

Review Article

The WHO safe childbirth checklist program implementation challenges and successful strategies for improving maternal and newborn quality of care and birth outcomes: a comprehensive review article

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ABSTRACT

The implementation of the World Health Organization Safe Childbirth Checklist (SCC) bundle, a novel childbirth safety program for institutional births, would increase the quality of essential childbirth practices linked with improved maternal and perinatal health outcomes. The objective of using SCC bundle is to improve quality of care during the delivery, immediate postpartum care, and pregnancy outcome and to enhance the satisfaction of beneficiaries visiting the health facilities and providing respectful maternity care to all pregnant women attending the public health facilities. A search of PubMed, Scopus, Embase, Science Direct, and MEDLINE databases revealed articles concerning safe childbirth checklist, quality improvement of labor room practice, maternal and newborn outcomes, and barriers and facilitators for its implementation. The research studies considered were reviews, systematic reviews, meta-analyses, randomized controlled trials and observational studies. The data was sought from 2013 to 2023. The SCC is a facility-based reminder tool aimed to assist healthcare workers in improving maternal and newborn care practices before, during, and after delivery, thereby expected to impact on perinatal mortality. The checklist also addresses intrapartum-related stillbirths resulting from inadequate care during labor and delivery and neonatal deaths arising from birth asphyxia, complications related to prematurity, and infections. The purpose of this review is to find the successful strategies to overcome the SCC implementation challenges so that it can be used as a standard tool by the health care workers in all health care settings to enhance the quality of childbirth practice and prevent the unwanted death, labor, and delivery complications.

Keywords: Child birth practices, Safe childbirth checklist implementation challenges, WHO safe childbirth checklist

INTRODUCTION

Approximately 300,000 mothers die during pregnancy or labor each year, and there are about 600,000 stillbirths attributable to intrapartum causes worldwide.^{1,2} More over 40% of maternal deaths take place during the intrapartum phase, and 45% happen within 24 hours of the newborn's birth.^{3,4} The majority of deaths might have been avoided, and the main barriers are not access to healthcare but rather the quality of care and the appropriate use of treatment.⁵ Global concern is

warranted due to the high rates of maternal mortality and morbidity, particularly in emerging nations. Success is only possible if the difficulties faced by low-resource settings are acknowledged and addressed. The U.N. Sustainable Development Goal set out the ambitious goal of "reducing the global maternal mortality rate (MMR) to less than 70 per 100,000 births, with no country having a MMR of more than twice the global average" by 2030.⁶⁻⁹ Finding practical ways to save lives at birth is a top priority worldwide in order to promote the SDGs' goals. In order to promote the implementation of crucial birth

practices for the prevention of perinatal mortalities, the World Health Organization (WHO) developed the safe childbirth checklist (SCC), which is a facility-based reminder tool designed to help health care professionals for enhancing prenatal, postpartum, and postnatal care practices for mothers and newborns. It was developed from evidence-based birth practices and tested in ten countries across Asia and Africa.¹¹

The physiological process of childbirth is sometime complex, requiring often challenging, sometimes sophisticated procedures to avoid poor maternal and newborn outcomes. Especially in a crowded labor ward, healthcare providers may find it difficult to simply remember all of the relevant information, and it may become tough to complete all the stages precisely and in the right order. From the time of admission until the woman and baby are safely sent home after giving birth, healthcare professionals are reminded to provide high-quality care by the WHO SCC, a straightforward quality improvement tool.^{12,13}

Checklist studies in the medical field have been linked to increased safety in recent years, with studies of checklist programs in critical care and surgery showing notable decreases in handling emergency complications and death.¹⁴ The Safe Childbirth Checklist bundle (Table 1) is a list of evidence-based practices derived from WHO guidelines that target the major global causes of maternal deaths and neonatal deaths. Every item on the checklist represents a crucial procedure or activity that, if neglected or not followed, could seriously harm the mother and/or the baby.

Healthcare professionals who successfully complete the checklist's items will definitely protect the mother and child because it lists a fundamental set of procedures that have been shown better birth outcome.^{15,16} Therefore, implementation of SCC is an important domain for improving the maternal and newborn birth outcome, which is being strongly recommended by WHO.

