

A Criterion-Based Audit of Postnatal Services given to Mothers and Newborns within 24 hours
of Birth in the General Hospital, Western Uganda.

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Declaration

I, Agwang Agnes, declare that the work contained in this Dissertation entitled “A Criterion – based Audit of Postnatal Services given to Mothers and Newborns within 24 hours in the General Hospital in Uganda” is my original piece of work and to the best of my knowledge, has never been presented to any academic institution for an award.

Signature



Date 14th/ August / 2023

Agwang Agnes

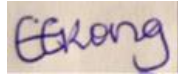
Approval

A Criterion – based Audit of Postnatal Services given to Mothers and Newborns within 24 hours in the General Hospital in Uganda

I hereby approve this research dissertation that has been written under my supervision to be submitted to the School of Research and Postgraduate Studies of UCU.

Supervisor: Mrs. Elizabeth Namukombe Ekong, PHD, MNS., RN/RM

Signature

A rectangular box containing a handwritten signature in blue ink that reads "Ekong".

Date: 23-08-2023

Dedication

This research report is dedicated to my beloved Mother, Pauline Okure who has been my great support all through my life. I also dedicate it to my late husband Mr. Eyoga Kennedy Moroga and the children; Gloria, Patrick, Hilda, Collins and Hannah Gladys. My friends Christine, Lydia, Judith, Ellen for their constant encouragement.

Acknowledgement

I give Glory to God for the far He has brought me in academia. I acknowledge Him because without God, all is vanity. This has been a long journey and it has been possible to walk it in the company of the following persons who dedicated their time, offered support physically, emotionally, spiritually and economically. I mention this at the time when I felt I should let it go, they stood with me all through. I am grateful to my Supervisor Mrs. Elizabeth Namukombe Ekong for her patience, technical guidance and continuous encouragement from the time she took me on as her research student. I appreciate the faculty support right from Dr. Karen Drake, Mrs. Jemimah, Elizabeth Situma, Faith, Grace, Mercy and Miriam who were easily approachable whenever I needed them.

It was not easy though to get this accomplished but alongside the supervisor, some friends kept providing morale and sharing their experiences in the same area of research, just to mention, Grace, Lydia, Judith, Fiona, Hellen and Antoinette and Masereka. I also want to appreciate my family, friends and relatives for their support in all ways. May God bless them all.

I am greatly indebted to Clarke International University and the management as my work place and second home, which has seen me through all this process of career growth. I am thankful to all the senior managers led by the Vice Chancellor, Ass. Professor Rose Clarke Nanyonga who have entrusted me with the role of leadership. I am truly humbled by the trust vested in me all this while. I do not take it for granted that they gave me all the time I needed for my studies right from the Bachelor level up to now. My colleagues have always relied on me for guidance in all aspects as their team leader. I thank each one of them without mentioning names. God has been faithful and has never abandoned me. His word has come true and that I say, AMEN.

Table of Contents

Declaration	ii
Approval	iii
Dedication	iv
Acknowledgement	v
List of tables.....	x
List of figures	xi
Abbreviations	xii
Abstract	xiii
Chapter One: Introduction	1
Background	2
Statement of the problem	6
Specific Objectives	7
Significance of the study to nursing	7
Conceptual Framework	9
Application to the study	11
Setting the standard	11
Collecting data	12
Data Analysis	12
Operational definition of terms	13
Summary	13
Chapter Two: Review of Literature	15
Maternal and Neonatal Deaths in the first 24 hours of birth is Still a Global, Regional, and National challenge	15

Maternal mortality within 24 hours	16
Newborn mortality within 24 Hours	17
Quality Postnatal Care in the first 24 hours Promotes Maternal and Neonatal Wellbeing	18
Use of Postnatal Care Recommended Guidelines is Still a Challenge	19
Criterion – Based Audit Improves Quality of Care	22
Chapter Three - Methodology.....	26
Quantitative Method	26
Study Design	26
Study Area	27
Study Population	27
Inclusion Criteria	28
Exclusion Criteria	28
Sample Size Determination	28
Sampling procedure	28
Data Collection Methods	29
Data collection Instrument	29
Quality Control	32
Validity	32
Reliability	33
Data Collection Procedure	34
Data Management	34
Data Analysis	35
Qualitative Method	35
Study design	36

Study Population	36
Sampling methods	36
Data Collection Instruments	37
Data collection method	37
Data management and presentation	38
Qualitative Data analysis	38
Quality control	39
Ethical Considerations	40
Summary	41
Chapter Four: Presentation of Findings	41
Social-Demographic Characteristics of Study Population	42
Criteria used to Assess Quality of Postnatal Care at the Study Site	44
Comparison of the Quality of Postnatal care at the Health Facility with WHO Standard	45
Assessment of Mothers for Potentially Life-Threatening physical conditions	47
Information Shared with Mothers about Self/-care and the Baby in the Postnatal Period	48
Care of the Newborn against the WHO Standard	49
Assessment of Newborn Babies while in the Postnatal Ward	50
Assessment of Potentially Life-Threatening Physical Conditions to Babies within 24 Hours of Life	51
Information shared with the Mothers about Baby Care upon Discharge	52
Factors Associated with Quality of Care at the General Hospital	53
Availability of standard guidelines	54
Interventions in place to improve the quality of postnatal care	54
Feedback Mechanisms to Improve Quality of Postnatal care	56
Availing phone contacts	56
Departmental meetings	57
Measure of the Quality of Postnatal care	57

Postnatal care guidelines.	57
Client – Staff interaction	58
Reduced Maternal Mortality.	58
Staffing levels	58
Stock – outs of drugs and supplies	59
To the hospital management	60
Chapter Five: Discussion	61
Criteria used to Assess Quality of Postnatal Care at the General Hospital	61
Comparison of the Quality of Postnatal Care at the general hospital with the WHO	
Standard	62
Factors associated with quality of postnatal care at the general hospital	68
Limitations of the study	71
Conclusion	72
Recommendations.....	72
Implications for Midwifery practice	73
References	75
Appendix A: Introduction of Study to Participants	86
Appendix B: Participant Consent Form.....	88
Appendix C: Data Extraction Tool for Postnatal Care for the Mother and Newborn within 24	
Hours after Birth	91
Appendix D: Key Informant Interview Guide	96
Appendix E: Clinical Audit Cycle Checklist	97
Appendix F: Map of the Study Area.....	99
Appendix G: Kryce and Morgan Table for sample size determination	100
Appendix H: Work Plan.....	101
Appendix I: Estimated Budget.....	102

Appendix J: World Health Organization 2013 Guidelines	103
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List of tables

Table 1: <i>Social-demographic Characteristics of the Mothers</i>	42
Table 2: <i>Criteria and Standards to Assess the Quality of Postnatal Care within 24 Hours</i>	44
Table 3: <i>Assessment of Mother Within the First Hour after Birth and Within 6 Hours of Admission to the Postnatal Ward</i>	46
Table 4: <i>Record of Potentially Life-Threatening Physical Conditions to Mothers</i>	48
Table 5: <i>Information Shared with the Mothers upon Discharge</i>	48
Table 6: <i>Immediate Care of the Newborn</i>	49
Table 7: <i>Assessment of babies in the postnatal ward</i>	50
Table 8: <i>Record of Potentially Life-Threatening Physical Conditions to Babies Within 24</i>	51

List of figures

Figure 1: Audit Cycle: Ashmore, Ruthven, & Hazel, (2011)..... 10

Abbreviations

AHSPR:	Annual Health Sector Performance Report
CBA:	Criterion Based Audit
FGD:	Focus Group Discussion
HMIS:	Health Management Information Systems
MOH:	Ministry of Health
n.d.:	No date
NICE:	National Institute for Health Care Excellence
ODK:	Open Data Kit
PNC:	Postnatal care
SPSS:	Statistical Package for Social Sciences
UBOS:	Uganda Bureau of Statistics
UDHS:	Uganda Demographic Health Survey
UNFPA:	United Nations Populations Fund
UNICEF:	United Nations International Children's Educational Fund
WHO:	World Health Organization

Abstract

Background: Postnatal care is a key global intervention and a major safe motherhood initiative recommended for reducing maternal and neonatal mortality globally. Criterion-based audit helps measure the quality of postnatal care reliably and checks adherence to World Health Organization criteria and standards. This study assessed the quality of postnatal care services offered to mothers and their babies within 24 hours using a baseline Criterion-based audit at the general hospital.

Methods: Mixed methods used on a facility Criterion-based audit with descriptive cross-sectional and explorative study design. Study population comprised of quarterly recorded and reviewed maternal postnatal files. A questionnaire and key informant interview guide were used. A systematic sampling technique was used for selecting files while key informants were selected purposively. Data was analyzed using SPSS version 20. Qualitative data was transcribed using related concepts to form themes and sub themes.

Results: 248 files reviewed. Assessment of the mothers and their babies within one hour after birth almost met the WHO standards in all the parameters except after birth pains and incision site for cesarean mothers. Within 6 hours, assessments fell far below the WHO criteria and standards, including records of potentially life-threatening conditions and information shared upon discharge. No mental health information was shared upon discharge.

Immediate care of the newborn almost met the WHO criteria and standards except for stimulation of the baby, use of ambu bag and mask, and use of resuscitation drugs. Six hours and subsequently the standards were not met (head circumference, temperature, bladder and bowel function, color of the eyes, cord checked and skin color), including records of potentially life-threatening conditions. Information on discharge was shared except delayed bath and continuity of prescribed treatment. Factors associated with quality of postnatal care included lack of guidelines, understaffing, inadequate sundries and equipment.

Conclusion and recommendations: Assessment of the mothers and their babies after six hours of birth did not meet the WHO criteria and standards. Criterion-Based Audit of postnatal services in this study revealed that attention was given in improving the quality of postnatal care than it did before through, adopting WHO guidelines for postnatal care, improving the staffing levels and their general welfare. Criterion-based Audits can be used in other maternity departments like antenatal clinic and labour ward to assess quality of care.

Chapter One: Introduction

Postpartum complications greatly contribute to maternal and neonatal morbidity and mortality globally, regionally, and locally. For purposes of this study, postnatal care focused on the first 24 hours. This is a very crucial time for the survival and well-being of the mother and baby since the majority of deaths occur within this time frame (Akibu, Tsegaye, Megersa, & Nurgi, 2018; Mon, Phyu, Thinkhamrop, & Thinkhamrop, 2018b; World Health Organization, 2018).

Most deaths of mothers and babies occur within the first 24 hours after birth. In Uganda, postpartum hemorrhage accounts for 25% of maternal deaths (Izudi & Amongin, 2015; Ngonzi et al., 2016; Ononge, Mirembe, Wandabwa, & Campbell, 2016). Criterion-based audit (CBA) is a strategy developed to enhance quality improvement of healthcare by assessing the component of quality of care given to patients with a specified condition, and comparing the care against the agreed standards. (Lumala, Sekweyama, Abaasa, Lwanga, & Byaruhanga, 2017). Criterion-based audit can be used to measure the quality of obstetric care such as postnatal care for the mother and baby within the first 24 hours that reliably check for adherence to WHO recommended guidelines and leading to improvement in the quality of care. CBA studies have been done in other obstetric aspects of Post-partum haemorrhage and Pre-eclampsia. So far, a study by (Kanyunyuzi et al., 2017) has documented assessment of early postnatal care within 6 hours using the criterion-based audit. Not much has been documented regarding the quality of postnatal care within the first 24 hours. The study therefore assessed the postnatal care given to mothers and their babies in the first 24 hours at the General hospital, in order to improve the quality of care, through the implementation of postnatal care guidelines.

Background

Postnatal care is the assistance given to a mother and baby immediately after birth up to 6 weeks after delivery. Immediate care is needed within six to twenty-four hours to reduce the risk of asphyxia and hypothermia to the baby and primary postpartum hemorrhage to the mother (Abebo & Tesfaye, 2018; Izudi & Amongin, 2015; Kanté et al., 2015; Khanal, Adhikari, Karkee, & Gavidia, 2014; World Health Organization, 2016). According to the (Langlois et al., 2015) guidelines, the best practices regarding postnatal care for all mothers and newborns recommend postnatal care in the first 24 hours regardless of where the birth occurs, and a full clinical examination for the mother and baby one hour after birth and subsequently up to discharge at least in 24 hours. The quality of care expected in postnatal units should be to the extent that health care services are provided to mothers and babies to improve the desired health outcomes such as reduction of maternal and neonatal morbidity and mortality, minimizing postpartum complications like postpartum haemorrhage, puerperal sepsis, puerperium depression, and psychosis; while for the baby reducing the occurrence of birth asphyxia, hypothermia, and infections. (World Health Organization, 2016). Despite all these strategies in place, maternal and neonatal mortality remains high; 336/100.000 live births, (Manzi, 2018).

