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Improving Maternal Health: The Safe Childbirth Checklist as a Tool for Reducing Maternal Mortality and Morbidity

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Additional information is available at the end of the chapter

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Abstract

Ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development. The UN's adoption of the sustainable development goals (SDGs) in September 2015 reaffirmed the reduction of maternal and newborn mortality as global priorities in the coming decade. The World Health Organisation Safe Childbirth Checklist has been developed to ensure the delivery of essential maternal and perinatal care practices. The Safe Childbirth Checklist aims to help frontline health workers to prevent avoidable childbirth-related mortality and morbidity. The Checklist addresses the major causes of maternal death (haemorrhage, infection, obstructed labour and hypertensive disorders), intrapartum-related stillbirths (inadequate intrapartum care), and neonatal deaths (birth asphyxia, infection and complications related to prematurity). Successful completion of checklist items by healthcare workers will help keep the woman and baby safe as the checklist catalogues a core set of practices that are proven to reduce maternal and newborn harm. The practices described in the checklist items should be conducted at every birth. This chapter utilises experiences gained in Cameroon, Ghana, Nigeria and Zambia during the Pfizer Independent Grant for Learning and Change supported Medical Women's Association of Nigeria Improving Maternal Health in sub-Saharan Africa project to describe the checklist and how it can be used to deliver lifesaving midwifery care and enhance maternal health.

Keywords: maternal health, safe childbirth checklist, childbirth, safety, quality of care

1. Introduction

The high rate of maternal mortality and morbidity, especially in developing countries calls for international concern. Although the ongoing Sustainable Development Goals (SDGs) has included its prevention as one of the major indicators for measuring global development by the year 2030; success can only ensue if the challenges faced by low-resource settings are recognised and tackled. In about 130 million births per year, an estimated 303,000 result in the mother's death, and 2.6 million in stillbirths [1]. The majority of these deaths, mostly preventable, occur in low-resource settings [2, 3]. The World Health Organisation (WHO) thus developed the Safe Childbirth Checklist to support the delivery of essential birth practices for the prevention of maternal and newborn deaths [4]. The Safe Childbirth Checklist summarises the major direct causes of maternal death such as haemorrhage, hypertensive disorders, infections, and obstructed labour. The Checklist also addresses intrapartum-related stillbirths resulting from inadequate care during labour and delivery and neonatal deaths arising from birth asphyxia, complications related to prematurity, and infections. It was developed from evidence-based birth practices and tested in 10 countries across Asia and Africa [4]. Africa and Asia contribute over 90% of the world's maternal and perinatal deaths.

Childbirth is a complex but physiological process necessitating, sometimes difficult, sometimes complicated steps that prevent adverse outcomes for the mother and her newborn child. Healthcare givers may find it difficult to simply remember all of the relevant information, and performing all the steps perfectly and in the precise order may become challenging especially in the busy labour ward. The WHO Safe Childbirth Checklist is a simple quality improvement tool that reminds healthcare workers to deliver high-quality care from when the woman is admitted, through childbirth, until the woman and baby are safely discharged home.

Checklists prompt users to remember to carry out essential tasks and have long been fundamental to maintaining safety when flying aeroplanes [5]. In other settings, professionals are successfully using checklists to organise large amounts of complex information, to remind themselves to perform crucial duties, and to ultimately do their jobs more effectively and proficiently [5]. In recent years, research on checklists in the health sector has been associated with improved safety with trials of checklist programmes in intensive care medicine and surgery demonstrating significant reductions in complications and deaths [6].

Thus, the WHO, together with obstetricians, paediatricians, nurses, midwives, patient safety experts, developed the WHO Safe Childbirth Checklist and an implementation guide [4] to help healthcare workers improve adherence to proven maternal and newborn care practices. Identifying effective methods to save lives at birth is a global priority to support progress towards the SDGs. The Safe Childbirth Checklist (**Figures 1 and 2**) is a list of evidence-based practices derived from WHO guidelines [7–15] that target the major global causes of maternal deaths (haemorrhage, hypertensive disorders, infection, and obstructed labour), intrapartum-related stillbirths (inadequate intrapartum care) and neonatal deaths (intrapartum-related events, infection and complications of prematurity). Each checklist item is a critical action or practice that, if missed or left undone, can lead to severe harm for both the mother and or the newborn.

BEFORE BIRTH

WHO Safe Childbirth Checklist



1

On Admission

Does mother need referral?

- ☐ No
☐ Yes, organized

Check your facility's criteria

Partograph started?

- ☐ No, will start when ≥ 4 cm
☐ Yes

Start plotting when cervix ≥ 4 cm, then cervix should dilate ≥ 1 cm/hr
 • Every 30 min: plot HR, contractions, fetal HR
 • Every 2 hrs: plot temperature
 • Every 4 hrs: plot BP

Does mother need to start:

Antibiotics?

- ☐ No
☐ Yes, given

Ask for allergies before administration of any medication

Give antibiotics to mother if any of:

- Mother's temperature $\geq 38^{\circ}\text{C}$
- History of foul-smelling vaginal discharge
- Rupture of membranes > 18 hrs

Magnesium sulfate and antihypertensive treatment?

- ☐ No
☐ Yes, magnesium sulfate given
☐ Yes, antihypertensive medication given

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP > 160 mmHg
 • Goal: keep BP $< 150/100$ mmHg

- ☐ **Confirm supplies are available to clean hands and wear gloves for each vaginal exam.**

- ☐ **Encourage birth companion to be present at birth.**

- ☐ **Confirm that mother or companion will call for help during labour if needed.**

Call for help if any of:

- Bleeding
- Severe abdominal pain
- Severe headache or visual disturbance
- Unable to urinate
- Urge to push

This checklist is not intended to be comprehensive and should not replace the case notes or partograph. Additions and modifications to fit local practice are encouraged. For more information on recommended use of the checklist, please refer to the "WHO Safe Childbirth Checklist Implementation Guide" at: www.who.int/patientsafety.

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WHO Safe Childbirth Checklist

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BEFORE BIRTH

WHO Safe Childbirth Checklist

World Health
Organization

2

Just Before Pushing (Or Before Caesarean)

Does mother need to start:*Antibiotics?*

- ☐ No
☐ Yes, given

Magnesium sulfate and antihypertensive treatment?

