehensive EmOC: <ul style="list-style-type: none"> • Blood transfusion • Surgery

Prevention of PPH in community

Every pregnant woman faces the risk of sudden, unpredictable complications that can be life-threatening to herself or to her infant. Hence they need timely access to skilled care during pregnancy, childbirth, and the postpartum period. Most of the maternal deaths are linked with three types of delays which can result in an increase in maternal morbidity and mortality. These delays have many causes, including logistical and financial concerns, unsupportive policies, gaps in services, inadequate community and family awareness and knowledge about maternal and newborn health issues. Birth Preparedness and Complication Readiness (BP/CR) is a strategy to promote the timely use of skilled maternal and neonatal care, especially during childbirth, based on the theory that preparing for childbirth and being ready for complications reduces delays in obtaining this care.

At present there is no standard protocol available for the community management of PPH. The Standards for Maternal and Neonatal Care by World Health Organization advocates that all pregnant women should have a written plan for birth and for dealing with unexpected adverse events, such as complications or emergencies that may occur during pregnancy, childbirth or the immediate postnatal period. A BPCR plan includes identification of the following elements:



The ultimate goal of community interventions is to decrease maternal mortality and morbidity by addressing the delays that occur at the community level. For achieving this, BPCR is used as the technical framework for share responsibility. At the household level, ASHA/ANM sensitizes the key decision makers and pregnant women for right decision at right time and timely referral through pre-identified transport for helping women access the services available as and when required. Secondly, at the community level, ASHA/ANM also promote and facilitate community involvement for collective action and shared responsibility through the community mobilization process. Through this process, community leaders and influential, non-governmental organizations, local government officials, health providers are encouraged to contribute to mobilization and establishment of community mechanisms for emergency funds and transportation.

As the ANMs may not be available to attend to the woman at the time of home delivery in a significant number of cases due to various factors, due consideration was given to the fact that ASHA are available in the community who could give Misoprostol to women in late pregnancy, to prevent PPH. This was supported by the available body of global evidence on the effectiveness, feasibility and safety of advance distribution of Misoprostol to pregnant women for prevention of PPH. The overarching objective of introducing community-based distribution of Misoprostol to pregnant women by ANMs and ASHAs is to increase the accessibility of this life saving commodity by bringing it to the doorstep of pregnant women who are likely to deliver at their homes. In the light of the rationale as explained above, the MoHFW, GoI has taken a policy decision to permit ASHAs to undertake advance distribution of Misoprostol to pregnant women who are likely to deliver at home, for prevention of PPH. (For more information, please refer to GoI- Operational Guidelines and Reference Manual for Advance Distribution of Misoprostol to Prevent PPH during Home Births-Nov 2013).

Prevention of PPH in Community

At the household level, ASHA/ANM sensitizes the key decision makers and pregnant women for right decision at right time and timely referral through pre-identified transport for helping women access the services available as and when required.

- ❑ Community awareness-BCC & IEC
- ❑ Birth preparedness & complication readiness plan
- ❑ Identification of Facility or place of birth and Promotion of skilled attendant at birth
- ❑ Detection & Treatment of Anemia
- ❑ Availability of Misoprostol at Community level
- ❑ Early detection of danger signs
- ❑ Emergency transportation

Community Based Distribution of Misoprostol for Prevention for PPH

- ❑ Prevention of PPH in cases where, for some reason, the woman is unable to access the health facility at the time of delivery and home delivery is imminent; the ANM or any other skilled birth attendant should conduct this delivery.
- ❑ In the exceptional scenario where a pregnant woman is not likely to access a health facility for delivery and the ANM is also unlikely to attend to her during delivery at home, advance distribution of Misoprostol for prevention of PPH should be considered.
- ❑ In home deliveries where ANMs cannot attend to the women, ASHAs have been allowed to undertake advance distribution of Misoprostol to pregnant women in the 8th month of pregnancy, for self-administration just after childbirth, for prevention of PPH.
- ❑ The woman has to take 1 tablet of Misoprostol (600 micrograms) by mouth with water within one minute or soon after the delivery of the baby and before the placenta comes out.
- ❑ Even after taking the tablets, if the woman has bleeding which soaks more than one average size pad in five minutes, feels weak or faint, is sweating or looks pale, or expels clotted blood, she should be transferred immediately to the hospital/FRU.

