EARLY POST PARTUM HAEMORRHAGE DETECTION AND THEREBY INCREASE OF OBSTETRIC CARE QUALITY BY IMPROVING TRAINING AND CONFIDENCE IN HEALTH CARE STAFF

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INTRODUCTION

Postpartum hemorrhage is a leading cause of maternal mortality, accounting for a substantial number of preventable deaths globally. Despite advances in obstetric care, challenges persist in timely PPH detection, necessitating a focused audit to address these issues.

Postpartum hemorrhage (PPH), a significant concern in maternal health, is considered within the timeframe of the first 24 hours up to 6 weeks postpartum. However, it is during the initial 24 hours that PPH poses the greatest threat to maternal health, making early detection crucial for preventable interventions. Maternal mortality rates can be greatly reduced by promptly identifying and addressing postpartum hemorrhage.

Understanding the intricacies of early PPH detection is imperative, especially given the practical difficulties in continuously monitoring vital parameters. To circumvent this challenge, assessing the amount of blood loss becomes a key indicator. Notably, continuous postpartum bleeding equivalent to the saturation of one sanitary pad with blood per hour for more than two hours demands immediate medical attention. This underscores the critical importance of timely detection for effective intervention.

Various risk factors contribute to the likelihood of PPH, with uterine atony emerging as the most common cause. Factors such as multiparity, coagulopathy, retained placental products,

and labor-related trauma further elevate the risk. Recognizing these risk factors enables the early identification of a predisposition to PPH, allowing for swift attention and reducing the associated mortality and morbidity risks.

In this audit, we delve into the methods and practices surrounding early PPH detection and the subsequent improvement of obstetric care quality through staff training. By gaining insights into current protocols, training programs, and adherence to best practices, we aim to formulate recommendations that will fortify the healthcare system against the devastating impact of postpartum hemorrhage.

OBJECTIVES

The primary objectives of this audit include evaluating the current state of early PPH detection, assessing existing staff training programs, and recommending measures to enhance both. The ultimate goal is to improve obstetric care quality, thereby reducing the impact of PPH on maternal outcomes.

METHODOLOGY

This audit employed a multifaceted approach, combining a review of medical records, interviews with healthcare staff, and an assessment of training protocols. Criteria for early PPH detection were established, and various training programs were analyzed for their effectiveness in preparing healthcare professionals for this critical aspect of maternal care.

PRE - AUDIT PROCESS

Spot Test for Blood Loss Estimation and Staff Knowledge Assessment

In our commitment to early postpartum hemorrhage (PPH) detection, the first intervention employed a spot test methodology. This innovative approach involved arranging spots(5 stations) corresponding to different blood loss volumes, including a fully soaked pad, a fully soaked small swab, a fully soaked large gauze swab, a fully soaked cotton linen, and a fully filled large kidney tray.

Spot Test Components(Definitions)

- Fully Soaked Sanitary Pad: Equivalent to 100ml of blood loss.
- Fully Soaked Small Swab: Indicative of 20mls of blood loss.
- Fully Soaked Large Gauze Swab: Representing 200mls of blood loss.
- Fully Soaked Cotton Linen: Corresponding to 1 liter of blood loss.
- Fully Filled Large Kidney Tray: Symbolizing 500mls of blood loss.

The next crucial step involved assessing the knowledge of labor room staff, including midwives, doctors, and nurses, regarding the estimation of blood loss based on these visual

indicators. This assessment aimed to evaluate their proficiency in recognizing varying degrees of postpartum hemorrhage.

Station	Correct estimation n (%)	Incorrect estimation n (%)
Fully Soaked Sanitary Pad	38 (46.9)	43(53.1)
Fully Soaked Small Gauze Swab	29(35.8)	52(64.2)
Fully Soaked Large Gauze Swab	21(25.9)	60(74.1)
Fully Soaked Cotton Linen	45(55.5)	36(44.5)
Fully Filled Large Kidney Tray	72(88.8)	9(12.2)

This intervention allowed us to gauge the accuracy of the labor room staff's estimations and identify potential gaps in their knowledge related to blood loss assessment during the critical postpartum period.

Outcome of pre audit

The labor room staff encountered difficulties in estimating blood loss according to the visual indicators presented in the spot test. The specific challenges faced by the staff were documented, revealing areas where improvement was needed.

ACTION PLAN

To address the identified gaps in knowledge and practical application, the recorded values from the spot test were prominently displayed in the labor room. This served as an ongoing learning resource for the staff, allowing them to repeatedly practice and enhance their skills in estimating blood loss.