- ☐ No
☐ Yes, magnesium sulfate given
☐ Yes, antihypertensive medication given

Ask for allergies before administration of any medication

Give antibiotics to mother if any of:

- Mother's temperature $\geq 38^{\circ}\text{C}$
- History of foul-smelling vaginal discharge
- Rupture of membranes >18 hrs
- Caesarean section

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP >160 mmHg

- Goal: keep BP $<150/100$ mmHg

Confirm essential supplies are at bedside and prepare for delivery:*For mother*

- ☐ Gloves
☐ Alcohol-based handrub or soap and clean water
☐ Oxytocin 10 units in syringe

For baby

- ☐ Clean towel
☐ Tie or cord clamp
☐ Sterile blade to cut cord
☐ Suction device
☐ Bag-and-mask

Prepare to care for mother immediately after birth:

Confirm single baby only (not multiple birth)

1. Give oxytocin within 1 minute after birth
2. Deliver placenta 1-3 minutes after birth
3. Massage uterus after placenta is delivered
4. Confirm uterus is contracted

Prepare to care for baby immediately after birth:

1. Dry baby, keep warm
2. If not breathing, stimulate and clear airway
3. If still not breathing:
 - clamp and cut cord
 - clean airway if necessary
 - ventilate with bag-and-mask
 - shout for help

- ☐ **Assistant identified and ready to help at birth if needed.**

This checklist is not intended to be comprehensive and should not replace the case notes or partograph. Additions and modifications to fit local practice are encouraged. For more information on recommended use of the checklist, please refer to the "WHO Safe Childbirth Checklist Implementation Guide" at: www.who.int/patientsafety.

AFTER BIRTH

WHO Safe Childbirth Checklist



3

Soon After Birth (Within 1 Hour)

Is mother bleeding abnormally?

- ☐ No
☐ Yes, shout for help

If bleeding abnormally:

- Massage uterus
- Consider more uterotonic
- Start IV fluids and keep mother warm
- Treat cause: uterine atony, retained placenta/fragments, vaginal tear, uterine rupture

Does mother need to start:

Antibiotics?

- ☐ No
☐ Yes, given

Ask for allergies before administration of any medication
 Give antibiotics to mother if placenta manually removed or if mother's temperature $\geq 38^{\circ}\text{C}$ and any of:

- Chills
- Foul-smelling vaginal discharge

If the mother has a third or fourth degree of perineal tear give antibiotics to prevent infection

Magnesium sulfate and antihypertensive treatment?

- ☐ No
☐ Yes, magnesium sulfate given
☐ Yes, antihypertensive medication given

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP > 160 mmHg
 • Goal: keep BP $< 150/100$ mmHg

Does baby need:

Referral?

- ☐ No
☐ Yes, organized

Check your facility's criteria.

Antibiotics?

- ☐ No
☐ Yes, given

Give baby antibiotics if antibiotics given to mother for treatment of maternal infection during childbirth or if baby has any of:

- Respiratory rate $> 60/\text{min}$ or $< 30/\text{min}$
- Chest in-drawing, grunting, or convulsions
- Poor movement on stimulation
- Baby's temperature $< 35^{\circ}\text{C}$ (and not rising after warming) or baby's temperature $\geq 38^{\circ}\text{C}$

Special care and monitoring?

- ☐ No
☐ Yes, organized

Arrange special care/monitoring for baby if any:

- More than 1 month early
- Birth weight < 2500 grams
- Needs antibiotics
- Required resuscitation

☐ **Started breastfeeding and skin-to-skin contact (if mother and baby are well).**

☐ **Confirm mother / companion will call for help if danger signs present.**

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AFTER BIRTH

WHO Safe Childbirth Checklist



4

Before Discharge

☐ Confirm stay at facility for 24 hours after delivery.

Does mother need to start antibiotics?

- ☐ No
☐ Yes, given and delay discharge

Ask for allergies before administration of any medication

Give antibiotics to mother if any of:

- Mother's temperature $\geq 38^{\circ}\text{C}$
- Foul-smelling vaginal discharge

Is mother's blood pressure normal?

- ☐ No, treat and delay discharge
☐ Yes

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP > 160 mmHg

- Goal: keep BP $< 150/100$ mmHg

Is mother bleeding abnormally?

- ☐ No
☐ Yes, treat and delay discharge

If pulse > 110 beats per minute and blood pressure < 90 mmHg

- Start IV and keep mother warm
- Treat cause (hypovolemic shock)

Does baby need to start antibiotics?

- ☐ No
☐ Yes, give antibiotics, delay discharge, give special care

Give antibiotics to baby if any of:

- Respiratory rate $> 60/\text{min}$ or $< 30/\text{min}$
- Chest in-drawing, grunting, or convulsions
- Poor movement on stimulation
- Baby's temperature $< 35^{\circ}\text{C}$ (and not rising after warming) or baby's temperature $\geq 38^{\circ}\text{C}$
- Stopped breastfeeding well
- Umbilicus redness extending to skin or draining pus

Is baby feeding well?

- ☐ No, establish good breastfeeding practices and delay discharge
☐ Yes

☐ Discuss and offer family planning options to mother.

☐ Arrange follow-up and confirm mother / companion will seek help if danger signs appear after discharge.

Danger Signs

Mother has any of:

- Bleeding
- Severe abdominal pain
- Severe headache or visual disturbance
- Breathing difficulty
- Fever or chills
- Difficulty emptying bladder
- Epigastric pain

Baby has any of:

- Fast/difficult breathing
- Fever
- Unusually cold
- Stops feeding well
- Less activity than normal
- Whole body becomes yellow

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WHO Safe Childbirth Checklist

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Figure 1. The WHO Safe Childbirth Checklist.

BEFORE BIRTH

WHO Safe Childbirth Checklist



Name:

Folder No:

1

On Admission

Does mother need referral?

- ☐ No
☐ Yes, organized

Check your facility's criteria

Partograph started?

- ☐ No, will start when ≥ 4 cm
☐ Yes

Start plotting when cervix ≥ 4 cm, then cervix should dilate ≥ 1 cm/hr
 • Every 30 min: plot HR, contractions, fetal HR
 • Every 2 hrs: plot temperature
 • Every 4 hrs: plot BP

Does mother need to start:

Antibiotics?