Postnatal care is a key global intervention and a major safe motherhood initiative recommended for reducing maternal and neonatal mortality worldwide (Abebo & Tesfaye, 2018; Khanal et al., 2014). Postnatal care is a transition time for the mother and the baby physiologically, psychologically, and socially (Kanté et al., 2015; Workineh & Hailu, 2014).

Immediately after birth, haemorrhage and infections pose a great risk to the mother's life while asphyxia and infections are a risk to the neonates.

In the first 24 hours, the care expected to be done to the mother is; fundal height check, uterine contraction, check for vaginal bleeding, temperature, pulse, blood pressure, micturition, after birth pains, incision site and the perineum for tears, breastfeeding, mobility, and emotional wellbeing. The baby is to be assessed for Apgar score, resuscitation, birth weight, head circumference, temperature, respiration, congenital abnormalities, bladder and bowel function, activity, the colour of skin, cord, eyes, mouth, feeding type, and frequency. The mother should also be advised on signs and symptoms that are suggestive for potentially life threatening to her condition such as, pallor, abdominal pain, severe headache, offensive or increased lochia, shortness of breath, pain in the calf muscles, failure to pass urine, fever, dizziness, and palpitations. The mother is advised and encouraged to report signs and symptoms of life-threatening conditions to the baby that require emergency care such as, failure to breastfeed, excessive crying, fever, jaundice, convulsions, the extreme coldness of the baby's body, difficulty in breathing, bleeding from the cord, bulging of the fontanelles, vomiting, lethargy, rash failure to pass urine and failure to pass stool.(World Health Organization, 2014)

Globally, maternal mortality resulting from complications of pregnancy and childbirth is more than half a million per annum (World Health Organization, 2014a). Fifty percent (50%) of maternal deaths and 40% of neonatal deaths occur in the immediate postnatal period, which is the first 24 hours after delivery (Akibu et al., 2018; Chungu, Makasa, Chola, & Jacobs, 2018; Khanal et al., 2014). In developed countries such as Finland and the United States of America, the annual maternal mortality rates are

3.8 and 26.4 per 100,000 live births respectively (World health Organization, 2019). The (World Health Organization, 2016) recommends a set of guidelines to guide the postnatal care for both mothers and infants in the first 24 hours. The guidelines include immediate assessment, and clinical examination of the mother and baby one hour after delivery, and ensuring that they stay in the hospital for 24 hours before discharge. It was therefore very important to provide postnatal care at this time to manage immediate complications such as hemorrhage in the mother and asphyxia and hypothermia in the newborn. Postnatal care is regarded as the most important maternal health care service offered in the prevention of complications or disabilities occurring after childbirth (Sagawa, 2016). The global perspective of criterion-based audit relies on the (Langlois et al., 2015) guidelines for postnatal care for mothers and newborns where considerable progress has been made with a maternal mortality ratio of 210 per 100,000 live births from 380 between 2000 and 2013.

In Africa, thirty to forty percent of maternal deaths occur after childbirth due to direct maternal causes such as haemorrhage and sepsis, and asphyxia, infections, including pre-term birth complications in the newborn (Abebo & Tesfaye, 2018; Benova et al., 2019; Ilesanmi & Akinmeye, 2018). Postnatal care receives less attention compared to prenatal and intrapartum care, yet most of the maternal and neonatal deaths occur during this period, accounting for more than two-thirds of newborn deaths and at least half of newborn mortality happening within 24 hours. Around two-thirds of mothers dying to happen in the postnatal period (Akibu et al., 2018).

In Africa, most of the interventions implemented were adopted from (World Health Organization, 2016) guidelines and adapted into the local context. Ethiopia,

Zambia, and Nigeria have adapted criterion-based audit which is a standardized criterion for evaluating the obstetric quality of care by comparing the current practice against the explicitly agreed standards (World Health Organization, 2014b), aimed at improving the quality of care in the early postnatal period. A Re – audit of immediate normal postpartum care by (Hassan, El-seman, & Mohammed, 2016) showed that checking for completeness of placenta and membranes, general assessment of the mother's wellbeing, identifying immediate postpartum complications, assessing for pallor, perineal check for tears, uterine contraction, bladder emptying, encouraging the mother to eat and drink, initiating early exclusive breast feeding and advice on maternal and neonatal danger signs were interventions done. According to (Ilesanmi & Akinmeye, 2018), the immediate postnatal care offered included, use of prophylactic antibiotics in perineal tears, checking for uterine contraction, fundal height measurement, temperature, and blood pressure within 6 hours.

In Uganda, the maternal mortality ratio is still high with (336/100,000) live births (Manzi, 2018) mainly caused by Obstetric haemorrhage (46%) and sepsis (6%), (AHSPR,2018/2019), and neonatal mortality of 27 per 1000 live births (AHSPR, 2018/19; UNICEF, 2015). Eighty percent (80%) of neonatal deaths are due to birth asphyxia, infections, and complications from prematurity. Overall, 63% of the mothers in Uganda who deliver in a public health facility receive postnatal care in two days. Unfortunately, information regarding the quality of postnatal care within 24 hours after childbirth, which is critical for improving policies on maternal care and reducing maternal death is still limited in the country (Ndugga, Namiyonga, & Sebuwufu, 2020). The government through the Ministry of Health integrated postnatal care services into the

Reproductive Health package for Maternal and Child Health and adopted (World Health Organization, 2016) the recommended guidelines for postnatal care. The strategy of strengthening postnatal services aimed at improving the quality of postnatal service delivery in the country (Haran, van Driel, Mitchell, & Brodribb, 2014; Ndugga et al., 2020; World Health Organization, 2016).

Criterion - based audit is a continuous process about improving practice and providing patient care and outcome through systematic review of care against explicit criteria and implementation of change (Kayiga, Ajeani, Kiondo, & Kaye, 2016). Some studies have been carried out in Uganda on the use of Criteria - based audit as a means to improve the quality of care among women in the intrapartum and postpartum period. Although studies are still limited, the outcome shows aspects of quality improvement in areas of continuous medical education, drills, and following the agreed-upon standards of care in re - audits (Lumala et al., 2017).

According to (Kanyunyuzi et al., 2017; Lumala et al., 2017), Criterion - based audits measured the quality of obstetric care offered to mothers and babies in line with the set standards and checking the adherence to the guidelines as a means to improving the quality of postnatal care. Therefore, there was a need to assess the current postnatal practices using criterion-based audit in determining the quality of postnatal care for the mothers and babies within 24 hours at the General hospital in western Uganda.

Statement of the problem

Postnatal care (PNC) is one of the key global interventions recommended for reducing maternal and neonatal mortality. The Ministry of Health integrated postnatal care services into the reproductive health package for maternal and child health and

adopted the recommended guidelines for postnatal care by availing the Mother-Child Health Passport (2012) guidelines as a strategy to strengthen the quality of PNC services in the country.

Despite the availability of the guidelines, mothers still developed postpartum haemorrhage and sepsis, and babies get asphyxia and hypothermia contributing to high maternal and neonatal mortality within 24 hours after delivery. Criterion – based audit is one of the strategies identified for improving the quality of postnatal care. The study sought to assess the quality of postnatal care within 24 hours using a criterion – based approach at the general hospital in Western Uganda.

Study Purpose

The purpose of the study was to assess the quality of postnatal care services offered to mothers and their babies in the immediate postnatal period (within 24 hours) using a baseline criterion-based audit at the general hospital.

Specific Objectives

1. To determine the quality of postnatal care using World Health Organization criteria and standards applicable to the general hospital
2. To compare current postnatal care practices at the general hospital with agreed on World Health Organization criteria and standards
3. To determine the health facility factors associated with the quality of postnatal care of mother and baby at the general hospital.

Significance of the study to nursing

Postnatal care within 24 hours after childbirth is important because it helps minimize occurrence of maternal and newborn mortality, by enabling the skilled health

providers to detect any life-threatening conditions early that could result in complications that affect maternal health outcomes. It is therefore, vital for the health team to provide quality postnatal care to avert such occurrences. The World Health Organization (Langlois et al., 2015) guidelines that have been adapted into the local context regarding postnatal care are essential for streamlining appropriate interventions in the provision of postnatal care to mothers and babies within 24 hours. Criterion – Based audit was a recommended criterion for postnatal care and as stated in the postnatal care guidelines, has been designed specifically to facilitate the good practice of skilled health providers in their day to day activities, thus empowering themselves with up to date evidence-based information as professionals.

This study has enabled the health workers to measure the set standards against the daily performance during care of the mothers and babies in the postnatal period, to achieve quality service outputs. In rendering such care as per the recommended guidelines, the health team would be able to identify any existing gaps and device means to handle them. Criterion based audit results would be used by the service providers to identify the root cause of the problem. It may also help the service providers to come up with feasible implementation activities to address the identified problems. The findings of this study may be used to develop intervention models that suit the clients' needs, providing them with support to embrace postnatal care. The hospital administration may use the findings of this study to guide support supervision of the health workers' performance in the daily activities basing on the set criteria to improve the quality of post-natal care.

The midwife leaders may be guided by the findings of the study to conduct audits to improve or strengthen practice in health facilities. The findings may also aid the incorporation of practice guidelines into the nursing education curriculum to enhance knowledge and skill acquisition by health workers during training. Lastly, since there are a few published studies regarding the assessment of quality postnatal care in the country, therefore, the study findings can provide additional evidence/ information for future research.

Conceptual Framework

The Conceptual framework chosen for this study was the Audit cycle which is the process of identifying and measuring the current practice in postnatal care against the set standards (World Health Organization, 2016). Health professionals use the audit cycle to guide in assessment, evaluation, and improvement of the care of patients following a systematic approach. This was to guide the identification of the current quality of postnatal care within 24 hours by assessing the care offered to mothers and babies following the concepts recommended in the cycle. The audit was purely for academic purposes and this covered only four steps of the audit cycle which were to identify the audit/topic, set the standard, collect data and analyze the data. After analysis, feedback was shared with the stakeholders so that they plan for the implementation.

Figure 1. The audit cycle

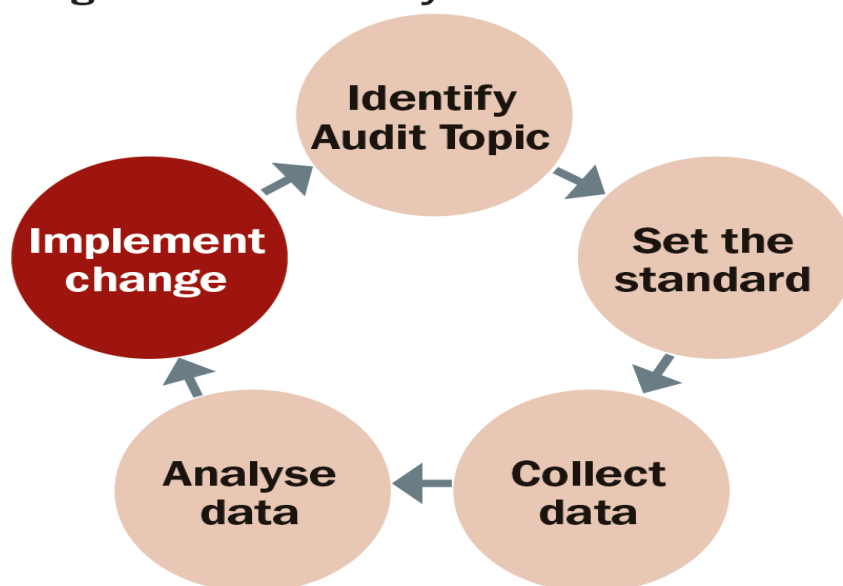


Figure 1: Audit Cycle: Ashmore, Ruthven, & Hazel, (2011).

The Audit cycle comprises of the preparatory phase which requires obtaining support and involvement of the participants who will form the audit team, selecting a topic for audit, setting a criterion, interviewing and observing, and identifying the information sources.

The actual process of the audit cycle includes:

Identifying the topic for the clinical audit. The topic of interest is chosen basing on the definition of the desired standards in which the standards could be improved and the changes expected be recommended.