Diagnosis of PPH

For a vaginal birth, hemorrhage is considered a blood loss of > 500 ml. The diagnosis of PPH begins with recognition of excessive bleeding and methodical examination to determine its cause. As hemorrhage is a significant cause of maternal mortality, methods to accurately measure blood loss and PPH are needed. The challenge of determining the quantity of blood lost during childbirth continues to confound service providers & practitioners.

In clinical practice, the amount of blood lost during childbirth is typically visually estimated by the birth attendant. Even with repetitive studies identifying the limitations and inaccuracies of visual estimation, it is the most common method of estimating blood loss, possibly due to path dependency of service providers. It has been proved that the visual estimation of blood loss really has no place in research methods specifically evaluating blood loss. The magnitude of underestimation increases as the amount of blood loss increases. Studies have shown that visual assessment of estimated blood loss can underestimate postpartum blood loss by 33%–50% compared with the “gold standard,” photo-spectrometry. There are several quantitative methods to estimate blood loss; however, most are impractical in the delivery room as most of them require special equipment, for example photo-spectrometry which is the gold standard with 10% error rate.

Delay in the diagnosis and treatment of postpartum hemorrhage may place the woman at an increased risk of adverse outcome. In India, simple technologies for more accurate visual estimation of blood loss, such as the blood collection drape, collecting blood from the delivery table into a calibrated jug or pail, using cholera beds for measuring blood loss, and a standard absorptive cloth (adapting the Kanga Method) have been devised for early and more accurate estimation of blood loss. Using these measures mean dangerous blood loss is promptly identified, reducing life-threatening delays in treatment (including fluid replacement and uterotonic administration to prevent shock), referral, and/or transport of women who are bleeding to a higher-level facility for care.

In Indian settings majority of the pregnant women are anemic. Even small amount of blood loss can lead to PPH. Several related studies that looked at measurement of blood loss following childbirth, with the objective of ensuring timely diagnosis of PPH and improving health outcomes, were assessed. No study was found that directly addressed the question.

Recommendations for diagnosis of PPH: After childbirth, blood loss and other clinical parameters should be closely monitored. At present, there is insufficient evidence to recommend quantification of blood loss over clinical estimation.

Facility Management of PPH

1. Prevention of PPH: AMTSL

Preventing postpartum hemorrhage can reduce the number of women who die or suffer each year because of excessive bleeding related to pregnancy. It is possible to prevent a majority of the postpartum hemorrhages that occur. Some conditions may predispose a woman to hemorrhage, but 90% of women have no risk factors. Therefore, all women need access to a skilled birth attendant (SBA), who can manage labor and childbirth to minimize risk. This includes use of active management of the third stage of labor (AMTSL), which is associated with a nearly 60% reduction in PPH occurrence. Based on modelling (LiST), it is projected that universal use of AMTSL will prevent 27% of deaths from PPH¹.

All the below mention recommended activities for the prevention of PPH should take place within a comprehensive package of interventions to prevent and manage PPH, along the household-to-hospital continuum of care.

- AMTSL is still a best practice, with the use of uterotonics now the most critical element.
- All the three steps AMTSL should only be done by SBA/trained staff. Expert group recommended to have a step by step approach at different stages, e.g steps which need to be taken for prevention, steps when PPH is identified, Oxytocin to be given after birth etc. This will also help during training of service providers. In settings where SBA are unavailable, Control Cord Traction (CCT) is not recommended.
- All women giving birth should be offered uterotonics during the third stage of labour for PPH prevention.
- Oxytocin remains the uterotonic of choice for AMTSL. Oxytocin (10 IU, IM) is the preferred uterotonic based on studies on the safety and effectiveness of uterotonics. It also is the recommended uterotonic drug for PPH prevention during caesarean sections.