- ☐ No
☐ Yes, given

Ask for allergies before administration of any medication

Give antibiotics to mother if any of:

- Mother's temperature $\geq 38^{\circ}\text{C}$
- History of foul-smelling vaginal discharge
- Rupture of membranes > 18 hrs

Magnesium sulfate and antihypertensive treatment?

- ☐ No
☐ Yes, magnesium sulfate given
☐ Yes, antihypertensive medication given

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP > 160 mmHg
 • Goal: keep BP $< 150/100$ mmHg

- ☐ Confirm supplies are available to clean hands and wear gloves for each vaginal exam.

- ☐ Encourage birth companion to be present at birth.

NA

- ☐ Confirm that mother or companion will call for help during labour if needed.

Call for help if any of:

- Bleeding
- Severe abdominal pain
- Severe headache or visual disturbance
- Unable to urinate
- Urge to push

This checklist is not intended to be comprehensive and should not replace the case notes or partograph. Additions and modifications to fit local practice are encouraged. For more information on recommended use of the checklist, please refer to the "WHO Safe Childbirth Checklist Implementation Guide" at: www.who.int/patientsafety.

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BEFORE BIRTH

WHO Safe Childbirth Checklist



Name:

Folder No:

2

Just Before Pushing (Or Before Caesarean)

Does mother need to start:

Antibiotics?

- ☐ No
☐ Yes, given

Magnesium sulfate and antihypertensive treatment?

- ☐ No
☐ Yes, magnesium sulfate given
☐ Yes, antihypertensive medication given

Ask for allergies before administration of any medication

Give antibiotics to mother if any of:

- Mother's temperature $\geq 38^{\circ}\text{C}$
- History of foul-smelling vaginal discharge
- Rupture of membranes >18 hrs
- Caesarean section

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP >160 mmHg

- Goal: keep BP $<150/100$ mmHg

Confirm essential supplies are at bedside and prepare for delivery:

For mother

- ☐ Gloves
☐ Alcohol-based handrub or soap and clean water
☐ Oxytocin 10 units in syringe

For baby

- ☐ Clean towel
☐ Sterile blade to cut cord
☐ Suction device
☐ Bag-and-mask

Prepare to care for mother immediately after birth:

Confirm single baby only (not multiple birth)

1. Give oxytocin within 1 minute after birth
2. Deliver placenta 1-3 minutes after birth
3. Massage uterus after placenta is delivered
4. Confirm uterus is contracted

Prepare to care for baby immediately after birth:

1. Dry baby, keep warm
2. If not breathing, stimulate and clear airway
3. If still not breathing:
 - clamp and cut cord
 - clean airway if necessary
 - ventilate with bag-and-mask
 - shout for help

- ☐ **Assistant identified and ready to help at birth if needed.**

This checklist is not intended to be comprehensive and should not replace the case notes or partograph. Additions and modifications to fit local practice are encouraged. For more information on recommended use of the checklist, please refer to the "WHO Safe Childbirth Checklist Implementation Guide" at: www.who.int/patientsafety.

AFTER BIRTH

WHO Safe Childbirth Checklist



Name:

Folder No:

3

Soon After Birth (Within 1 Hour)

Is mother bleeding abnormally?

- ☐ No
☐ Yes, shout for help

If bleeding abnormally:

- Massage uterus
- Consider more uterotonic
- Start IV and keep mother warm
- Treat cause: uterine atony, retained placenta/fragments, vaginal tear, uterine rupture

Does mother need to start:

Antibiotics?

- ☐ No
☐ Yes, given

Ask for allergies before administration of any medication
 Give antibiotics to mother if placenta manually removed or if mother's temperature $\geq 38^{\circ}\text{C}$ and any of:

- Chills
- Foul-smelling vaginal discharge

If the mother has a third or fourth degree of perineal tear give antibiotics to prevent infection

Magnesium sulfate and antihypertensive treatment?

- ☐ No
☐ Yes, magnesium sulfate given
☐ Yes, antihypertensive medication given

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP > 160 mmHg
 • Goal: keep BP $< 150/100$ mmHg

Does baby need:

Referral?

- ☐ No
☐ Yes, given

Check your facility's criteria.

Antibiotics?

- ☐ No
☐ Yes, given

Give baby antibiotics if antibiotics given to mother for treatment of maternal infection during childbirth or if baby has any of:

- Respiratory rate $> 60/\text{min}$ or $< 30/\text{min}$
- Chest in-drawing, grunting, or convulsions
- Poor movement on stimulation
- Baby's temperature $< 35^{\circ}\text{C}$ (and not rising after warming) or baby's temperature $\geq 38^{\circ}\text{C}$

Special care and monitoring?

- ☐ No
☐ Yes, organized

Arrange special care/monitoring for baby if any:

- More than 1 month early
- Birth weight < 2500 grams
- Needs antibiotics
- Required resuscitation

☐ **Started breastfeeding and skin-to-skin contact (if mother and baby are well).**

☐ **Confirm mother / companion will call for help if danger signs present.**

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WHO Safe Childbirth Checklist

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Name:

Folder No:

4

Before Discharge

☐ Confirm stay at facility for 24 hours after delivery.

Does mother need to start antibiotics?

- ☐ No
- ☐ Yes, given and delay discharge

Ask for allergies before administration of any medication

Give antibiotics to mother if any of:

- Mother's temperature $\geq 38^{\circ}\text{C}$
- Foul-smelling vaginal discharge

Is mother's blood pressure normal?

- ☐ No, treat and delay discharge
- ☐ Yes

Give magnesium sulfate to mother if any of:

- Diastolic BP ≥ 110 mmHg and 3+ proteinuria
- Diastolic BP ≥ 90 mmHg, 2+ proteinuria, and any: severe headache, visual disturbance, epigastric pain

Give antihypertensive medication to mother if systolic BP > 160 mmHg

- Goal: keep BP $< 150/100$ mmHg

Is mother bleeding abnormally?

- ☐ No
- ☐ Yes, treat and delay discharge

If pulse > 110 beats per minute and blood pressure < 90 mmHg

- Start IV and keep mother warm
- Treat cause (hypovolemic shock)

Does baby need to start antibiotics?