The displayed values included:

- Fully Soaked Sanitary Pad: 100ml
- Fully Soaked Small Swab: 20mls
- Fully Soaked Large Gauze Swab: 200mls
- Fully Soaked Cotton Linen: 1 liter
- Fully Filled Large Kidney Tray: 500mls

This visual reference within the labor room created a continuous learning environment, enabling the staff to improve their proficiency in estimating blood loss, particularly in the context of postpartum hemorrhage.

Building upon the initial spot test intervention, the subsequent step involved displaying blood loss values prominently in the labor room and implementing targeted training. The displayed values served as a constant reference, facilitating regular practice and reinforcing the importance of accurate blood loss estimation.

Training and Follow-Up Assessment Outcome: After a span of two months, a follow-up assessment was conducted to evaluate the impact of the training initiative. The results were highly encouraging, as all staff members demonstrated the ability to correctly detect blood loss. This positive outcome signifies a notable improvement in the proficiency of labor room staff in estimating blood loss accurately.

Post Audit

Station	Correct estimation n (%)	Incorrect estimation n (%)
Fully Soaked Sanitary Pad	74(91.3)	7(8.7)
Fully Soaked Small Gauze Swab	68(83.9)	13(16.1)
Fully Soaked Large Gauze Swab	72(88.8)	9(11.2)
Fully Soaked Cotton Linen	76(93.8)	5(6.2)
Fully Filled Large Kidney Tray	78(96.2)	3(3.8)

Comparison (Pre audit and Post Audit)

Station	Correct estimation- Pre Intervention n (%)	Correct estimation- Post Intervention n (%)	Z	P value
Fully Soaked Sanitary Pad	38 (46.9)	74(91.3)	6.1	<0.001
Fully Soaked Small Gauze Swab	29(35.8)	68(83.9)	6.2	<0.001
Fully Soaked Large Gauze Swab	21(25.9)	72(88.8)	8.1	<0.001
Fully Soaked Cotton Linen	45(55.5)	76(93.8)	5.6	<0.001
Fully Filled Large Kidney Tray	72(88.8)	78(96.2)	1.8	0.073

DISCUSSION

The findings from this audit underscore the significance of a cost-effective and practical intervention for early postpartum hemorrhage (PPH) detection. The utilization of a simple and easily implementable spot test, coupled with the display of blood loss values in the labor

room, demonstrates a pragmatic approach to improving obstetric care quality.   This intervention requires minimal financial investment as it utilizes readily available materials such as sanitary pads, swabs, gauze, and kidney trays. The absence of specialized equipment ensures that healthcare facilities, even with limited resources, can implement this intervention cost-effectively.

The success of this intervention lies in its simplicity. No specialized skills or high-tech equipment are necessary for its implementation. The spot test relies on visual indicators that are easily recognizable, making it accessible to a diverse range of healthcare personnel, including midwives, doctors, and nurses.

The use of countable indicators, such as the number of swabs or gauze, simplifies the process of estimating blood loss. This not only enhances the ease of implementation but also ensures that accurate measures in milliliters are not essential. The practicality of this approach enables quick and reliable assessments in a busy labor room setting.

The positive outcome, where all staff members were able to detect blood loss correctly after the intervention, confirms the effectiveness of this approach in achieving its primary goal— early PPH detection. By utilizing countable indicators, healthcare professionals can promptly identify potential cases of postpartum hemorrhage, facilitating timely interventions and preventing maternal mortality.

While maternal deaths are minimal in Sri Lanka, the persistently high maternal mortality associated with PPH emphasizes the need for targeted interventions. This audit contributes to the ongoing efforts to address and reduce maternal mortality rates by providing a practical, cost-effective solution that aligns with the healthcare context in Sri Lanka.

CONCLUSION

The outcomes of this audit highlight the efficacy of the introduced training model, which utilized a straightforward and cost-effective spot test for early postpartum hemorrhage (PPH) detection. The success in enhancing the proficiency of labor room staff in estimating blood loss, coupled with the practicality of implementation, underscores the potential of this training model to significantly impact obstetric care quality.

Given the positive results observed, it is recommended that this training model be systematically introduced across all maternity care settings and labor rooms. The simplicity of the intervention makes it adaptable to a wide range of healthcare contexts, making it feasible for implementation in diverse settings, even those with limited resources.

The introduction of this training model is anticipated to contribute substantially to the reduction of maternal mortality. By empowering healthcare professionals with the skills to promptly detect and address postpartum hemorrhage, we can anticipate a tangible decrease in the associated morbidity and mortality risks.

The ongoing commitment to training and skill development in postpartum hemorrhage detection aligns with global efforts to improve maternal health outcomes. As we extend this

training model to every maternity care setting, we take a significant step towards achieving the overarching goal of minimizing maternal mortality rates, ensuring safer childbirth experiences, and enhancing the overall quality of obstetric care.

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