Setting Standards. Involves comparing the current practices against the agreed evidence-based standards/guidelines such as the (World Health Organization, 2014a) guidelines, or locally endorsed guidelines such as Ministry of Health. Standards setting can be negotiated within the audit team. This requires that the standards are measurable,

by setting targets in the form of percentages which can be a minimum or optimal depending on the practices assessed. It also includes use of explicit statements of how a patient should be cared for in a given context.

Collecting Data. This involves collecting a certain type of data basing on the area of interest. This can be from different sources such as literature, hospital records whether files or computerized records and through interviews. Data can be collected through the use of criteria and set standards. A data extraction sheet guides the data collection process. Data collection can be prospective or retrospective. It can also include the data collected on standards that are not met with reasons.

Conducting an interview was also another form of data collection.

Data Analysis. This is the process of interpreting the meaning of the data collected. It includes how data is organized and displayed in the form of tables, graphs or bar charts, and narratives.

Application to the study

Improvement in providing quality postnatal care to mothers and babies in the first 24 hours after delivery was guided by using the Criterion - based audit with emphasis on the process of care. Criterion-based audit is a continuous process about improving practice and providing a better service(Marshall, Kitson, & Zeitz, 2012). The two components focusing on the process were, setting standards and collecting data which provided the basis of the objectives set for the study.

Setting the standard

Criterion - based audit is critical in comparing the current practice against the agreed-upon standards or guidelines in providing quality care (Basavanthappa, 2013). In

assessing the quality of postnatal care offered to mothers and babies within 24 hours, the use of designed tools to obtain data enhanced the objective delivery of care. The (World Health Organization, 2016) guidelines for postnatal care were used as adopted by the Ministry of Health. A prior meeting was organized with the key stakeholders of the health facility such as the Medical Director, Administrator, the Obstetrician or head of maternity, the Principal Nursing Officer, the ward medical officers, midwives and the records officers. They were consulted and involved in the setting of the standards of care, which are applicable in practice and were used to measure the quality of care.

Collecting data

This process was facilitated by using the Criterion - based audit which involves, comparing the current practice against the agreed-upon criteria. The process enhanced the involvement of staff in reflecting on their practice and, actively being involved in setting standards, aiming at bringing improvement in care within 24 hours for the mother and baby. An extract checklist was designed with targets derived from (World Health Organization, 2016) guidelines as adopted by the Ministry of Health, regarding postnatal care within 24 hours to measure the set standards as agreed with the team. It also required retrieving data and extracting it from the mothers' files retrospectively for one month. The records included the care procedures which should be documented. The non-recorded procedures were regarded as not done.

Data Analysis

The data extracted from the mothers' files was analyzed using a statistical package, and findings presented and discussed with the relevant stakeholders of the health facility. This guided the development of an action plan on what needs to be done in

improving postnatal care for the mothers and babies within 24 hours.

Operational definition of terms

Quality postnatal care: According to (World Health Organization, 2016), this means the extent to which postnatal health care services are delivered to clients and patient populations aiming to improve desired health outcomes.

Postnatal period: begins immediately after the birth of the baby up to six weeks (42 days) (WHO, 2010; Commonwealth of Australia, 2012).

Postnatal care: Is defined as the means to care for the baby and mother during the first six weeks after birth (World Health Organization, 2014a). For purposes of this study, postnatal care will be restricted to 24 hours.

Criteria/Audit: This is a systematically developed statement that can be used to assess the appropriateness of specific health care decisions, services, and outcomes. (Graham, 2009).

Standard: “A standard is an explicit statement describing the quality of care to be achieved, which is definable and measurable”(World Health Organization, 2016).

Process: This means the activities that are carried out on the patient using systematic steps like the criterion-based audit. (Safe Motherhood strategies n.d)

Newborn care: Care or services provided to the baby immediately after birth up to 24 hours in the postnatal ward (World Health Organization, 2016).

Summary

The chapter has described the background of the study, problem statement, objectives of the study, significance of the study, and assessing the quality of postnatal care. It has also described the criterion-based audit which facilitated quality improvement

during postnatal care, by identifying and streamlining the existing postnatal care practice against the set standards of care, to improve the care of mothers and babies within 24 hours after delivery. Chapter two presents the reviewed literature from different search engines relevant to various studies about the assessment of the quality of postnatal care services offered to mothers and their babies in the immediate postnatal period globally, regionally, and nationally. Chapter three discusses the methodology that was used to collect data and analyze the study findings. This includes, the study design, setting, population, sampling methods, the inclusion and exclusion criteria, data collection methods, management and analysis techniques and ethical consideration.

Chapter Two: Review of Literature

This literature presents information about the quality of postnatal care services offered to mothers and their babies within 24 hours after delivery. The key terms used for searching are; quality of postnatal care, mother care, newborn care, postnatal period, criterion-based audit. The search engines used to retrieve the literature included Google Scholar, Pub Med, HINARI, Kopernio, Wiley, Ebsco Health and Lib Hub. The main sources of the literature are research articles from journals, the (World Health Organization, 2022) guidelines and fact sheets.

The literature was presented using the logic statements under the subheadings; Maternal and neonatal deaths in the first 24 hours of birth still a global, regional, and national challenge; quality postnatal care within 24 hours promotes maternal and newborn wellbeing; use of postnatal care recommended guidelines is still a challenge, and use of criterion-based audit improves the quality of postnatal care practices.

Maternal and Neonatal Deaths in the first 24 hours of birth is Still a Global, Regional, and National challenge

Worldwide, the majority of maternal and newborn deaths occur within the time of birth especially in the first 24 hours after birth (Kanté et al., 2015; Tesfahun, Worku, Mazengiya, & Kifle, 2014; Workineh & Hailu, 2014; World Health Organization, 2016). In the global context, maternal mortality is more than half a million after birth resulting from complications of pregnancy and childbirth(Say et al., 2014; World Health Organization, 2014a). According to (Akibu et al., 2018; Chungu et al., 2018), 50% of maternal deaths and 40% of neonatal deaths occurred in the “immediate postnatal period” which is the first 24 hours after delivery. Postpartum hemorrhage is the leading cause of

maternal mortality contributing to 19.7% of maternal death globally (Lumala et al., 2017; Say et al., 2014). Furthermore,(Chungu et al., 2018; Ilesanmi & Akinmeye, 2018; Organization, 2014; Workineh & Hailu, 2014), report that globally, 289,000 women die annually of which 50 to 71 % of deaths happen within the postnatal period.

According to (World Health Organization, 2014b), Maternal mortality in developing countries is 15 times (240/100,000 live births) higher than in developed regions (16/100.000 live births). In Sub Saharan Africa maternal mortality is still high at 99% with 287,000 women dying from complications of childbirth (Chungu et al., 2018; Workineh & Hailu, 2014) and newborn deaths mainly occurring due to low birth weight, preterm birth, and asphyxia (Ezeh, Agho, Dibley, Hall, & Page, 2014; Kanté et al., 2015; Okawa et al., 2015). It is further stated that postpartum bleeding is the major cause of maternal death in both developing and developed countries (Abebo & Tesfaye, 2018; Benova et al., 2019; Ilesanmi & Akinmeye, 2018).

Nationwide, the maternal mortality ratio in Uganda is still high (Lumala et al., 2017). According to (Ndugga et al., 2020) maternal mortality is at 336/100,000 live births and neonatal mortality of 27 per 1000 live births. Eighty percent of neonatal deaths are due to birth asphyxia, infections, complications from prematurity, while maternal death is mainly caused by haemorrhage (46%) and sepsis (6%), MOH annual performance Report 2018/2019. Overall, postpartum haemorrhage remains the leading cause of maternal mortality accounting for 84% of the maternal cases (MOH, HMIS, 2018/2019).

Maternal mortality within 24 hours

Postnatal care is one of the major components of the Safe Motherhood Initiative forming a strategy in preventing maternal morbidity and mortality worldwide. (Khanal et

al., 2014; Workineh & Hailu, 2014). According to various studies conducted regarding postnatal care services, the highest mortality in mothers and babies occur immediately after birth (Akibu et al., 2018; Chungu et al., 2018; Mon et al., 2018b; Tesfahun et al., 2014). Globally, according to (Munawar et al., 2017), the quality of postnatal care was still low. It is therefore evident that the postnatal period within 24 hours requires great attention to minimize the occurrence of complications.

A study by (Ilesanmi & Akinmeye, 2018), that evaluated the quality of postnatal care and mothers' satisfaction at the university college hospital Ibadan, Nigeria, used an exploratory cross-sectional design, on 57 purposively selected mothers in the postnatal clinics and wards. Findings indicated that only 47.9% of the recommended postnatal care was given to women on the wards while 42.3% in the postnatal clinic. Maternal Mortality is still high occurring from similar causes especially in developing countries as stated in the Sustainable Development Goal 3 – in developing regions maternal mortality is still 14 times higher than in the developed regions; evident in Uganda at 343/100,000 live births (Ndugga et al., 2020). Most of the maternal deaths in Uganda occur during the postpartum period following postpartum bleeding comprising 84% (MOH, HMIS, 2018/2019)

Newborn mortality within 24 Hours

Globally, two million five hundred thousand neonatal deaths occur in the first month of life (UNICEF, 2018), and 7,000 newborn deaths every day (World Health Organization, 2019). The postnatal period is very crucial for the survival of the newborn. The highest risk of neonatal mortality is during delivery and the first 24 hours. Up to half of all newborn deaths occur within 24 hours (Akibu et al., 2018). In sub-Saharan Africa,

1.2 million newborns die annually, which is equivalent to 13,000 deaths per day or approximately 9 deaths every minute (Kananura et al., 2016). To achieve the Sustainable development goal (SDG) 3 set target for reducing neonatal death, appropriate strategies should be put in place to improve neonatal survival. The major causes of neonatal mortality in Uganda like in other sub-Saharan African countries are prematurity and birth asphyxia. Timely interventions at the time of birth and within 24 hours could prevent most of the newborn deaths such as clearing the airway, appropriate cord care, and early initiation of exclusive breastfeeding. Recent studies indicate that neonatal mortality rates have remained stagnant in the country at 27 deaths per 1,000 live births (Gender, Labour, Development 2015; Geremew, Boke, & Yismaw, 2020; Kananura et al., 2016; Ononge et al., 2016). Therefore, the study sought to assess the quality of postnatal care services offered to mothers and their babies within 24 hours after delivery.

Quality Postnatal Care in the first 24 hours Promotes Maternal and Neonatal Wellbeing

The quality of postnatal care plays an important role in preventing maternal and fetal morbidity and mortality. This is the degree to which maternal and newborn services increase the likelihood of timely, appropriate care to achieve desired outcomes that are both consistent with the current professional knowledge, and consider the preference and aspirations of individual women and their babies and families (World Health Organization, 2016).

The quality of care is further defined by (World Health Organization, 2016), as the extent to which health care services are provided to individuals and patient populations to improve the desired health outcomes. The healthcare must be safe,

effective, timely, efficient, equitable and people-centered (World Health Organization, 2016). Studies by (Djellouli et al., 2017; Lumala et al., 2017; Mon, Phyu, Thinkhamrop, & Thinkhamrop, 2018a; Munawar et al., 2017) reveal that the quality of postnatal care for the wellbeing of the mother and baby can be improved. Strategies of reducing preventable maternal and neonatal mortality can be achieved by increasing quality and skilled postnatal care which can be through the utilization of the (World Health Organization, 2016) guidelines.

World Health Organization, (2022) recommendations indicate preventive measures like timing of the first bath up to 24 hours to prevent hypothermia and staying in hospital for 24 hours before discharge after vaginal birth are very critical.