- ☐ No
- ☐ Yes, give antibiotics, delay discharge, give special care

Give antibiotics to baby if any of:

- Respiratory rate $> 60/\text{min}$ or $< 30/\text{min}$
- Chest in-drawing, grunting, or convulsions
- Poor movement on stimulation
- Baby's temperature $< 35^{\circ}\text{C}$ (and not rising after warming) or baby's temperature $\geq 38^{\circ}\text{C}$
- Stopped breastfeeding well
- Umbilicus redness extending to skin or draining pus

Is baby feeding well?

- ☐ No, establish good breastfeeding practices and delay discharge
- ☐ Yes

☐ Discuss and offer family planning options to mother.

☐ Arrange follow-up and confirm mother / companion will seek help if danger signs appear after discharge.

Danger Signs

Mother has any of:

- Bleeding
- Severe abdominal pain
- Severe headache or visual disturbance
- Breathing difficulty
- Fever or chills
- Difficulty emptying bladder
- Epigastric pain

Baby has any of:

- Fast/difficult breathing
- Fever
- Unusually cold
- Stops feeding well
- Less activity than normal
- Whole body becomes yellow

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Figure 2. The WHO Safe Childbirth Checklist adapted for UPTH ©Rosemary Ogu.

2. Methodology

This chapter utilises experiences gained in Cameroon, Ghana, Nigeria and Zambia during the Pfizer Independent Grant for Learning and Change supported Medical Women's Association of Nigeria Improving Maternal Health in sub-Saharan Africa project to describe how the checklist can be used to deliver lifesaving midwifery care and enhance maternal health. This chapter also outlines the 'how to use the checklist' as elucidated in the WHO implementation guide in this chapter [4].

3. How to use the Checklist

This segment describes how to use the checklist to deliver life-saving birth practices. Tips on how to effectively use the checklist as a quality improvement tool, advocating and getting supplies for use in maternity units are included.

3.1. Pause points

The checklist is envisioned to be used at four points in time; these points are called 'pause points'. At each pause point, a set of essential practices; also known as the 'checklist items' should be completed. Each checklist item should be marked with a pen when that item is completed. The healthcare worker who is caring for the woman and baby at the time a pause point occurs should be responsible for completing the checklist then. Labour ward staff in Port Harcourt Nigeria found the checklist facilitated best practices and improved patient satisfaction with care [16].

Checklist users may be nurses, midwives, physicians, or other clinicians; as seen in Cameroon, Ghana and Nigeria. In Lusaka- Zambia, none of the sampled institutions were using the checklist. The recommended approach for using the checklist is for healthcare workers to first conduct their normal practice and then use the checklist to verify that the checklist items have been correctly performed. One checklist should be used for every mother and her baby; in Port Harcourt; the checklist was modified to include the mother's name and folder number (**Figure 2**).

There are four pause points. Pause points are therefore the specific point in time when staff are asked to temporarily stop whatever else they are doing and verify or check that essential clinical practices have been completed [4]. Pause points thus happen at critical moments in care when complications can be averted, or adequately treated; or when it is expedient for healthcare workers to check the woman and baby. The four pause points are:

1. at the time of admission;
2. just before the woman starts pushing (or before caesarean section);
3. within 1 h after birth; and
4. before discharge from the facility.

These pause points may not all occur in the same room. For instance, at the University of Port Harcourt Teaching Hospital Obstetric Unit in Nigeria and the Yaounde Gynaeco-Obstetric

and Paediatric Hospital, Yaounde, Cameroon; pause point 1 takes place at the admission desk, pause point 2 occurs in the labour room, pause point 3 in the postpartum bay, and pause point 4 occurs in the postpartum ward. In other facilities that are small, or those implementing the recent recommendation that women should labour and deliver in the same room and on the same bed, all pause points will occur in a single area. If the pause points occur in separate areas, it is vital that the checklist accompany the woman and baby when they are moved from one area to the other. In our experiences, this is achieved by keeping the checklist with the woman's chart or inside her medical record folder.

3.2. Checklist items

The 'checklist items' are the set of evidence-based obstetric practices that should be carried out. They specifically address the major global causes of maternal and newborn deaths and comprise a core set of evidence-based practices that have been proven to reduce and prevent maternal and newborn harm. These practices are to be carried out at every birth. Supplemental information is available in the checklist for many items in order to improve care. This information is located adjacent to the checklist item it describes. For instance, the supplemental information for checklist items relating to medications describes the indications for antibiotic use. Dosages and treatment courses for all medications should be aligned with WHO or local guidelines. Every effort should be made to have supplies and consumables available for use when needed; otherwise, the indication will be present, but the health caregiver cannot implement the needed evidence base practice because the necessary supplies are unavailable. Our experiences show that in all instances, advocacy is necessary for improved supplies of equipment, tools, and consumables. Refresher courses periodically for health workers are also necessary to update and refresh knowledge.

After repeated use of the checklist, users may come to memorise the supplemental information. In these situations, users should still run the checklist by reviewing and marking each checklist item to be sure that all essential practices are conducted.

Each item on the Safe Childbirth Checklist is described in detail below.

3.2.1. *Pause point 1: on admission*

At the time of admission; evaluation of the mother is essential to review her general status, discover and manage complications that she may already have. An evaluation also confirms if referral to another facility is indicated. At this pause point, the woman and her companion are counselled for labour and delivery, educated about the danger signs and what to do thereafter.

3.2.1.1. *Does mother need referral?*

This checklist item ensures that mothers with indications for referral are promptly referred. Presentation in extremis is one reason why women die in health facilities. This must be avoided at all times. The WHO Checklist implementation guide [4] advises the skilled birth attendant confirm whether the mother needs a referral to another facility by reviewing the facility's criteria for a referral. If indicated, the guide [4] further advises the healthcare worker to take immediate action to organise a safe transfer.