¹Lives Saved Tool (LiST), JHU Bloomberg School of Public Health. 2010

- If oxytocin is not available, misoprostol should be given. Because uterotonics are so important for PPH prevention, another uterotonic such as oral misoprostol (600 mcg) should be provided if oxytocin is not available.
- If a skilled attendant is not present, and oxytocin is not available (such as at unattended home birth), ASHA should administer 600 mcg of oral misoprostol. Women delivering without a skilled attendant also need uterotonic for PPH prevention, so oral misoprostol should be given by a community health worker who is present.
- Late cord clamping (performed after 1 to 3 minutes after birth) is still recommended for all births to reduce newborn anaemia while beginning essential newborn care at the same time.
- Caution should be exercised when opting for ergot derivatives (Methergine) for the prevention of PPH as these drugs have clear contraindications in women with hypertensive disorders. Thus, it is probably safer to avoid the use of ergot derivatives in unscreened populations.
- IV canula must be used during referral of high risk cases especially for severe anemic pregnant women.

In summary

Existing guidelines

- All women giving birth should receive uterotonics during the third stage of labour for the prevention of PPH
- Oxytocin is recommended as the uterotonic drug of choice.
- CCT once uterus is contracted & cord is cut
- Uterine massage to keep uterus contracted

Revised recommendations

- AMTSL should only be done by SBA/trained staff.
- Oxytocin remains the uterotonic of choice for AMTSL
- In settings where oxytocin is unavailable, oral misoprostol (600 µg) is recommended.
- Oral misoprostol should be given by a community health worker who is present.
- CCT is contra-indicated in settings where skilled birth attendants are not available.

2. Treatment of PPH at Facility Level

The opportunity to follow a woman with PPH through the health system, highlighting how effective programs/ interventions must think beyond traditional prevention approaches and establish ways to facilitate quality treatment of PPH as quickly as possible as part of basic emergency obstetric care. The need for a broader focus on the continuum of care in a health system was emphasized, beginning with prevention and first-line treatment measures, advancing to temporizing measures and ending with emergency services. To this end, different program approaches to PPH management were presented, all with an eye towards task-sharing PPH management down to where women deliver. However, major thrust by the Experts given on the following interventions:

- Intramuscular oxytocin* alone still is the recommended uterotonic drug for the treatment of PPH. IV oxytocin is the drug of choice over other drugs (ergometrine and prostaglandins), including for women have already received it for PPH prevention.
- If bleeding is not controlled after use of oxytocin, it is recommended to switch over to the next uterotonic IV methergine, fixed dose or sublingual misoprostol 800 mcg.
- Discussion was also held as to whether misoprostol can be given as the second line of treatment. To this, the expert group felt that in India, since oxytocin is available in all labour rooms, we should only give oxytocin.
- The use of isotonic crystalloids is recommended in preference to the use of colloids for the intravenous fluid resuscitation of women with PPH.
- The use of tranexamic acid is recommended for the treatment of PPH if oxytocin and other uterotonics fail to stop the bleeding or the bleeding may be partly due to trauma.

*Always store the oxytocin with appropriate temperature management and save misoprostol from moisture. Depending on the manufacturer and regulatory agency specification, all oxytocin products must be stored in either controlled room temperature (25°C or lower) or refrigerated storage (2°C to 8°C) to ensure quality. (PATH 2011)