Use of Postnatal Care Recommended Guidelines is Still a Challenge

(World Health Organization, 2016), in their recommendations, set the guidelines for use in postnatal care to both low and middle-income countries. According to the (World Health Organization, 2014), the aspects of quality in offering postnatal care involves the utilization of the clinical guidelines aimed at improving the quality of postnatal care and health outcomes to mothers and babies within 24 hours. (Pallangyo, Mbekenga, Olsson, & Källestål, 2017), noted that postpartum care was globally neglected contributing to 50% of maternal deaths in the first week after birth. Amidst efforts in achieving the recommended standards specified by (Khanal et al., 2014; World Health Organization, 2016) reported that the standards were still infrequently met with at least 2 women out of 5 receiving postnatal care within one hour after birth. Similar studies by (Dey, Ononge, Weeks, & Benova, 2021; Kanyunyuzi et al., 2017) indicated that majority of first postnatal checks occurred between one and four hours after birth. Other studies

also found that there are challenges in meeting the WHO standards in postnatal care where the standards were infrequently met resulting into complications like postpartum haemorrhage and subsequently maternal mortality (Dey et al., 2021; Ilesanmi & Akinmeye, 2018; Muleya, Mwape, Katowa-Mukwato, & Maimbolwa, 2018; Muwema et al., 2022; Pindani et al., 2020; World Health Organization, 2016). (Muwema et al., 2022) further noted that few mothers received appropriate care during postnatal care within 24 hours hence increasing the likelihood of postpartum complications. Postnatal care is still a challenge, an underutilized service and a neglected aspect of maternal and neonate health in developing countries (Abebo & Tesfaye, 2018; Duysburgh et al., 2015; Ilesanmi & Akinmeye, 2018; Izudi & Amongin, 2015; Kanté et al., 2015; Kozuki et al., 2017; Wilunda et al., 2015; Workineh & Hailu, 2014).

(Ilesanmi & Akinmeye, 2018), conducted a study to evaluate the quality of postnatal care and mothers' satisfaction at the university college hospital Ibadan, Nigeria. The findings revealed that there were insufficient midwives with an average of the midwife to mother ratio of 1: 8 per allocated shift. The postnatal ward lacked standardized postnatal guidelines and protocols in the provision of postnatal care to the mothers and their babies. The midwives were seen not assessing the mothers for the following parameters during postnatal care; excessive bleeding, passing of urine, complaints like headache, fatigue, backache, and perineal hygiene. The mothers were not counseled about danger signs and physiological changes expected in the puerperium including emotional support.

Other studies that revealed below the standard care according to WHO practice guidelines in the implementation of quality postnatal care include; (Chimtembo, Maluwa,

Chimwaza, Chirwa, & Pindani, 2013) wherein their study in Malawi revealed that postnatal care contents of service delivery were not done such as the midwives not assessing the mothers in the first hour after delivery. This also included not conducting a physical examination of the mother and baby until on discharge. Partial information was given during counseling and education about danger signs and postnatal exercises. Another study by (Muleya et al., 2018), in Zambia regarding postnatal care within six hours following delivery, findings noted there was poor information flow between health care providers and mothers as regards new born care. According to (De Graft-Johnson et al., 2017) in assessment of quality of newborn care immediately after birth, their findings showed that stimulation or ventilation of the baby, including resuscitation were not performed by the service providers. (World Health Organization, 2022), recommends that newborn assessment for danger signs such as not feeding well, convulsions, fast breathing, severe chest indrawing, no spontaneous movement, fever > 37.5 or low body temperature < 35.5 and jaundice in the first 24 hours after birth should be carried out. (Ndugga et al., 2020; World Health Organization, 2020) further recommend that health workers promptly examine all mothers and their babies early in order to identify and treat complications timely hence promoting maternal and newborn health. The provision of skilled postnatal care is much lower compared to prenatal and intrapartum care despite proven benefits on the mother and the newborn health (Akibu et al., 2018).

(Kanté et al., 2015) in a study about factors associated with compliance with the recommended frequency of postnatal care services in Tanzania, revealed that WHO guidelines promoted basic postnatal care yet the implementation of the practice by the skilled professional is often incomplete. They further noted that the postnatal services are

available and yet the health professionals do not offer them comprehensively. According to a study conducted by (Dey et al., 2021) regarding immediate postnatal care following childbirth, they noted that the inability of the midwives to provide early postnatal care could be attributed to work over load and burnt out health care workers struggling to keep with the increasing care demands from the mothers. In addition, much as WHO postnatal care guidelines exists, there is limited literature in providing guidance to implementation of care to health workers thus, affecting the quality of expected postnatal care(Dey et al., 2021).

The government of Uganda through the Ministry of Health integrated postnatal care services into the Reproductive Health package for Maternal and Child Health, minimum health care package, emergency obstetric care. and adopted the (World Health Organization, 2014a) recommended guidelines for postnatal care as strategies to strengthen postnatal services and improve the quality of postnatal service delivery in the country.

Criterion – Based Audit Improves Quality of Care

Criterion-based audit is a quality improvement process that seeks to improve patient care and outcome through a systematic review of care against explicit criteria and implementation of change (Kayiga et al., 2016). Criterion–based audit facilitates the improvement in the quality of clinical care in this context, postnatal care offered to mothers and babies within 24 hours (Kanyunyuzi et al., 2017; Lumala et al., 2017; Munawar et al., 2017). The areas of quality improvement revealed from these studies include; initiation of continuing medical education sessions, simulation drills, displaying guidelines; Protocols, posters, and standard operating procedures at various work points

as reminders, support supervision and dissemination of agreed interventions; then improvement in assessment in the general wellbeing of the mother and baby respectively. The use of the criterion-based audit fosters the ability of the health workers to provide adequate care while basing on the agreed-upon set standards that meet the local demands of the population (Weeks, Lightly, & Ononge, 2010), assert that the use of Criterion - based audit is not to provide answers but to empower health providers in developing solutions to the given problems. This can be enhanced through planning, defining clear criteria, setting standards by developing guiding tools, and analyzing the findings to facilitate future change through regular feedback.

Globally, Criterion – based audit was initiated from the developed countries such as United Kingdom, Ireland, with developed audits for best practice such as National Institute for Health Care Excellence (NICE), 2002; STN019 Clinical Audit Standard VI, 2015; PHECC – “Practical Guide to Clinical Audit”; and Donabedian (1966) theoretical framework on quality of health care. These audits are applied in different health settings for purposes of improving the quality of work or services provided. Some African countries have adapted Criterion based audit as a strategy aimed at improving the quality of care among in – patients with severe pre-eclampsia and postpartum haemorrhage (Lumala et al., 2017) including assessment of early postnatal (Hassan et al., 2016; Kanyunyuzi et al., 2017). For successful outcomes of quality of postnatal care to be realized, criterion-based audit will enable identification of areas of good practice and gaps that influence the achievement of set targets of recommended care and thus an improvement in the quality of care. The literature about the quality of postnatal care is still scarce in Uganda. Therefore, the literature focused on reviewing sources of

information regarding the quality of postnatal care, and strategies in improving the care of mothers and babies within 24 hours after delivery.

A Criterion – based audit by (Hassan et al., 2016) assessed immediate normal postpartum nursing care at women’s health university hospital, in Assiut, Egypt. The audit was done on 500 women selected by convenient sampling. The results revealed improvement in the immediate postnatal nursing care of the mother such as the completeness of the placenta, and membranes, uterine contraction, fundal height, perineum for inflammation, and tears while for the baby, wiping and drying to ensure thermal protection was done, ensuring skin to skin contact with the mother, baby weighing, hygiene, feeding and education on newborn care were improved.

Some studies have been carried out in Uganda regarding the use of Criteria based audits as a means to improve the quality of care among women in the intrapartum and postpartum period, yet still, maternal and newborn mortality remains high. According to (Lumala et al., 2017) in a study entitled “Assessment of quality of care among in-patients with postpartum haemorrhage and severe pre-eclampsia at St. Francis hospital Nsambya: a criteria-based audit, findings revealed 3 out of 4 adherence rates to standards of care for post-partum haemorrhage after implementation of agreed interventions.

In conclusion, the clinical audit is a continuous process for improving practice (Kitson-Reynolds, Ferns, & Trenerry, 2015). The clinical audit ensures that good quality of care relating to postnatal care is provided (Graham, 2009). The clinical audit ensures that good quality of care relating to postnatal care is provided. The audit provides for standards of care guided by a checklist and an action plan. The action plan is the most critical part of the audit which facilitates the maintenance of standards and improvement

measures (Basavanhappa, 2013).

This chapter has described literature reviewed from various studies which indicate that maternal and neonatal mortality is still a challenge, preventing maternal and neonatal mortality can be achieved by increasing quality postnatal by using set standards. The quality of postnatal care offered to mothers and babies within 24 hours after birth remains a challenge in Uganda. Some studies indicate that the standards of postnatal care are infrequently met and the practice of care in the immediate postnatal is still low. Criterion – based audit enables identification of areas of good practice and gaps that influence the achievement of set targets of recommended care and thus an improvement in the quality of care.

Chapter three describes the research methodology to address the research objectives of the study. These include, the study design, setting/area, target population, sampling methods, inclusion and exclusion criteria, sample size estimation using the Morgan and Krejcie table, data collection methods, validity and reliability, instrument/tool, data management, data analysis, and data quality control, and ethical consideration, including dissemination of findings.

Chapter Three - Methodology

The chapter describes the methods that were used in this study under the following headings: the study design, setting/area of study, study population, sample size determination, sampling methods, data collection methods, content validity and reliability, data collection procedure, data management and analysis, data quality control, and ethical considerations, including dissemination of findings.

This study was part of a bigger study entitled “Assessment of the Quality of Perinatal Care, and Development of an improved Quality of Perinatal Care Model to reduce Perinatal Deaths in Bunyoro Region”. This study focused on assessing the quality of postnatal care services given to mothers in the first 24 hours in one of the general hospitals in the Bunyoro region. The study employed mixed methods designs which are quantitative and qualitative. These were discussed in a sequential manner.

Quantitative Method

This involved use of numbers and graphs to test or confirm theories and to establish generalization of facts about the study topic (Streefkerk, 2019). The data extraction tool was used to collect quantitative data on the options of postnatal assessments done and the care provided as documented in the patient’s postnatal files.

Study Design

The study was a facility criterion-based audit, descriptive cross-sectional study retrospective in nature. The purpose of a descriptive study design was to assess the quality of postnatal care at the general hospital and the practice of postnatal service while relating to criterion-based audit. A cross – sectional approach was essential because the

data was collected at one point in time (Polit & Beck, 2012). It involved collecting data from the files of mothers who delivered from the hospital in the past three months. The audit focused on the care that was given to mothers and their babies within 24 hours after delivery.

Study Area

The study was conducted at a public general hospital in western Uganda. The hospital is located along the Kampala – Gulu Highway 225 km from the capital city, found in Kiryandongo district with a bed capacity of 109, serving over a population of 500,000 people from parts of the districts of Masindi, Nakasongola, Nwoya, Apac, Oyam, and Amuru (UBOS, 2018/2019). This site was chosen because of its proximity along the highway facilitating the accessibility of health services and its wide healthcare coverage in the surrounding districts. It was also one of the recently renovated health facilities by the government in 2017. In a way, the facility attracts more clients due to improved infrastructure and service delivery.

The district hospital is within one of the regions that has the highest fertility rates of 7.5; the same region has a high proportion of teenage pregnancies (10.6%), and early marriages (19%) (UBoS, 2014). A district hospital offers health services to a population of about 500,000 people (MoH, 2011). The facility being a public hospital, offers free healthcare services including maternal and child health services to the women within the area and the surrounding districts, which can be a representative population for the study.

Study Population

The study population comprised of mothers who delivered in the past three months referring to the quarterly records reviewed, guided by a data extraction tool.

Inclusion Criteria

The inclusion criteria focused on files of mothers who delivered in the general hospital and stayed in the hospital for 24 hours before discharge.

Exclusion Criteria

The exceptions included, mothers who developed postpartum haemorrhage, post eclampsia, who died or lost their babies. Their files were excluded from the data extraction process. These categories of women require more attention and frequency of care than the routine care or even separated from the rest of the mothers

Files with missing data/ incomplete data were excluded from the study

Sample Size Determination

The sample size was determined based on the number of hospital deliveries (postnatal files) over the last 3 months referring to the quarterly records in the maternity unit. This was also guided by the Krejcie and Morgan table (1970) where the study population with the notion N and the sample size, S were used. In this case, the N being 700 (number of hospital deliveries over the last three months and the S figure corresponding with it 248 were used. See Appendix (G) for the table. Thus, the required sample size was 248 respondents (files).

Sampling procedure

Sampling is the process of selecting a portion of the population to represent the entire population so that inferences about the population can be made. (Polit & Beck, 2008). The study used the probability sampling design and given the past three months hospital delivery records, approximately 700 deliveries were registered. The sample size corresponding to 700 on the table was 248. However, the respondent's files were

selected using a systematic random sampling technique as illustrated in the formula below.

$$\frac{K=700}{248}$$

$$K=2.8 = 3$$

The first file of the respondents was chosen at random, then the sequent files were chosen. Every third inpatient file was picked, until the 248 files was obtained.