The healthcare worker should inform the mother and birth companion about the need for the referral so they can act fast. Informing healthcare workers at the facility to which the mother is being referred enable the receiving facility to prepare and in a position to deliver care as soon as the mother arrives. This is imperative to save lives and minimise morbidity and mortality. A list of indications for referral in the admission area helps healthcare workers to quickly identify mothers that should be referred. Ensuring communication tools/means of transportation are available is essential in reducing maternal morbidity and mortality as experiences show that after referral; mothers in low resource settings may find it difficult to go to the referred facility due to financial constraints.

3.2.1.2. *Partograph started?*

The partograph is a tool that graphically represents the events in labour and thus assesses the progress of labour. The partographs alert and action lines enable birth attendants to recognise and take action to prevent and manage prolonged and obstructed labour. The use of the partograph prevents prolonged labour, reduces operative intervention, and improves neonatal outcomes [7]. The skilled birth attendant should fill out a partogram first page for every patient who comes on admission in the labour ward and start the partograph when active labour is established or when a mother's cervical dilation is 4 cm or more. Every 30 min, the mother's heart rate, number of contractions in 10 min, and the foetal heart rate should be checked and charted on the partograph. The mother's temperature should be checked every 2 h and plotted while her mother's blood pressure is checked and plotted every 4 h. If at the time of admission, the mother is not in active labour, then the partograph is attached to her chart or medical record folder. The partograph is then started when her cervical dilatation reaches 4 cm. Refresher courses on the use of partograph should be organised periodically for obstetric unit staff to enhance the use of the partograph in adequately monitoring labour.

3.2.1.3. *Does mother need to start antibiotics?*

Antibiotics prevent and treat bacterial infections. Antibiotics should ideally be stocked in the labour ward and administered as soon as indicated to improve outcomes. Antibiotic treatment prevents infection-related complications in the mother, the foetus, and in the newborn. The skilled birth attendant should confirm whether the mother needs antibiotics at the time of admission and if indicated; for example, if the mother has a temperature of or greater than 38°C, rupture of the membranes greater than 18 h or foul-smelling vaginal discharge; the antibiotics should be immediately administered. In Cameroon, use of the checklist in about 1000 deliveries revealed that infections complications are less when the checklist is in use compared to when the checklist is not in use.

3.2.1.4. *Does mother need to start magnesium sulphate?*

Magnesium sulphate is the gold standard for the prevention of Eclampsia. Pre-eclampsia is a severe form of hypertension or very high blood pressure in pregnancy ($\geq 160/110$ mmHg) with its associated complications of abruptio, eclampsia and stroke for the mother, and intrauterine foetal death for the baby. Prophylactic treatment of pre-eclampsia with magnesium sulphate and

antihypertensive treatment prevents these complications. At this pause point at the time of admission, the Skilled birth attendant should confirm from the blood pressure reading and presence of proteinuria on urinalysis whether the mother needs magnesium sulphate and antihypertensive treatment. If yes, i.e. the mother has diastolic blood pressure equal to or greater than 110 mmHg with proteinuria of 3+, or if her diastolic blood pressure is equal to or greater than 90 mmHg with proteinuria of 2+ and any signs of pre-eclampsia (epigastric pain, severe headache or visual disturbance), the magnesium sulphate and antihypertensive agent should be urgently administered. Magnesium sulphate should continue for 24 h after childbirth or after the last convulsion. High blood pressure should be confirmed by the measurement of blood pressure on more than one occasion. If the mother's systolic blood pressure is equal to or greater than 160 mmHg, antihypertensives should be administered to lower and maintain blood pressure to just below 150/100 mmHg. If magnesium sulphate can only be administered after the patient has procured it, the patient financial constraints imply indicated magnesium sulphate is not administered when needed and foetomaternal outcomes remain poor similar to the experiences in India [17].

3.2.1.5. Does mother need to start antiretrovirals?

Transmission of HIV from positive mothers to their babies can occur during childbirth. Antiretroviral treatment (ART) reduce this risk. The skilled birth attendant should confirm whether the mother needs antiretrovirals at the time of admission and, if indicated, the antiretrovirals should be immediately administered. If the mother's HIV status is unknown, then an HIV test should be done. If a pregnant woman tests HIV-positive, then antiretroviral drugs should be administered and continued throughout labour, delivery, breastfeeding, and thereafter.

3.2.1.6. Confirm supplies are available near bedside to clean hands and wear gloves for each vaginal exam

This checklist item is so very necessary because healthcare workers with unclean hands can spread infections to mothers and babies. Practicing good hand hygiene prevents these infections. Puerperal sepsis is a major global cause of morbidity and mortality for mothers and babies. Healthcare workers should thus always thoroughly wash their hands with soap and clean water before and after they make contact with clients. If water is unavailable, as can happen in low resource setting; an alcohol-based hand rub should be used. Advocacy for hygiene supplies (i.e. soap, clean running water, or alcohol-based hand rub, clean gloves) must be included in the engagement with heads of facilities. Availability at all times promotes healthcare workers adherence to good hand hygiene practices. Correct techniques for hand hygiene should be practiced. This is so very important to improve outcomes. Availability of the checklist and its use in a setting of a dearth of clean water and consumables implies that foetomaternal outcomes will remain poor.

3.2.1.7. Encourage birth companion to be present at birth

Available evidence show that birth companions can help to improve health outcomes by providing support to the mother during the childbirth process. Birth companions can help to recognise danger signs, and thus alert the healthcare worker. A birth companion could be a family member, husband, partner, friend, community health worker, or facility staff. The

checklist implementation guide advocates that skilled birth attendant should encourage the presence of a birth companion during labour, birth, and the postpartum and postnatal periods [4]. The implementation guide [4] further encourages that a birth companion is present at the time of admission; and if a birth companion is not present at the time of admission, then the mother should be encouraged to identify one; the birth companion should be counselled on danger signs and encouraged to stay through the entire childbirth process.

3.2.1.8. Confirm that mother or companion will call for help during labour if needed

At the time of admission; the checklist encourages the healthcare worker to confirm that the parturient or birth companion will call for help if needed, if she feels like pushing and if any danger signs develop during labour: bleeding, severe abdominal pain, severe headache or visual disturbance, or inability to urinate. This is imperative as these danger signs portend complications which: are unpredictable, may happen at any time during childbirth and become more challenging to manage the longer they go undetected and untreated. It is thus crucial that healthcare workers detect and manage complications early. 'Danger signs' are signs and symptoms that reveal a complication may be developing or is already present. Many times, healthcare workers will recognise danger signs directly. However, due to the busy nature of the labour ward, the health worker is preoccupied at the instance a danger sign develops in a mother or baby. Thus, it is essential the parturient and her birth companion are vigilant and alert the healthcare workers. Findings reveal that many women are unaware of the danger signs in labour [18–20]. Mothers and birth companions should therefore be educated to recognise danger signs and to alert a healthcare worker immediately.