- The use of intrauterine balloon tamponade is recommended for the treatment of PPH due to uterine atony. It can be used for women who do not respond to uterotonics or if uterotonics are not available. This procedure potentially can avoid surgery and is appropriate while awaiting transfer to a higher-level facility. Regarding mechanical treatment through various balloon tamponade, group mentioned that Bakri is expensive, condom catheters can be tried. Since this is a life-saving technique, it can be used only after proper training. These can be kept in advanced skill labs for training of health providers. This approach can be tried at PHC level having presence of Medical Officer. Group suggested to refer to some evidence to understand which cadre of health service provider has been able to use the balloon technique.
- Use of bimanual uterine compression & external aortic compression for the treatment of PPH due to uterine atony after vaginal birth.
- The use of uterine packing is not recommended for the treatment of PPH due to uterine atony after vaginal birth.
- The use of uterine artery embolization is recommended as a treatment for PPH due to uterine atony, if other measures have failed.
- If bleeding does not stop in spite of treatment (using uterotonics and other available interventions), the use of surgical interventions (Modified B-Lynch) is recommended.
- All high case load tertiary care facilities should have blood storage unit in the Maternity wing catering to requirement of Obstetrics OT & Labour room. This is besides the blood bank of that tertiary facility.
- All district hospitals must be competent to manage severe & moderate anemia.
- All tertiary care facilities and district hospitals must have OBGY specialist and their support medical staff trained in life saving skills for management of shock, septicemia etc

In summary

Existing guideline

- Use of other alternative Uterotonics not mentioned
- Fluid resuscitation with Ringer Lactate/Normal Saline (RL/NS)
- In existing as well as revised guidelines the following treatment has been mentioned: Bimanual uterine compression, external aortic compression & Intrauterine balloon tamponade

Revised recommendations

- If bleeding is not controlled after use of oxytocin, it is recommended to switch over to the next uterotonic IV methergine, fixed dose or sublingual misoprostol 800 mcg.
- Early fluid resuscitation with isotonic crystalloids is essential for the management of shock.
- The use of tranexamic acid is recommended for the treatment of PPH if oxytocin and other uterotonics fail to stop the bleeding or the bleeding may be partly due to trauma.
- The use of intrauterine balloon tamponade can be tried at PHC level having presence of Medical Officer.
- IV canula must be used during referral of high risk cases
- If there is persistent bleeding and the relevant resources are available, uterine artery embolization is recommended
- If bleeding does not stop in spite of treatment (using uterotonics and other available interventions), the use of surgical interventions (Modified B Lynch) is recommended.
- Surgical interventions are more applicable to Gynaecologists and Surgeons at EmOC centres

Referral Transportation: Quick initial Assessment and Referral

Improving access for women with obstetric complications can only be effective where there is a functional referral system, equipment and medical supplies including emergency drugs. The use of formal protocols for referral of women to a higher level of care is recommended for health facilities.

- Make initial assessment, start basic treatment and stabilize the patient
- Call/ Shout for help
- Assess circulation, airway, breathing (CAB)
- Obtain an IV line & start fluid replacement preferably with crystalloid fluid
- Monitor, pulse, BP & respiration
- Catheterize bladder & monitor urine output
- Assess need for blood transfusion
- Start IV Oxytocin infusion & consider:
 - Uterine massage
 - Bimanual uterine compression
 - External aortic compression
 - Balloon or condom tamponade
- Transfer with ongoing IV uterotonic infusion.
- Be ready at all times to transfer to a higher level facility if the patient is not responding to the treatment or a treatment cannot be administered at home/ facility. Ensure client will get assured services at higher referral centres

Transporting a woman who is bleeding

- Elevate legs to improve blood supply to vital organs
- Keep the woman warm
- Send a skilled provider with the woman to ensure an open airway, to deliver first aid if the woman goes into shock
- Continue uterine massage during transport
- Provide bimanual uterine compression (external if possible and internal if necessary)

Recommendations for an Effective Advanced Referral System

- An adequately resourced referral Center (meaning trained staff, equipment's, supplies etc)
- Communications and feedback systems
- Assured Referral Transport
- Agreed setting-specific protocols for the identification of complications
- Personnel trained in their use
- Teamwork between referral levels
- Unified records system

**Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Nirman Bhawan, New Delhi - 110011
www.mohfw.in & www.nhm.gov.in**