Data Collection Methods

Data collection Instrument

The data collection tool developed with the following standards identified in guiding postnatal care within 24 hours from the World Health Organization (2013, 2014, & 2015) and the UK's National Institute for Health and Care Excellence (NICE, 2012) guidelines will be used. The data extraction checklist for the mother and the newborn care within 24 hours (Appendix D), consists of preliminary content of mother-baby care up to 6 hours developed by the research team using the WHO postnatal care guidelines in consultation with experts in obstetric care and adopted in a study by Kanyunyuzi et al. (2017). In a retrospective data collection process, the criteria consisted of key areas as; Baby assessed immediately after birth, mother assessment within the first hour after delivery. Baby assessed within six hours after transfer to the postnatal ward. The mother assessed for her wellbeing within 6 hours after transfer to the postnatal ward, baby assessed for wellbeing within 6 hours of admission to the postnatal ward. Mother/caretaker advised on signs and symptoms that are suggestive of potentially life-

threatening physical condition of the woman. Mother/main caretaker of baby advised on signs and symptoms that are suggestive of potentially life-threatening to the baby that require emergency treatment. Mother or caretaker advised on the care of the mother and baby during the postnatal period before discharge.

Using this criterion, the data extraction tool contained various aspects of assessments which included; the biodata of the mother consisting of; mother's initials, inpatient number, mother's age, parity, date of admission in labor, date of delivery, time of delivery, mode of delivery either spontaneous vertex delivery or cesarean section; and if caesarean, the indication for selected such as, severe pre-eclampsia, two previous scars, cord prolapse, prolonged labour, obstructed labour, malpresentation, antepartum haemorrhage, and others. The biodata also included the gestation period in weeks, (37 to 42), any chronic diseases recorded such as hypertension, diabetes mellitus, asthma, sickle cell disease, and others or none; the date of admission to the postnatal ward after delivery, time of admission to the postnatal ward after delivery, the mother's HIV status code documented as; tested and negative (TR), tested and positive,(TRR), tested positive and on treatment (TRR/ART), unknown HIV status.

The immediate care of the newborn after delivery in the labour ward comprised of the Apgar score if done in one minute and five minutes. If the Apgar was less than 4, was resuscitation done and recorded like suction done, stimulation of the baby, ambu bag and mask used, resuscitation drugs e.g. adrenaline, dextrose 10%, ampicillin and gentamycin, breastfeeding initiated within the first hour, tetracycline eye ointment administered, vitamin K given, if a mother was HIV, positive, a baby was given Nevirapine syrup.

Assessment of the mother within the first hour of delivery in the labour ward

comprised of fundal height estimation, check for uterine contraction, vaginal bleeding, temperature, pulse, blood pressure, micturition within an hour after delivery, after birth pains, and the incision site for caesarean mothers. Assessment of the baby within the first hour before transfer from labour ward to postnatal ward consisted of; the weight of the baby, head circumference, temperature, congenital abnormalities, bladder and bowel function (passed urine and meconium), colour of the skin, colour of the eyes (jaundice), and the respiration rate.

The assessment of the mother for her wellbeing within 6 hours of admission to the postnatal ward included; assessment for after birth pains, assessment of incision site, e.g. soiling of the dressings.; administration of drugs, antibiotics, analgesics, Hematenics; blood pressure, pulse, passing of urine, and pads checked for the amount of per vagina bleeding.

The assessment of the baby's wellbeing within six hours after transfer to the postnatal ward consisted of; temperature, check on the cord, bowel and bladder function, colour of the skin, and breastfeeding done.

The following information was reviewed regarding the signs and symptoms suggestive of potentially life-threatening physical conditions to the woman within 24 hours of the postnatal period; lochia with offensive smell per vagina, pallor of the mucus membranes (palms and soles), severe headache, distended abdomen, and failure to pass urine. The information included the signs and symptoms of potential life-threatening conditions to the baby that required emergency treatment within 24 hours of the postnatal period included; failure to breastfeed, jaundice, bleeding from the cord, excessive crying, and excessive coldness of the baby's body.

The following information was reviewed about discharge regarding mother's self – care and the baby in the postnatal period; counseling about family planning, mental health, nutrition, danger signs to the mother, rest and sleep, and personal hygiene, while for the baby the care in the postnatal period included, delayed bath up to 24 hours, maintenance of warmth, exclusive breastfeeding, cord care, recognition of danger signs to the baby, continuity of prescribed treatment, immunization status, and review dates.

Quality Control

In order to attain the validity and reliability of the tool, the instrument was pre-tested before the actual data collection process in a general hospital with similar characteristics to the study area

A pilot may reveal problems such as a data collection tool that is difficult to understand or to complete, or be used to identify themes in answers provided to open questions on data collection forms, and these, can be reformed as tick-box options for ease of analysis (Potter, Fuller, & Ferris, 2010). The research assistants were trained for two days on the use of the data collection tools before the procedure. The researcher ensured that the data collection process was supervised. The electronic checklists were safely backed up in the server room and monitored daily by the Principal Investigator, as the data is entered into the ODK software (Marks et al., 2020) then later exported to SPSS version 20 software for analysis.

Validity

A quality criterion referring to the degree to which inferences made in the study are accurate and well-founded; the degree to which the instrument measures what it is supposed to measure (Polit & Beck, 2008). The instrument is developed concerning

literature reviewed on some studies that have similar study objectives. Once a criterion is selected, criterion validity can be assessed easily (Polit & Beck, 2008). This was achieved by referring to the (World Health Organization, 2016) postnatal standards and guidelines developed and nationally adopted by the Ministry of Health to ensure the quality of postnatal care services offered in the general hospital. Internal validity was ensured by conducting a pre-test of the research instrument in a similar study setting as the intended area of study.

A pilot study was carried out at Kawolo General hospital in Lugazi where the data extraction tool was used to pre-test aspects of postnatal care offered to mothers retrospectively using at least 10 retrieved postnatal files from the last three months. This hospital had similar characteristics as the selected study area. The findings from the pre – test guided re-designing of the data collection tool as required.

Reliability

The degree of consistency with which an instrument measures the attribute (Polit & Beck, 2008). The tool should yield the same results once used repeatedly over a given period of time while measuring the same variables (Etyang, 2018). In addition, the research tool reliability would be facilitated by pre-testing it and ascertaining the Alpha values, for each study variable as recommended by Cronbach (1946). Permission was obtained from Kawolo General hospital administration to pre-test the tool. The pre-tested tools were shared with the research supervisor to adjust and achieve clarity on the questions or statements asked and answers obtained. The research assistants were trained regarding use of the research tool to ensure that they read and follow the questions without altering the actual meaning.

Data Collection Procedure

A letter of permission was obtained from Uganda Christian University after clearance from the Ethics and Research committee. A letter of approval by the hospital research committee was obtained by the Principal Investigator to access the health facility. An appointment was fixed to meet the head of maternity and the records officer for access to the data. A safe and secure room in the maternity department was used during the data collection process with the help of the research assistants. The data collection process was guided by the use of the installed ODK software on a gadget (smartphone, laptop, or tablet), whereby every third file was picked and data extracted daily until the required sample size was obtained.

The number of files to be retrieved per day were determined by the number obtained on the first day. The Principal Investigator and the research assistants- maintained confidentiality at all times during the data collection process. Any concerns noted while collecting data were shared in consultation with the ward in-charge or records officer.

Data Management

The Principal Investigator ensured that the data extracted daily was monitored from the server and checked for completeness at the end of each day. Data was cross checked using the tool to ensure all the information is extracted as required and reviewed with the help of the technical person. A code was attached to each sampled file to avoid errors. The excel sheet was cleaned and the dataset exported to SPSS for analysis. This involved putting together the data extracted and translating it into meaningful information (Polit & Beck, 2008)..

Data Analysis

Data was analyzed according to the research objectives. Data was cleaned, coded and analyzed using the Statistical Package of Social Scientists (SPSS), version 20 for univariate analysis. The descriptive analysis was used to provide data in the form of frequency distribution according to the variables in the study. The demographic information from the inpatient files and the assessments done on the mother and baby was analyzed using descriptive statistics to determine the frequency of each indicator. The categorical variables for instance age were expressed as percentages, and continuous variables were expressed as mean (Standard deviation) or median (interquartile), the age captured was recorded as numerical digits in years and afterwards, the data was categorized according to age ranges as retrieved from the files (18-28, 29-38, 39-48) respectively. It included categorizing the parity (1 -3, 4 – 6, 7 – 9, 10 – 12) and the gestation age in weeks; from (37 – 39 weeks, 40 – 42 weeks). The parameters to be checked for instance, immediate care of the newborn within one hour and the mother care within one hour, newborn and mother care after transfer to postnatal care within one hour, six hours and 12 hours were analyzed. Patient education regarding signs and symptoms of physical life-threatening conditions for both the mother and the newborn were also analyzed descriptively, same for information shared with mother and newborn on discharge since majority of the responses require either a “yes” or “no” response.

Qualitative Method

This is an approach that is expressed in words used to understand concepts or experiences. At the same time, it helps in obtaining in-depth information about the study topic (Streefkerk, 2019).

Study design

A descriptive exploratory design was used to guide the study in getting a clear picture of the problems at the study site (Etyang, 2018). An exploratory design also helps in guiding the researcher on how postnatal care is conducted in the general hospital. The qualitative method was used during data collection using the key informant guide to obtain in-depth information regarding factors associated with provision of quality postnatal care practices by the midwives and doctors working in the maternity ward.

Study Population

This comprised of the Medical Superintendent, Principal Nursing Officer, the head of department and the ward in - Charge by virtue of their administrative roles, they are important in providing this information through an interview which was audio recorded. It also included the focal health team involved in providing postnatal care such as the midwives and the records officer.

Table for Key Informants

Gender	M	F
	2	6
Designation		
MO	2	
PNO		1
NO-Midwifery		1
Enrolled Midwives		3
Record's officer		1

Sampling methods

A non – probability sampling method, using purposive sampling was chosen since the staffing levels in the maternity ward was small and the health team in the department

were all be expected to participate in the study. A purposive sampling requires that the researcher selects informants believed appropriate or connected to the study (Etyang, 2018; D. F. Polit & Beck, 2018).

Data Collection Instruments

The qualitative method was guided by use of a key informant guide. An interview is a data collection method in which the researcher asks questions to a respondent, either face to face or by telephone (Polit & Beck, 2008). Interviews provide detailed data in a relatively easy and inexpensive way and the contact informants can clarify issues as needed (Cossham & Johanson, 2019). According to the Ministry of Health standard operating procedures and guidelines (2020), due to the COVID 19 pandemic, physical distance of 2 meters apart, and wearing a face shield or mask was required while conducting a face to face interview (MOH, 2020). The key informant interview guide (Appendix D) was designed with open-ended questions to facilitate an in-depth acquisition of information from the audit team concerning standards that guide postnatal care (Etyang, 2018).

Data collection method

Key informant interviews are qualitative in – depth interviews with knowledgeable persons in a given community (UCLA, n.d). Key informants focus on expertise and willingness to share information that the researcher needs (Bernard, 2018). An appointment was scheduled to meet the key informants at their respective work stations. Given the administrative roles for the head of department, and the nursing officer in – Charge of maternity ward, information about criterion-based audit was captured through audio recording after obtaining their consent (Appendix B). The

interview took approximately 15 to 25 minutes. An elaborate explanation about the interview was made and consent was requested to have the interview recorded. Reassurance was made regarding the confidentiality of information obtained. The researcher read the questions to the respondent as she recorded/wrote the responses. The number available was purposively selected due to their knowledge in the study topic (Nyumba, Kerrie, Derick & Mukherjee, 2018). The participants were assured that the findings derived from the data collection process would be shared.

Data management and presentation

The data was collected from the Hospital Director, Head of department, Principal nursing officer and the ward in – charge. Each interview was audio recorded after the participant has signed the consent form (Appendix B). The note book and pen were also used to write the participant’s narrations including the non-verbal communication observed during the interviews.

The interview questions were checked for completeness and consistency of information obtained from the participants to ensure the confirmability of the collected information. All answered interview-guides were double-checked for completeness and approved by the Principal Investigator for safe storage.

Qualitative Data analysis

Qualitative data analysis employed the form of loosely structured, narrative material such as verbatim dialogue and audio recorded interviews between the interviewer and the participant (Polit & Beck, 2008). The purpose of the analysis was to

organize, provide structure by converting data to smaller and more manageable units that could be retrieved and reviewed, and to elicit meaning from the data obtained (Polit & Beck, 2018). A data collection software converts audio recorded data into text, while the researcher could also interview the participants and reads through the data repeatedly to derive meaningful segments which formed category schemes and corresponding codes that used to sort and organize the data (Polit & Beck, 2008). Coding of the data and analysis work was done manually. A research assistants coded the whole data set to ensure consistency across interviews. Nevertheless, coding by two or more people ensured reliability of the data (Polit & Beck, 2018).