Table 1: WHO SCC clinical bundles.

SCC clinical bundles
On Admission Bundle
Danger sign assessment, Partograph initiated when cervical dilation at least 4 cm
Availability of soap, water, alcohol hand rub and gloves
Birth companion encouraged to be present during labor and at birth
Mothers' privacy maintained during labor and delivery
Delivery Bundle (Before Pushing and during delivery)
Availability of gloves, soap/savlon and clean water
Preparation of 10 IU IV/IM Oxytocin in syringe
Availability of two clean, dry, warm towels and suction device
Availability of bag and mask (size 0 and 1)
Helper/Assistant identified and informed for resuscitation
Soon After Birth Bundle (within 1 h)
Newborn assessment
Immediate skin to skin and initiate breastfeeding within the 1st hour
Baby weighed and recorded
Administration of Vitamin K
Administer tetracycline eye ointment

Table 2: SCC implementation challenges.

Challenges in SCC implementation
Intervention challenges
Dependence on external funding for sustainability (NGOs)
Funding for ongoing mentorship/coaching
Effective coordination and structure of mentorship/coaching
SCC not designed for teams
SCC not integrated into medical record
SCC perceived to be tool for LMICs only
Cost of printing SCC and missing SCC
Inability to adapt SCC due to government mandate
Outer setting challenges
Government does not enforce or support SCC

Continued.

Challenges in SCC implementation
Patient care seeking behaviour and preferences
Lack of timely referral system
Incentives required for motivation
Tension between data collection for research and sustainable implementation
Inner setting challenges
Tension and interpersonal dynamics between different cadres
Lack of leadership support for SCC
Staff turnover
Lack of required infrastructure (personnel, supplies, space)
Quality of care not perceived as a priority
Characteristics of individuals challenges
Lack of motivation and perceived burden of SCC
Gaps in technical knowledge/skills in labor management.
Resistance to behaviour change
Process challenges
No clear process for evaluation or audit of individuals
Difficult to use SCC in emergency situations
SCC not integrated into routine workflow
No clear mechanism for identifying once practices have become habit without SCC

Table 3: The implementation of SCC: obstacles and enablers.

SCC implementation obstacles and enablers
Obstacles
Skepticism about importance or value among staff
Checklist use not integrated into routine workflow
Checklist perceived as burdensome
Lack of enabling environment (lack of resources, medications, equipment)
Lack of training, coaching, or supportive supervision
Lack of leadership support for checklist
Lack of staff
Enabling factors
Leadership commitment
Capacity for quality improvement (identifying a local champion, ability to collect and share data)
Organizational culture including accountability, staff appreciation, openness to change
Adequate skills and training of staff
Sufficient staffing
Supply availability
Facility commitment to respectful patient care
Physical condition of facility
Effective communication within a facility and across prenatal/ postnatal services
Patient and community empowerment
Community practices, beliefs and knowledge

Table 4: Implementation activities from WHO implementation guide.

Implementation activities from WHO implementation guide
Engage
Adapt the checklist to fit local guidelines and protocols
Meet with stakeholders to obtain buy-in for checklist implementation
Review current resources and practices to determine what is needed for the checklist to be successful
Establish a team to take ownership of the checklist
Supportive supervision and advocacy
Launch
Incorporate technical training to address gaps in knowledge, practice, or attitudes
Official launch of the checklist through a special event or training
Use SCC framework during antenatal care visit

Continued.

Implementation activities from WHO implementation guide	
Support	Observing checklist use and using coaching skills to give respectful and constructive feedback to encourage change and motivate adherence
	Sharing information regularly to encourage improvement
	Documenting successes and challenges by gathering information on use of the checklist, essential birth practice behaviours and supply availability.
	Discussing checklist use and showcasing people in the facility using the checklist.
	Assessing availability of essential resources

Table 5: Desired improvements guidelines for SCC implementation.