3.2.2. Pause point 2: just before pushing (or before caesarean)

After admission, the foetomaternal vital signs are monitored routinely. A deliberate check should be taken at pause point 2 which is the next pause point after admission; just before pushing or before a caesarean section. This allows the detection of complications that can occur during labour and enables the treatment. This pause point helps to prepare for the routine events and possible crisis situations that can occur.

3.2.2.1. Does mother need to start antibiotics?

As stated above, antibiotics help to prevent and treat infections. The Skilled birth attendant should confirm whether the mother needs antibiotics at the time that pushing starts or just before caesarean and, if indicated, the antibiotics should immediately be administered. The indications for antibiotics are a maternal temperature of 38°C or higher, membranes rupture greater than 18 h or foul-smelling vaginal discharge. All women undergoing caesarean delivery should receive antibiotics before skin incision.

3.2.2.2. Does mother need to start magnesium sulphate and antihypertensive treatment?

This question must be asked at this pause point as hypertensive disorders of pregnancy is a global cause of maternal mortality and morbidity. Between the time of admission and just before pushing; pre-eclampsia can arise. Prophylactic treatment with magnesium sulphate and antihypertensive

medicines will help prevent maternal and perinatal mortality and morbidity. The Skilled birth attendant should confirm whether the mother needs magnesium sulphate and antihypertensive treatment at the time that the second stage starts, and if indicated, magnesium sulphate should be administered immediately and blood pressure lowered with antihypertensives. Magnesium sulphate should continue for 24 h after childbirth or 24 h after the last convulsion.

3.2.2.3. *Confirm essential supplies are at the bedside and prepare for delivery*

The time of highest risk for complications in the mother and her newborn is the moment of birth and the first few minutes after birth. Availability of functioning equipment and supplies is key to preventing maternal and neonatal mortality and morbidity at this time. Crisis situations can evolve quickly, and healthcare workers will not have enough time to prepare once in a crisis situation. Therefore, preparations must be made beforehand for both routine care and potential crisis situations at every birth. Specifically, healthcare workers must prepare essential supplies and also prepare themselves to take essential actions. Advocacy to hospital managers should be undertaken [21], and innovation for supplies availability periodically carried out. The essential supplies must always be available, functioning and ready to use before the birth occurs.

Confirm that a ready packed delivery tray is available by the bedside. The tray should contain the following essential supplies: Gloves; Episiotomy and cord scissors, cord clamp, Syringe and Oxytocin, a clean towel to dry the baby immediately after birth, a suction device, and bag-and-mask. Confirm actions to prevent post-partum bleeding: administer 10 IU of oxytocin intramuscularly to the mother within 1 min of delivery; clamp and cut the cord before ensuring complete delivery of the placenta by controlled cord traction; massage the uterus immediately after the delivery of the placenta. These components of the active management of the third stage of labour help the uterus to contract and prevents bleeding.

The use of clean towels to dry the baby helps retain warmth while the suction device clears secretions from the baby's mouth and nose. These simple devices and actions help keep the baby alive.

As described in the WHO checklist implementation guide [4]; at pause point 2, the skilled birth attendant should review the steps involved in care for the baby immediately after birth to ensure a successful transition to extrauterine life.

3.2.2.4. *Assistant identified and ready to help at birth if needed*

Recall in pause point 1, the moment of childbirth and the first few minutes after are the time of highest risk for complications in the mother, and the baby. If a crisis occurs, the presence of an available assistant helps. They can assist in assessing the mother or baby, starting IV fluids, administering medications, organising referrals and calling for additional help.

3.2.2.5. *Is the mother bleeding abnormally?*

Obstetric haemorrhage is a major cause of maternal morbidity and mortality that must be detected and treated as soon as possible. It occurs because of uterine rupture, abruptio placenta, and placenta praevia. At this pause point; also assess the pulse of the mother: the first signs of

hypovolemic shock is a rising pulse rate. The skilled birth attendant should thus assess the mother for abnormal bleeding at this pause point just before pushing and if the mother is bleeding abnormally: call for help, expedite delivery and treat the specific cause of the abnormal bleeding.

3.2.3. Pause point 3: soon after birth (within 1 h)

At this pause point; complications that can occur soon after delivery can be detected and treated promptly if the mother and baby are reviewed soon after birth (within 1 h). This point also provides opportunity to educate the mother (and her companion) about danger signs for which she should call for help.

3.2.3.1. Is the mother bleeding abnormally?

Postpartum haemorrhage is a dreaded cause of morbidity and mortality. It is a major complication that must be detected and treated early if mortality and morbidity are to be averted. Postpartum bleeding can occur because of uterine atony, retained placenta or placental fragments, a vaginal tear, a cervical tear, or uterine rupture. Abnormal bleeding is defined as blood loss of 500 ml or any blood loss in which the mother's condition deteriorates. Thus, action must be taken at lower blood loss if a mother is severely anaemic. The skilled birth attendant should assess the mother for abnormal bleeding soon after birth (within 1 h) and if the mother is bleeding abnormally: massage the uterus, administer more uterotonic such as oxytocin, misoprostol, IV fluids, and treat the specific cause of the abnormal bleeding.

3.2.3.2. Does mother need to start antibiotics?

The Skilled birth attendant should confirm whether the mother needs antibiotics soon after birth (within 1 h) and, if indicated; for instance, if the mother's placenta was removed manually, she sustained a third or fourth degree perineal tear, or she has a temperature of 38°C or higher and chills, or foul-smelling vaginal discharge; the antibiotics should be administered immediately.