The data obtained from the key informants' interview was transcribed by the researcher using related concepts grouped together to form themes and sub themes. Such themes and sub – themes provided in – depth interpretation of the underlying meanings of the text and condensing data without losing its quality (Polit & Beck, 2018) The analyzed material was reviewed by the researcher's supervisors to get a common understanding on the codes formulated including the categories and subthemes. Therefore, content analysis facilitates examination of narrations related to the study, through breaking transcriptions into small units, read several times to achieve the main meaning behind the data (Mojtaba & Sneigrove, 2019).

Quality control

During the interview, questions were explained to the participants to avoid ambiguous or irrelevant responses. The participants also had an opportunity to clarify or adjust their responses for accuracy. Furthermore, the researcher used English which she is fluent in, hence ensuring quality data collection. The interviews were audio recorded and

the discussion narratives were noted during each session in order to obtain all relevant information.

Dependability which is the stability of data over time and over conditions was achieved by careful recording, transcription of verbatim and coding findings then validating data (Moon, Brewer, Januchowski-Hartley, Adams, & Blackman, n.d.) Transferability which is the extent to which the findings can be applicable in other settings or groups was achieved by purposive sampling of the participants from different age groups, socio-economic status, and geographical locations.

Ethical Considerations

The researcher submitted the proposal to Uganda Christian University Research and Ethics Committee. The proposal was approved with the number UCUREC 2021-96 A letter was written to be presented by the researcher to the general hospital to be endorsed by the Medical Superintendent. The head of the department and the Nursing officer in – charge of, maternity ward discussed with the researcher about the research study and scheduled an appointment to start the data collection process. The researcher also sought permission to access the medical records with the assistance of the records officer. The Ward In-charge introduced the researcher to the midwives on the ward to facilitate their cooperation. The Records officer released the inpatient files to the researcher. While reviewing the mothers' records, unique identification numbers were assigned to each extraction tool to prevent revealing the individual's particulars. The researcher shared with the respondents (focal maternity team) the purpose of the study, assured the respondents that their participation in the study was absolutely voluntary and respondents were allowed to withdraw from the study when they felt uncomfortable.

This was facilitated by providing the respondents a consent form (Appendix B) which they signed as an indication of agreeing to the exercise. Respect for human dignity entails the right to self-determination and full disclosure (Polit & Beck, 2018). The respondents were assured that the research was purely for study purposes and no known risks are attached to the respondents and the data would be retrieved from the mothers' files. The researcher assured the respondents of anonymity as their names would not be included in the interview guide session as this promoted confidentiality; as stated by (Polit & Beck, 2018) that a participant has a right to fair treatment and privacy.

Summary

This chapter has described the study design, study setting, target population, inclusion and exclusion criteria, sampling methods, size, collection of data, data control; validity and reliability of the tools, management of data and analysis, ethical considerations, and dissemination of results. Chapter four presents the findings of the study in various forms; tables and narratives, including figures. These were discussed in chapter five where the interpreted data was discussed concerning the evidence of literature reviewed.

Chapter Four: Presentation of Findings

This chapter presents findings for a Criterion-Based Audit of Postnatal Services given to Mothers and Newborns within 24 hours at a General Hospital in North-Western Uganda. The findings are presented according to the study objectives which included; determining the quality of postnatal care using World Health Organization criteria and standards applicable to the general hospital, comparing current postnatal care practices in

the general hospital with agreed on World Health Organization criteria and standards, and determining the health facility factors associated with the quality of postnatal care of mother and baby in the general hospital. The findings are presented in tables and graphs. The quantitative analysis was complimented by the qualitative analysis in various areas of the presentation of the research findings below.

Social-Demographic Characteristics of Study Population

The table 1 presents the findings about the socio-demographic characteristics of the 248 mother's files that were reviewed during the data collection. The variables assessed included the age, parity, gestation period in weeks, chronic diseases such as hypertension, HIV status of mothers including HIV positive mothers on ART, duration of labour, mode of delivery and indications for caesarean section.

Table 1: *Social-demographic Characteristics of the Mothers*

Demographic Characteristics		Frequency (N=248)	Percentage (%)
Age	16-19years	58	23
	20-29 years	131	53
	Above 30 years	59	24
Parity of mothers	1	83	33.4

	2-4	125	50.4
	≥5	40	16.1
Gestation period (weeks)	38 weeks	171	69
	> 38 weeks	77	31
Chronic diseases i.e., Hypertension		2	1
HIV status of mothers (Negative)		242	98
HIV status of mothers (Positive)		6	2
HIV positive mothers on ART (N=6)		2	33
HIV positive mothers not on ART (N=6)		4	67
Duration of Labor	Within 24 hours	225	91
	After 24 hours	23	9
Mode of Delivery	Spontaneous Vertex delivery	196	79
	Caesarean section	52	21
Indications for Caesarean Section (N=52)	Severe pre-eclampsia	2	4
	Two previous scars	18	35
	Cord prolapse	2	4
	Prolonged labor	10	19
	Obstructed labor	17	33
	Malpresentation	2	4
	Other reasons	1	2

The results show that most of the women were aged between 20 – 29 years, (53%). Half of the women were para 2-4. (50%). Most of the women (69%) delivered at

38 weeks. Majority (98%) were HIV negative. Among the women who were HIV positive, only two (2) out of 6 were on antiretroviral therapy. Regarding the duration of labour, majority of the women delivered on the same day of admission in labour with (91%), more than three quarters having spontaneous vertex delivery (79%). Of the 52 women who underwent caesarean section, the major indications were two previous scars, (35%) and obstructed labour (33%).

Criteria used to Assess Quality of Postnatal Care at the Study Site

In this study, the first objective was set to determine the quality of postnatal care using World Health Organization criteria and standards applicable to the general hospital. Table 2 presents the standards and criteria used to assess the quality of postnatal care according to the World Health Organization standards.

Table 2: *Criteria and Standards to Assess the Quality of Postnatal Care within 24 Hours*

	Selected Assessment Criteria of the Mother	Standard (%)
1	Assessment of the mother within the first hour before transfer from the labor ward to the postnatal ward.	100
2	Assessment of the mothers' wellbeing within 6 hours of admission to postnatal ward	100

3	Assessment of the signs and symptoms suggestive of potentially life-threatening physical conditions to the woman within 24 hours of the postnatal period	100
4	Assessment of information shared on discharge with the mother about self-care and the baby in the Postnatal period	100
Assessment Criteria of the Newborn Baby		
1	Assessment of immediate care of newborn after delivery in the labor ward	100
2	Assessment of the newborn within the first hour before transfer from the labor ward to the postnatal ward.	100
3	Assessment of the newborns' wellbeing within 6 hours of admission to postnatal ward	100
4	Assessment of the signs and symptoms suggestive of potentially life-threatening physical conditions to the newborn baby within 24 hours of the postnatal period	100
5	Assessment of baby care within 24 hours in the postnatal period	100

Comparison of the Quality of Postnatal care at the Health Facility with WHO Standard

The second objective was set to compare the current postnatal care practices at the general hospital with the agreed-on World Health Organization criteria and standards.

The data collected captured parameters regarding care of the mother from the first hour

after delivery up to discharge and the same for the newborn baby, including information about the life - threatening symptoms affecting the mother and information shared during discharge from hospital.

Table 3: Assessment of Mother Within the First Hour after Birth and Within 6 Hours of Admission to the Postnatal Ward

No.	Assessment made	Standard WHO 100%	Frequency	Percentage	Performance gap
			(N=248)	(%)	(%)
1	Fundal height	100	244	98	2
2	Uterine contraction	100	217	88	12
3	Vaginal bleeding	100	227	92	8
4	Temperature	100	231	93	7
5	Pulse	100	222	90	10
6	Blood pressure	100	241	97	3
7	Micturition (passed urine within an hour after delivery)	100	242	98	2
8	After birth pains	100	95	38	62
9	Incision site for cesarean mothers		52	21	79

Assessment of Mothers Within 6 Hours of Admission to the Postnatal Ward					
1	Assessment for after birth pains	100	17	7	93
2	Assessment of incision site	100			
	1. Soiling of the dressings	100	29	12	88
3	Administration of drugs	100			
	1. Antibiotics	100	60	24	76
	2. Analgesics	100	53	21	79
	3. Hematenics	100	47	19	81
4	Blood pressure	100	189	76	24
5	Pulse	100	195	78	22
6	Passing of urine	100	64	26	74
7	Pads checked for the amount of per vagina bleeding	100	71	29	71

Table 3, shows all the parameters that were assessed and recorded within the first hour after birth. The results indicated that the majority of the performance of the parameters were almost the standard and this includes fundal height, vaginal bleeding, temperature, blood pressure and micturition. Meanwhile, the parameters such as after birth pain, incision site for cesarean mothers, uterine contraction and pulse had performed far below the WHO standard. However, incision site for cesarean mothers was performed the least (21%).

The assessment done within six hours indicated that the majority of the parameters had performance far below 100% of set criteria while fair performance was observed in the parameters of pulse and blood pressure (78% and 76%) respectively.

Assessment of Mothers for Potentially Life-Threatening physical conditions

Table 4 presents the parameters that were assessed to determine the life-threatening conditions of the mother.

Table 4: Record of Potentially Life-Threatening Physical Conditions to Mothers

No.	Signs and Symptoms	WHO standard 100%	Frequency (N=248)	Percentage (%)	Performance gap
1	Lochia with offensive smell per vagina	100	3	1	99
2	Pallor of the mucus membranes (palms, and soles)	100	0	0	100
3	Severe headache	100	0	0	100
4	Distended abdomen	100	3	1	99
5	Failure to pass urine	100	0	0	100

Assessment of the different parameters of the life-threatening physical conditions of the mother did not meet the set standards.

Information Shared with Mothers about Self/-care and the Baby in the Postnatal Period

The information shared with mothers during discharge was counseling about family planning, mental health, nutrition, danger signs, rest and sleep and personal hygiene.

Table 5: Information Shared with the Mothers upon Discharge

No.	Information shared	WHO standard 100%	Frequency (N=248)	Percentage (%)	Performance gap
1	Counseling about family planning	100	10	4	96
2	Mental health	100	0	0	100

3	Nutrition	100	231	93	7
4	Danger signs to the mother	100	177	71	29
5	Rest and sleep	100	214	86	14
6	Personal hygiene	100	228	92	8

The results in table 5 indicated that information on nutrition and personal hygiene was shared with the mothers upon discharge as per the WHO standard while mental health and counseling about family did not meet the standard.

Care of the Newborn against the WHO Standard

In the same study objective, the care of the newborn was assessed from the first hour after birth, through six hours till discharge of the mother and baby.

Table 6: Immediate Care of the Newborn

No.	Immediate care of the Newborn within one hour	WHO standard	Frequency	Percentage	Performance gap
		100%	(N=248)	(%)	(%)
1	APGAR Score				
	1. At 1 min	100	243	98	2
	2. At 5mins	100	243	98	2
2	Resuscitation for those whose APGAR score was less than 4	100			
	1. Suction done	100	231	93	7
	2. Stimulation of the baby	100	0	0	100

	3. Use of ambu bag and mask	100	0	0	100
	4. Resuscitation drugs administered e.g., adrenaline, dextrose 10%, ampicillin and gentamycin)	100	0	0	100
3	Breastfeeding initiated within the first hour	100	233	94	6
4	Tetracycline eye ointment administered	100	240	97	3
5	Vitamin K administered	100	240	97	3
(N=6)			Frequency	Percentage	
6	If mother is HIV positive, baby given Nevirapine syrup	100	5	83	17

The assessment of the immediate care offered to baby indicated that the majority of the parameters almost met the criteria while assessment was not done on stimulation, use of ambu and mask bag and resuscitation using drugs.

Assessment of Newborn Babies while in the Postnatal Ward

The newborn babies are assessed for their general wellbeing from the time the mother is transferred to postnatal ward until discharge.