Desired improvements to SCC structure and content	
Clarify purpose of SCC for users	
	Decision support tool
	Data collection tool
	Accountability tool
	Quality improvement tool
Add relevant clinical topics and patient information	
	Patient demographics
	Management of preterm birth
	Newborn care
Iterate on items for essential practices with low adherence or inappropriate practices	
	Vital signs measurement
	Hand hygiene
	Augmentation of labor without medical indication
	Inappropriate fundal pressure
Integrate contextual factors into SCC decision-making	
	Patient/family preferences regarding referral
	Managing multiple concurrent deliveries
	Incorporate feedback from frontline clinicians
Update SCC items to reflect current WHO initiatives	
	Sustainable development goals
	Universal health coverage
	Quality of care network
Ease of use	
	Emphasis on quality of care
	Digital version of SCC
	Integration into medical record
	Translation into local languages
	Redesigned format (not a checklist)
Emphasis on quality of care	
	Separation of SCC from medical record to emphasize ongoing supportive care
	Processes to enable behaviour change
Initial implementation support	
	Political support to embed SCC into existing policies
	Guidance for considering contextual factors in decision-making
	Guidance on how to select ideal SCC pilot sites
Continuous implementation support	
	Additional clinical training in management of complications
	Patient-centred care and experience of care
	Collaboration between public and private sector facilities using the SCC
	Continuous coaching, supportive supervision over long term

Several electronic databases, including PubMed, Scopus, Embase, Science Direct, and MEDLINE databases from 2013 to 2023, were thoroughly searched in order to locate

pertinent papers for our literature study. Randomized controlled trials, meta-analyses, systematic reviews, reviews, and observational studies were among the

research studies taken into consideration. The information was gathered between 2013 and 2023. We used the key words as search terms: SCC, improvement of child birth practice, maternal and newborn outcome and barriers and facilitators for its implementation. We did not apply any geographic constraints and just took into consideration articles published in English. We then looked through all of the indicated papers' reference lists to locate studies that electronic searches missed. Independently, two authors evaluated the studies' eligibility and the computerized search. After a thorough review, we ultimately decided to include all randomized clinical trials, retrospective studies, observational studies, literature reviews, case reports, and series that addressed the success of SCC implementation as well as implementation obstacles and challenges. A consensus was established after discussing any disagreements.

EFFECTIVENESS OF WHO SCC ON MATERNAL AND NEWBORN OUTCOMES

The World Health Organization invited experts and practitioners to test the SCC in various settings in an effort to find its efficacy. A recent systematic review of the literature found a link between implementation of SCC tool with reduction of rate of stillbirths and increased use of essential child birth practices.¹⁷ According to studies conducted in India, Bangladesh, Namibia, Sri Lanka, and Mexico, there has been a rise in the use of checklists and other essential birth practices, which has been linked to lower perinatal mortality, better team communication, higher-quality care under a heavy workload, and mothers' satisfaction with birthing assistance.¹⁸⁻²³

The results are affected differently by implementation strategies with varied levels of coaching intensity. Low intensity training merely involves monitoring, whereas high intensity level of coaching involves longer, more frequent coaching sessions (monthly or biweekly) along with the provision of supplies and equipment.

According to an assessment of high-intensity coaching in Uttar Pradesh, India, there were notable increases in the use of essential practices; however, these practices decreased once the SCC coaching ended, and there were no overall significant effects on severe complications, maternal death, or perinatal death.²⁴⁻²⁶ Additional research on high-intensity coaching revealed that it decreased perinatal mortality and stillbirths in India by 21% and in Kenya and Uganda by 11%.^{27,28} Another trial examined medium-intensity coaching revealed limited effects on the use of essential practices, but it may be worthwhile to assess a redesigned coaching approach prompting long-term behavioural change and, effectiveness.^{29,30}

Another cluster-randomized clinical study considered the need for additional training in conjunction with the introduction of a checklist, but used a medium level of training by maintaining a balance between adequate

training and appropriate checklist use at the lowest feasible implementation costs.

Improvements in healthcare workers' performance of critical birth procedures, as well as a decrease in neonatal mortality and stillbirths, were noted.³¹ Many studies conducted in different part of the world has shown the SCC implementation has a significant impact on improvement of child birth practices and better birth outcome.^{32,33} Although the most cost-effective coaching that also takes particular skill and resource levels into consideration has not been determined, the SCC's effectiveness may depend on an acceptable level of accompanying coaching.