3.2.3.3. Does mother need to start magnesium sulphate and antihypertensive treatment?

A systolic blood pressure of more than 160 mmHg requires antihypertensive medications to lower and prevent eclampsia. Hypertensive disorders in pregnancy after delivery of the baby is a challenge; over 30% of eclamptic fits occur after childbirth. Thus, the Skilled birth attendant should confirm at this pause point whether the mother needs magnesium sulphate and antihypertensive treatment and, if indicated, the magnesium sulphate should be administered immediately. Remember to continue the magnesium sulphate for 24 or until 24 h after the last fit in mothers who had eclampsia.

3.2.3.4. Does baby need referral?

At this pause point after delivery, babies with complications should be reviewed and if necessary; referred to another facility. The Skilled birth attendant should thus confirm if baby needs referral within 1 h of delivery and expedite the process of a safe transfer. Pasting a list

of referral criteria in the postnatal area can serve as a useful reminder for healthcare workers and enable them to quickly identify babies who should be referred. The reason for referral should be made known to the mother and to healthcare workers at the receiving facility. Arrangements for the fastest means of transportation should be planned ahead of time.

3.2.3.5. *Does baby need antibiotics?*

Within 1 h after childbirth, the Skilled birth attendant should confirm whether the baby needs antibiotics and, if indicated, the antibiotics should be administered immediately to prevent infection related complications. Indications for antibiotics in newborns include maternal antibiotics administration, neonatal temperature $<35^{\circ}\text{C}$ or $\geq 38^{\circ}\text{C}$, neonatal respiratory rate >60 per minute or <30 per minute, chest indrawing, grunting, or convulsions; or poor movement on stimulation.

3.2.3.6. *Does baby need special care or monitoring?*

This checklist item is necessary because some babies may have risk factors that do not meet the criteria for referral, but for which special care or monitoring is yet required. Thus to be safe, such babies must receive special care. The indications are listed on the checklist and include baby is born more than 1 month early, has a low birthweight <2500 g, needs antibiotics or required resuscitation to help cry or breathe at birth.

3.2.3.7. *Start breastfeeding and skin-to-skin contact (if mother and baby are well)*

The Skilled birth attendant should confirm that breastfeeding and skin-to-skin contact have been started soon after birth (within 1 h). This is a practice that is free; every effort should be made to ensure it is carried out. Early breastfeeding is best. Evidence shows that early breastfeeding within 1 h of birth stimulate uterine contraction through oxytocin release, prevent postpartum haemorrhage and helps the baby to establish good bonding with the mother. Similarly, skin-to-skin contact of the baby with the mother is the best method for keeping the baby warm and helps to promote bonding between the baby and the mother. Complications can quickly occur if a baby's core temperature falls below the normal range. Skin-to-skin contact is done by placing the baby's skin against the mother's skin, and a clean sheet or blanket wrapped around them.

3.2.3.8. *Confirm mother/companion will call for help if danger signs present*

This checklist item reiterates the importance of danger sign awareness in newborns/mothers. Thus mothers (and birth companions) should be educated to recognise danger signs and to alert a healthcare worker immediately they discover a danger sign such as fast breathing or difficulty breathing, fever, unusually cold, not feeding well, less activity than normal, or the whole body becomes yellow. Also danger signs in mothers such as severe headache or visual disturbance, bleeding, severe abdominal pain, difficulty breathing, chills or fever or difficulty emptying her bladder.

3.2.4. *Pause point 4: before discharge*

The condition of mother and baby can deteriorate fast; the healthcare worker should check the mother and baby for signs or symptoms such as breathlessness, jaundice, poor suck, feeling

tired or too weak to get out of bed. The checklist items at this pause point ensure that the mother and baby are reviewed and evaluated before discharge, and adjudged mother and baby are healthy before discharge. This point also reminds the healthcare worker to arrange for follow-up care, ensure family planning options have been discussed and offered, and further educate the mother (and her companion) about possible danger signs after discharge from facility.

3.2.4.1. Confirm stay at facility for 24 h after delivery

This checklist item is to ensure mothers and newborns are at a place where care can be given should any complication arise. Evidence shows that half of all maternal deaths and 40% of neonatal deaths occur during the first 24 h after childbirth. The WHO, therefore, recommends that the mother and her newborn be observed in the health facility for at least 24 h after childbirth (before discharge). This is the ideal. However, our experiences reveal that lack of bed space in postnatal wards implies well mothers are discharged home early before 24 h after delivery.

3.2.4.2. Does mother need to start antibiotics?

This checklist item is at this pause point because puerperal sepsis is a major cause of maternal mortality and morbidity. The Healthcare worker should therefore confirm if the mother needs antibiotics before discharge and, if indicated, the discharge should be delayed while the antibiotics should be administered immediately. Indications for antibiotics include a maternal temperature of 38°C or higher, chills or foul-smelling vaginal discharge. Mastitis or infection of a caesarean section wound are troublesome conditions which may not be present at the time of discharge; thus women should be educated and counselled to report at the facility if these problems occur after discharge.

3.2.4.3. Is mother's blood pressure normal?

Before discharge of the mother, the Healthcare worker should check to ensure that the blood pressure is normal as preeclampsia can arise after childbirth and one-third of all the eclamptic seizures appear during the postpartum period. Also, following postpartum haemorrhage, normal blood pressure is a sign of stable condition. Thus all mothers must have a blood pressure check at the time of discharge.

3.2.4.4. Is mother bleeding abnormally?

The healthcare worker should ascertain whether the mother's bleeding is controlled before discharge and whether the pulse is normal. Examine the mother's abdomen to be sure the uterus is contracted and check blood loss from the vagina. If the mother's pulse rate is high, it may indicate that she is still bleeding, the mother should be treated, and not discharged. No mother with a high pulse rate or bleeding should be discharged.

3.2.4.5. Does baby need to start antibiotics?

Bacterial infections are a major cause of death in newborn babies. The healthcare worker should confirm whether the baby needs antibiotics before discharge and, if indicated,

antibiotics should be administered immediately, the discharge should be delayed and special care or monitoring should be given. Indications for antibiotics in newborns include: maternal antibiotics administration, neonatal temperature $<35^{\circ}\text{C}$ or $\geq 38^{\circ}\text{C}$, neonatal respiratory rate >60 per minute or <30 per minute; chest indrawing, grunting, or convulsions; or poor movement on stimulation, umbilicus redness extending to skin or draining pus; poor movement on stimulation; or has stopped breastfeeding well. It is imperative that babies with infection or risk factors for infection are treated immediately to prevent infection-related complications.