Table 7: Assessment of babies in the postnatal ward

No.	Assessment of babies in the postnatal ward	WHO standard	Frequency	Percentage	Performance Gap
		100%	(N=248)	(%)	
1	Weight of the baby	100	240	97	3
2	Head circumference	100	3	1	99
3	Temperature	100	47	19	81
4	Congenital anomaly	100	236	95	5

5	Bladder and bowel function (passed urine and meconium)	100	15	6	94
6	Color of the skin	100	198	80	20
7	Color of the eyes (Jaundice in the eyes)	100	35	14	86
8	Respiration rate	100	243	98	2
No.	Assessment of babies after six hours				
1	Temperature	100	20	8	92
2	Checked cord	100	30	12	88
3	Bowel and bladder function	100	5	2	98
4	Color of the skin	100	21	8	92
5	Breastfeeding done	100	33	13	87

Assessment of babies in the postnatal ward indicated that respiration rate and weighing of the baby almost met the standard while head circumference was least performed after one hour of birth. All the parameters assessed on the babies after six hours were far below the required standard

Assessment of Potentially Life-Threatening Physical Conditions to Babies within 24 Hours of Life.

Babies are at risk of developing symptoms that can endanger their lives within 24 hours of the postnatal period.

Table 8: Record of Potentially Life-Threatening Physical Conditions to Babies Within 24 Hours of Life

No.	Signs and symptoms	WHO standard 100%	Frequency (N=248)	Percentage (%)	Performance gap (%)
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1	Failure to breast feed	100	0	0	100
2	Jaundice	100	0	0	100
3	Bleeding from the cord	100	5	2	98
4	Excessive crying	100	2	1	99
5	Excessive coldness of the baby's body	100	3	1	99

Table 8 indicates that the areas of assessment were minimally done or not done at all regarding potentially life-threatening conditions to the babies within 24 hours of life.

Information shared with the Mothers about Baby Care upon Discharge

In preparation of the mothers for discharge, relevant information is shared about baby care during the postnatal period.

Table 9: Information Shared with the Mothers about Baby Care upon Discharge

No.	Baby care in the postnatal period	WHO standard 100%	Frequency (N=248)	Percentage (%)	Performance gap (%)
1	Delayed bath up to 24 hours	100	68	27	73
2	Maintain warmth of the baby	100	134	54	46
3	Exclusive breastfeeding	100	202	81	19
4	Cord care	100	225	91	9

5	Recognition of danger signs to the baby	100	129	52	48
6	Continuity of prescribed treatment	100	47	19	81
7	Immunization status	100	142	57	43
8	Review dates	100	241	97	3

In Table 9, the areas emphasized regarding information shared with mothers about newborn care by the midwives on discharge were, review dates, cord care and exclusive breastfeeding almost met the set standards while information on delayed bath up to 24 hours and continuity of prescribed treatment were least shared with gaps of 73% and 81% respectively.

Factors Associated with Quality of Care at the General Hospital

The study determined the health facility factors associated with the quality of postnatal care of the mother and baby in the general hospital.

Using key informant interviews with the medical personnel who work in the maternity department (postnatal ward), the quality of postnatal care to mothers and babies within the first 24 hours after birth at the general hospital was established and was presented thematically under the following: availability of standard guidelines, interventions in place to provide quality of postnatal care, the feedback mechanisms in place to improve

the quality of postnatal care and how to rate the quality of postnatal care offered to mothers and babies within 24 hours after delivery.

Availability of standard guidelines

Standard guidelines refer to recommendations to users when specific standards don't apply and are designed to streamline processes according to what the best practices are. (collinsdictionary.com 2017). According to the findings obtained from the in-depth interview, the availability of standard guidelines could guide the staff in performing postnatal care services as scheduled. The theme was explained by some respondents in narratives stated as;

'Postnatal guidelines do not exist, we use the knowledge obtained from school to monitor the mother and baby' (KI midwife 1)

Another midwife also echoed;

'I use the knowledge acquired from school to provide care for the mother and baby' (KI midwife 2)

'No particular guidelines used but we rely on guidelines on a broader aspect'
(Head of department)

The Principal Nursing Officer mentioned; *'A book with the standard of care is with the In-charge'*

Interventions in place to improve the quality of postnatal care

The themes that emerged from this statement included; motivation of the staff, infrastructure (creation of postnatal ward and neonatal unit), and additional funding from Non – Governmental organization.

Motivation. Is a noun to mean a reason or reasons for acting in a particular way. Similar to inspiration, incentive, motivating force (Oxford dictionary). Considering the understaffed maternity and postnatal ward, staff motivation was introduced.

'Awarding the best staff on quarterly basis using the Result – based financing fund whereby 40 professional staff and 60 administrative staff benefit from 40% over their monthly salary, recruiting volunteers using the same fund and giving each staff 1 Kg of sugar weekly' (Principal Nursing officer).

Infrastructure. Is a noun to mean a physical or organizational structure (Oxford dictionary). Another intervention put in place to improve the quality of postnatal care in the health facility was to create a postnatal ward separate from the labour ward. It also included the creation of the Neonatal unit to provide prompt care to newborns who develop life threatening signs. The Principal Nursing Officer said;

'Creation of the postnatal ward has greatly improved the care provided to mothers and their babies after delivery. The recruitment of the volunteer midwives has facilitated the retaining of mothers and babies for the recommended 24 hours and 72 hours following normal delivery and caesarean section respectively'. She also explained about the neonatal unit saying; 'This ward has just been created. Previously, all care was done in the labour suite or recovery room in theatre but now newborn babies are well cared for in the neonatal care unit, all aimed at providing quality services.

'Furthermore, the hospital board started implementing two shifts with at least 2 staff per shift instead of 1 staff per shift, because it's not feasible to have regular

postnatal rounds for one doctor for both labor ward and postnatal ward as it has been the case'. (Principal Nursing officer).

Non – Governmental Organization funding

'To bridge the gap of limited resources, the hospital management partnered with one of the German organizations which provides support in supplies especially in the obstetric department' (Principal Nursing Officer).

Feedback Mechanisms to Improve Quality of Postnatal care

The feedback mechanisms put in place by the hospital to improve the quality of postnatal care emerged in the following themes; Client – staff interactions, availing phone contacts, and departmental meetings.

Client – Staff interaction. Is a communication between a staff and client www.indeed.com (2020). This includes when clients call the staff and need help. The interaction allows sharing of information between the clients and the midwives, doctors and the administrators regarding any concerns during their period of stay in the postnatal ward.

'The postnatal ward has previously organized a client-staff interaction, where mothers shared their views. In case a midwife had issues with a client, these two parties were called by the administrators to table their grievances' (Principal Nursing Officer).

Availing phone contacts.

'The hospital has introduced mechanisms where patients are given the contacts on notice boards of the Administrators so that they can call them in case of any concerns, it's still a question how effective they will be as most of the population is illiterate' (Head of Department).

Departmental meetings.

The type of team meetings to go over goals, updates and obstacles in order to strategize next steps (Dagher, 2021). The Head of department had this to say;

'We usually receive feedback from the staff through our departmental meetings which are held every Monday. We also have maternal audits meetings every Wednesday. These are good strategies in informing the team how well they are performing and which areas they need to improve'.

Measure of the Quality of Postnatal care

The key informants acknowledged that there was some level of quality in the service delivery in general and these are some of the themes derived from their submissions; Postnatal care guidelines, Client – staff interaction, reduced maternal mortality, improved postnatal care, whereas, staffing levels and stock outs of drugs and supplies affected the quality of postnatal care.

Postnatal care guidelines.

The ward In- charge insisted that there were some guidelines used in guiding the provision of postnatal care from the time the postnatal ward was created. She said;

'There is a Health Management Information Systems record book (HMIS 006) which has comprehensive guidelines in the care of the women from antenatal, through labour and postnatal periods. At least it has the basic procedures of care'.

She also said; *'I was one of the focal persons involved in the development of preliminary guidelines for postnatal care in the hospital, whereby I formulated some guidelines. 'The fact that postnatal ward is now independent from the other wards, it helps us offer specific care'.* (Ward In- charge). Another expression was

made by a midwife; *‘Before, postnatal care was not good because you would find the same midwife in labour suite and postnatal ward and she would just provide the basic care but not comprehensive service delivery. But now, it is better since the wards were separated, although we need more midwives’*. (KI Midwife 1).

Client – Staff interaction

The team emphasized that the client – staff interaction was a good tool in improving their level of service delivery through meetings, interacting face to face and through phone calls. This included easy access to the hospital catchment areas through the community health workers.

Reduced Maternal Mortality.

The death of women due to complications from pregnancy and childbirth (UNICEF, 2017). The Head of Department explained that it was a general hospital policy that in maternal health, normal deliveries are observed for 24 hours and three days for caesarean section mothers before they are discharged. This has contributed to quality postnatal care and reduction in maternal morbidity and mortality. He further stated;

‘The department of obstetrics has realized a reduction in the cases of maternal mortality since the last financial year where seven mothers died, and this year so far no loss. ‘There are now few cases of post-delivery morbidities especially sepsis’.

On the other hand, the respondents noted with concern that some challenges affected the provision of quality service delivery in general. This they attributed to the following challenges.

Staffing levels

The Principal Nursing Officer lamented the continued lack of adequate staffing even when recruitment processes take place. She said;

'The staff are not enough. We have 25 enrolled midwives in postnatal, antenatal, and labour ward, while the neonatal unit has 3. 'There is no local recruitment allowed within the hospital yet the workload is too much for staff. Even with the few volunteers, it is still overwhelming. Some support has been extended through the District Health Officer's office by partnering with some organizations to provide technical services. She also mentioned; 'There are only two doctors on the ground. Some have retired or gone for further studies and not yet replaced'.

Stock – outs of drugs and supplies

Drugs and medical supplies are always distributed to public health facilities on quarterly basis by the National Medical stores. One of the major challenges affecting quality service delivery as echoed by the respondents was stock outs. The Principal Nursing officer narrated;

'Stock – outs are common. Patients have been buying most of the supplies in the last quarter except for some mama kits that were provided. She also said; 'All supplies requested may not be brought by the government and not provided timely'.

A midwife narrated the lack of equipment as well as stock outs of drugs and supplies. Another respondent said:

'The lack of equipment for better management of babies hinders the quality of postnatal baby care. For example, before discharge, it is vital to measure the heartbeat of the baby, but this is not possible as the equipment such

as, Stethoscopes are not available”. (KI Midwife 2).

In addition, *‘Before we discharge mothers, we make sure that we educate them about how to take care of themselves and the baby, to breastfeed the baby well, to clean their cords well and to also come back after 6 days for postnatal care.* (KI Midwife 3).

One other observation made was the high percentage of teenage pregnancies and young mothers’ deliveries registered from the hospital. This was attributed to the culture which prevents girls from continuing with their studies especially in the Alur community, which is neighbouring the hospital in which the research study was conducted. The respondents revealed that, insufficient knowledge and cultural factors about postnatal care services especially, the uptake of modern family planning limited the provision of quality postnatal care provided to women in which the midwife expressed;

‘In this region, women do not want to be told about family planning and spacing. They usually say that God is the one who will stop them from giving birth when the time comes” (KI Midwife 1)

Even if the medical personnel acknowledged that there have been improvements in the postnatal care given to mothers and their babies in the first 24 hours after birth, they still voiced suggestions that would further improve postnatal care. These included

To the hospital management

The hospital management should orient the midwives on standard operating procedures using the existing guidelines for both mothers and baby care in the postnatal period.

Chapter five presents a discussion of these results, conclusions drawn and recommendations on the findings from the study

Chapter Five: Discussion

This chapter presents the interpretation of the key study findings through discussion, conclusion and recommendations of the study in relation to the use of Criterion-based Audit as a strategy to improve the quality of postnatal care of the mother and baby within 24 hours after birth at a general hospital. The discussion was organized according to the study objectives: the criteria for assessing the quality of postnatal care, comparison of the quality of postnatal care at the general hospital with WHO standards, and determining the health facility factors associated with the quality of postnatal care of mothers and babies at the general hospital.

Criteria used to Assess Quality of Postnatal Care at the General Hospital

World Health Organization, (2016) in their recommendations, set the guidelines for use in postnatal care for both low and middle-income countries. According to the World Health Organization, (2020) guidelines, the aspects of quality in offering postnatal care involves the utilization of the clinical guidelines aimed at improving postnatal care and health outcomes to mothers and babies within 24 hours. In the context of determining the quality of postnatal care within 24 hours, the government of Uganda through the Ministry of Health integrated postnatal care services into the Reproductive Health package for Maternal and Child Health and adopted the (World Health Organization, 2020) recommended guidelines for postnatal care, as strategies to strengthen postnatal services and improve the quality of postnatal service delivery in the country.