EXISTING BARRIERS AND CHALLENGES IN IMPLEMENTING WHO SCC IN INDIA

The current state of SCC adaption and implementation worldwide is shown by several implementation studies. According to the majority of implementers, facility staff received some kind of formal training, which also included the necessary assistance from stakeholders. Lack of an enabling environment is the main obstacle to continued SCC adoption. The SCC tool and implementation strategies needed to be improved, according to implementers. These changes included making the SCC's goal more-clear, creating plans to increase adherence to hard-to-change practices, making the SCC easier to use and incorporating it into everyday workflows, and offering continuing support and training for SCC use.³⁴

According to the study's findings, SCC may be implemented in a number of settings, but maintaining its use over time might be challenging if key stakeholders and end users are not persuaded of its benefits. Even though new data shows that the SCC has a positive effect on perinatal outcomes in specific situations, there is still work to be done on how to modify and apply the SCC to maximize results.^{34,35} In order to maintain successful implementation, stakeholders would benefit from additional adaptation guidance for the SCC as well as need to address the various challenges reported for adaptation of the SCC at different levels (Table 2).^{35,36}

Table 3 represents different barriers and facilitators are also reported in various studies during implementation and adaptation phase of the SCC tool, which need to be considered for successful implementation research.³⁷

RECOGNIZE THE AVAILABLE RESOURCES AND IMPLEMENTATION OF WHO SCC

The WHO established the WHO SCC Collaborative, which comprised implementation teams from 39 sites in 19 countries, to examine the challenges and enablers of implementing the SCC in various contexts. Among the main recommendations were the significance of facilitating local adaptation of the SCC with continuous

supervision and support, evaluating end-user competency and offering technical skills training when required, and engaging key stakeholders.³⁷ However, there lacks a unified approach for successful SCC adaption and implementation.

To find the current implementation strategies across the globe, an explanatory, sequential mixed methods study was conducted to assess the current use of the SCC, the range of adaptations regarding the SCC tool and implementation strategies in different contexts. The most common implementation strategies were meeting with stakeholders to gain support, implementing formal SCC training, and engaging them with proper mentoring or supervision about the usage of SCC. Whereas, clarifying the SCC's objectives, providing guidelines on pertinent clinical skills, improving items that addressed attitude, perceptions and behaviors with low adherence, and incorporating contextual variables into decision-making were among the desired improvements (Table 4).³⁶ Implementers of the WHO SCC from 15 countries, including India, reported modifying the SCC checklist's content, structure, and implementation techniques to enhance the standard of care during facility-based childbirth and apply it in their particular context (Table 5).³⁸

IMPLICATIONS FOR PRACTICE

WHO SCC was effective in improving some of the essential child health practices and reducing stillbirth. Child birth practices will be improved by the implementation of the WHO SCC tool in labour room in improving preeclampsia management, maternal infection management, proper partograph utilization, reducing stillbirth and enhancing postpartum danger sign counselling to reduce the further complications.

There is still much to learn about the best ways to implement the SCC. For extremely challenging activities, different approaches such as mentoring, coaching, close monitoring and rewards may be required to encourage behavioural and attitude change. It is necessary to find the duration, frequency, and substance of training and coaching in various contexts in order to maintain appropriate behavioural change. Key enabling environmental factors, such as suitable infrastructure, supplies and equipment, trained staff, referral and transportation systems, and communication channels at all care levels, are also necessary to support adherence to SCC principles through facility readiness. Hence, further well-designed studies are needed to provide evidence on WHO SCC's impact on the above essential childbirth practices, perinatal mortality, maternal mortality and maternal morbidity.

CONCLUSION

For high-reliability systems, the SCC is still a crucial patient safety tool. An increasing body of evidence shows

the impact of SCC adherence on reducing perinatal morbidity and mortality when used in conjunction with larger quality improvement initiatives. Using the SCC ensures the delivery of essential maternal and perinatal midwifery care practices. The SCC 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. Although there are SCC implementation challenges and barriers for adopting the best practices, but adherence to SCC practices can be enhanced through mentoring and coaching, encouraging capacity building training, improvement of quality infrastructure, and leadership support. The checklist remains a valuable instrument for raising the bar for care during facility-based deliveries, and implementers may benefit from additional guidance on how to appropriately modify and apply it in light of local conditions.

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