3.2.4.6. *Is baby feeding well?*

This checklist item prompts the healthcare worker to confirm before the mother and baby are discharged from the birth facility; that adequate breastfeeding has been established. In a baby; the signs of feeding well are active breastfeeding every 1–3 h with urination and bowel motions. If the newborn is not feeding well, the healthcare worker should delay discharge and assist the mother in establishing good feeding.

3.2.4.7. *Discuss and offer family planning options to mother*

This checklist item ensures the healthcare worker will remember to offer family planning options to the mother before her discharge. Recall that after a live birth, the recommended interval before attempting the next pregnancy is around 2 years. Family planning helps to prevent unwanted pregnancies and safeguards the mother. The healthcare worker should confirm that family planning options have been discussed with and offered to the mother before discharge. Family planning options include intrauterine devices, implantable rods, long-acting injectable progesterone (Depo-Provera), oral contraceptives, tubal ligation and condoms. Intra-uterine devices can be inserted immediately after childbirth, during or after the 6 weeks postpartum visit. Implantable devices (Implanon, Jadelle) can be inserted immediately after childbirth or after the puerperium. Breastfeeding mothers are generally advised not use combined hormonal contraceptives before 6 months postpartum. Health care workers using Checklist should also take the opportunity before discharge of the mother to discuss optimal birth spacing and schedule a tubal ligation procedure for mothers who wish.

3.2.4.8. *Arrange follow-up and confirm mother/companion will seek help if danger signs appear after discharge*

This checklist item ensures the healthcare worker arranges for routine follow-up for both the mother and baby. This must be arranged for before the mother-baby pair are discharged from the hospital. A healthy mother and baby at the time of discharge may develop complications after they have returned home. Mothers (and birth companions) should thus be educated to recognise danger signs themselves so care can be requested promptly: The danger signs are:

bleeding, severe abdominal pain, severe headache or visual disturbance, difficulty breathing, fever or chills, difficulty emptying bladder, or epigastric pain in the mother while in the baby; fast breathing or difficulty breathing, unusually cold, fever, stopping to feed well, less activity than normal, or whole body becoming yellow.

4. Discussion

Using the WHO Safe Childbirth Checklist serves as a powerful reminder of all that needs to be done during the critical period of childbirth. It also highlights the deficiencies in maternity service delivery: the dearth of manpower resources; the absence of antibiotics, anticonvulsants, antihypertensives and oxytocics; the lack of necessary supplies and commodities such as gloves, antiseptic lotions, clean towels, swabs, syringes; the unavailability of water supply and electricity; and the sociocultural determinants that make women present to health facilities in extremis.

Gaining, and sourcing for dedicated healthcare workers to champion the cause of the childbirth checklist revealed the dearth of human resources for health. Advocacy and dedication are vital at this point to introduce the checklist for use in maternity settings. Making the checklist available at the point of care is the next hurdle. Simple paper and ink may not be available, but a satisfactory buy-in by the facility managers ensure the checklist is printed and available at the necessary points. The need to ensure the available number of healthcare workers using the childbirth checklist can satisfactorily carry out the evidence base practices lead to training and workforce skills enhancement. This strengthened the services provided at the facilities.

On admission, using the checklist immediately exposes the absence of facility guidelines and criteria on whom to refer; thus effectively using the checklist strengthens the facility to provide guidelines and facility criteria for referral. At the same time; risk factors for poor maternal/perinatal outcomes such as prolonged drainage of liquor, fever, high blood pressure and proteinuria are easily detected because the healthcare worker must check these in order to tick the checklist. Same for the use of partograph; to tick the checklist, the healthcare worker has to open and use the partograph. To tick and confirm that mother or companion will call for help during labour if needed, the healthcare worker has to first counsel and educate the mother and her companion on the danger signs in pregnancy; these are usually not routinely done. Users of the checklist in Port Harcourt, Nigeria, and Yaounde, Cameroon, confirmed that the checklist helped them to counsel patients better.

At the various pause points: just before pushing (or before caesarean), soon after birth, or just before discharge; using the checklist helps to prepare for a safe, positive childbirth experience thus averting morbidity and mortality. Although the childbirth checklist does not introduce any new interventions for safe childbirth; the use reveals when the evidence-based interventions for safe childbirth were not being implemented; partographs not being used,

handwashing not being carried out, anticonvulsants not being administered for women with severe preeclampsia, active management of the third stage of labour not being rigorously followed; antibiotics not administered religiously before caesarean sections and skin contact for babies following deliveries not being implemented. These were the experiences we had as users of the checklist in sub-Saharan Africa. All in all; the evidence-based practices for safe childbirth were not being religiously implemented across the obstetric units mostly because of financial constraints and a dearth of human resources. The workforce skills upgrade was the first to improve; however skills alone is not enough to change outcomes; it improved satisfaction with work done; with care received, but with overall morbidity and mortality reduction, the change is not readily visible.

To enable visible change in maternal and perinatal morbidity and mortality outcomes, users of the checklist must in addition to workforce skills training and coaching, advocate for supplies and commodities availability. When antibiotics, anticonvulsants, oxytocics, antiseptics, water, electricity and safe childbirth checklist are available, effective delivery of services, counselling and respectful maternity care leads to improved maternal and perinatal outcomes.

5. Conclusion

Using the Safe Childbirth Checklist ensures the delivery of essential maternal and perinatal midwifery care practices. The Safe Childbirth Checklist addresses the major causes of maternal deaths, intrapartum-related stillbirths, and neonatal deaths and enables the caregiver to anticipate and avert complications. It also enables the caregiver to acknowledge the limitations/gaps in the currently available health service delivery unit and advocate for supplies and equipment. It has the potential to facilitate compliance with best practices for the delivery of evidence-based better birth. Complications from obstetric haemorrhage, infection, obstructed labour, hypertensive disorders, inadequate intrapartum care, birth asphyxia, infection, and complications related to prematurity can be minimised if the tenets of the checklist are followed. Its use in obstetric units is therefore advocated.

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Conflict of interest

The authors declare no conflict of interest.

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