In this study, the criteria used to assess the quality of postnatal care was derived from the four standards for the mother and five standards for the newborn baby as per WHO set standards at 100%, (World Health Organization, 2014a).

The current study adopted the Criterion based audit to assess the quality of postnatal care offered to mothers and new born in line with set standards and checking the adherence to the guidelines in the general hospital. The study area is not an exception to the implementation of the World Health Organization criteria and standards in providing quality postnatal care to mothers and babies within 24 hours.

Comparison of the Quality of Postnatal Care at the general hospital with the WHO Standard

(World Health Organization, 2016) recommendations indicate that the quality of postnatal care plays an important role in preventing maternal and fetal morbidity and mortality. This includes utilization of set guidelines to improve quality of postnatal care within 24 hours.

The average performance of care offered to the mother within the first hour after birth was 73%. The appropriately performed parameters were fundal height, micturition, blood pressure, temperature, vaginal bleeding and pulse. However, the average performance gap of the care offered within one hour to the mother was at 21% with a performance gap of 62% for after birth pains and 79% for the incision site. These findings are far below the WHO performance recommendations of maternal and new born care.

Similar studies by (Dey et al., 2021; Kanyunyuzi et al., 2017), indicated that majority of first postnatal checks occurred between one and four hours after birth. The practice of postnatal care in our study is attributed to the availability of mother child health passport by ministry of health which has parameters of assessment of mother and newborn. Postnatal care also exists within the Uganda clinical care guidelines which were adopted from the WHO recommendations. In addition, Criterion – based Audit has been

adopted in Uganda as a quality improvement process for patient care (Kayiga et al., 2016) which in this context of the study fosters the ability of the health workers to provide adequate care while basing on the agreed upon set standards that meet the local demands of the population (Weeks et al., 2010). Other studies also found challenges in meeting the WHO standards in postnatal care where the standards were infrequently met resulting into complications like postpartum haemorrhage and subsequently maternal mortality (Dey et al., 2021; Ilesanmi & Akinmeye, 2018; Muwema et al., 2022; Pindani et al., 2020; World Health Organization, 2016)

Similarly, a study conducted in Nigeria revealed that only 47.9% of the recommended routine postnatal care was offered on the postnatal wards (Ilesanmi & Akinmeye, 2018). The high average performance gap obtained in this study may be associated with understaffing which could have hindered health care provider's ability to offer appropriate care to mothers within first hour of birth. This can in turn lead to interference with attachment and initiation of successful breastfeeding within one hour of birth.

The average performance gap of care offered to the mothers within six hours of care in this study at the postnatal ward was 87% of the set WHO standards (World Health Organization, 2016). Meanwhile, after birth pain, incision site for cesarean mothers, soiling of dressing, passing of urine and pads checked for the amount of per vagina bleeding were the worst performed parameters. Similarly, a study conducted to evaluate the quality of postnatal care in Nigeria by (Ilesanmi & Akinmeye, 2018), in Ibadan hospital revealed that the midwives were not assessing the mothers for the following parameters during postnatal care; excessive bleeding, passing of urine, complaints like

headache, fatigue, back ache and perineal hygiene. The performance gaps by midwives in providing early postnatal care could be attributed to work over load and burnt out health care workers struggling to keep with the increasing care demands from the mothers (Dey et al., 2021). In addition, much as WHO postnatal care guidelines exists, there is limited literature in providing guidance to implementation of care to health workers thus, affecting the quality of expected postnatal care (Dey et al., 2021). One midwife in this study said, “in postnatal, we don’t record other things most of the time except for the mother’s blood pressure, which we write on the observation chart, until we observe again after 24 hours when we are discharging them”. The similarity of this study finding to the study in Nigeria could be due to lack of adequate staffing which hindered health worker’s ability to examine every mother in the postnatal ward. The findings from this study revealed that care for mother and baby decreased as time increased. This is similar to a study done by (Dey et al., 2021) where the first checks occurred mainly between 1-4 hours either to decongest the health facility to receive more women or to reduce costs for hospital which is contrary to this study, where mothers stay for 24 hours till discharge as a hospital policy.

The average performance gap in the assessment of Mothers for Potentially Life-threatening Physical Conditions was 99.6%. The findings are very much in agreement with a research study by (Ndugga, Namiyonga & Sebuwufu, 2020; Ononge, Mirembe, Wandabwa, & Campbell, 2016) which revealed that the standards of postnatal care are infrequently met and the practice of care in the immediate postnatal is still low. This study is also consistent with the findings from a study carried out by (Muwema et al., 2022) which found that few mothers received appropriate care during postnatal care

within 24 hours hence increasing the likelihood of postpartum complications.

According to the current study, four in every ten mothers had received information about self-care and the baby in the postnatal period. However, no information was shared to mothers regarding mental health and counselling about family planning. Similarly, a study by (Chimtembo et al., 2013) in Malawi also noted that partial information was given during counseling and education about danger signs and postnatal exercises. The findings from this study agrees with a study carried out in Zambia by (Pindani et al., 2020) which revealed that 91.3% of the midwives never assessed the psychological state of the mothers. One of the common complications after birth is postpartum depression which can be prevented through counselling about mental well-being.

A study carried out by (Muleya et al., 2018) in Zambia noted poor information flow between health care providers and mothers as regards new born care. This is consistent with this current study which reported lack of information shared on discharge such as counselling on family planning and education on danger signs between the midwives and the mothers. With this trend, the mothers are not aware of what is expected of them as regards new born care leading to adoption of unhygienic practices which may expose the baby and the mother to health risks like hypothermia, difficulty in breathing, bleeding from the cord, and sepsis and unwanted pregnancy respectively.

The findings from the file records revealed that a high percentage of babies (93% - 98%) were given the immediate care within the first hour of life. The highest parameters of newborn care were Apgar score at 1 minute and five minutes, administration of tetracycline eye ointment and vitamin K respectively, initiation of breastfeeding within

the first hour, and suction. This study results showed that stimulation of the baby, use of ambu bag and mask as well as use of resuscitation drugs were not done as per the criteria. This is comparable with the study conducted by (De Graft-Johnson et al., 2017) to assess the quality of newborn care immediately after birth and findings revealed that stimulation or ventilation including resuscitation was not performed by the service providers. Given that these were key routine practices in the care of the newborn, failure to conduct these parameters increases the risk of neonatal mortality.

Findings from this study also showed that of the six HIV positive mothers, 5 (83%) of the babies were given Nevirapine syrup. The findings are in line with the (Langlois et al., 2015) guidelines which spell out that newborn care starts right from the time of birth up to discharge. This indicates that HIV exposed infants are more likely to be prevented from acquiring HIV through mother-to-child transmission.

The study result showed that the average performance gap regarding assessment of newborn babies while in the Postnatal Ward was 49% and the least performed parameters included head circumference, temperature, bladder and bowel function and color of the eyes for jaundice. This study finding contradicts with the (Langlois et al., 2015) which clearly states that within the period of six hours, all babies should be examined after birth. Assessment of these parameters helps the midwives to exclude overweight or underweight babies, any congenital abnormalities like hydrocephalus, imperforated anus, hypothermia, blocked urethra leading to retention, asphyxia or pallor due to bleeding from the code, yellow skin, hemolysis, hyperpnoea, aphonic attacks and failure to breastfeed.

Findings from this study also noted a gap of 93% in assessment of the new born care after six hours in the postnatal ward for parameters of head circumference, skin colour and bladder and bowel function, temperature and breastfeeding. This is consistent with a study done by (Muleya et al., 2018) to assess postnatal care within six hours following delivery in Zambia where majority of new born babies were not being physically examined after six hours of delivery. This is important because it helps the midwife to rule out pallor from excessive cord bleeding, hypothermia, bowel blockage or retention, and failure to breast feed.

The assessment of potentially life-threatening physical conditions to babies within 24 hours of life reflected the least reported parameters in newborn care with a performance gap of 99%. (World Health Organization, 2022), recommends that newborn assessment for danger signs such as not feeding well, convulsions, fast breathing, severe chest indrawing, no spontaneous movement, fever > 37.5 or low body temperature < 35.5 and jaundice in the first 24 hours after birth should be carried out. (Ndugga et al., 2020; World Health Organization, 2022) recommend that health workers promptly examine all mothers and their babies early in order to identify and treat complications timely hence promoting maternal and newborn health.

(World Health Organization, 2022) recommendations indicate preventive measures like timing of the first bath up to 24 hours to prevent hypothermia and staying in hospital for 24 hours before discharge after vaginal birth are very critical. Consequently, failure to recognize and assess the danger signs may result to ill health, disability or mortality of the new born baby.

The areas emphasized regarding information shared with mothers about newborn care by the midwives on discharge were: review dates, cord care, and exclusive breast feeding. Other parameters of information sharing were handled on average such as, immunization status of babies, maintenance of warmth, and recognition of danger signs to the baby. Delayed bath and continuity of treatment were least shared with gaps of 73% and 81% respectively. This implies that babies are at risk of developing hypothermia if bathed before 24 hours and at high risk of infection and neonatal death. (World Health Organization, 2022) criteria for assessment clearly states that, prior to discharge of the mother and baby, the physical, emotional wellbeing of the mother, her skills and confidence to care for self and the baby are important. The quality of care expected in postnatal units should be to the extent that health care services are provided to mothers and babies to improve the desired health outcomes such as reduction of maternal and neonatal morbidity and mortality (World Health Organization, 2016).

Factors associated with quality of postnatal care at the general hospital

Policies and guidelines

Following an in-depth interview, the availability of standard guidelines could guide the staff in performing postnatal care services as scheduled. Unfortunately, the midwives expressed the absence of postnatal guidelines at the general hospital but rather that they used the knowledge obtained from school. The views from the ward in charge differed from her staff where she insisted that postnatal care guidelines existed in the form of HMIS (006), and some of the preliminary guidelines she participated in developing regarding postnatal care when the postnatal ward was created. This means that much as the midwives filled in the HMIS 006 register, it seemed they did not

understand that these were guidelines. The views from the midwives are contrary to the (World Health Organization, 2014) recommendation, where the aspects of quality in offering postnatal care involves the utilization of the clinical guidelines to improve the quality of postnatal care and health outcomes to mothers and babies within 24 hours.

As measures to ascertain the levels of quality of postnatal care, findings indicated that positive client -staff interaction, reduced maternal mortality rates were significant. This is attributed to the existing hospital policy that allows mothers and their babies to stay in the general hospital for observation for a period of 24 hours after normal delivery. The fact that the highest risk for death is in the immediate postnatal period, the duration of hospital stay facilitates the assessment by the health workers for identification and treatment of complications to promote maternal and newborn health (Ndugga et al., 2020). Furthermore, the client-staff interaction offers an opportunity for mothers to discuss with the healthcare providers health interventions such as breastfeeding, proper nutrition and family planning that are crucial for maternal and neonatal care (Ndugga et al., 2020). (Dey et al., 2021) also noted that postnatal care remained poor since there was little information about guidelines for quality postnatal care after delivery.

Staffing

According to the interview conducted with the midwives, lack of adequate documentation was attributed to understaffing, (25 enrolled midwives instead of the required 46), where they stated that 10 to 20 mothers delivered babies per day, and yet the allocation had 1 or 2 midwives on duty in a day, who have to attend to mothers in both the theater and postnatal ward, thus making documentation a secondary priority. The respondents noted with concern the continued lack of adequate staffing despite the

repeated recruitment processes. The research findings presented agree with (Ilesanmi & Akinmeye, 2018), whose study findings revealed that there were insufficient midwives which affected the care offered to the mothers and babies within 24 hours after birth. An average of the midwife to mother ratio of 1: 8 affected service delivery and outputs expected of the midwives.

Regarding the interventions put in place for quality of care, the general hospital introduced result-based financing over the monthly salary, recruitment of volunteers as well as giving each staff one kilogram of sugar weekly. There is more to staff motivation as stated by (Thi Hoai Thu, Wilson, & McDonald, 2015) who noted that motivation of health workers was influenced by the working conditions including, infrastructure, availability of resources, institutional support, supervision, in-service mentorship, training, career growth and professional promotion. These are similar to the suggestions made by the midwives to improve the quality of postnatal care at the general hospital. The hospital administration further availed telephone contacts of the core administrators to enable easy reach by clients in case of any concerns while in the ward which is similar to a study by (Olajubu, Fajemilehin, Olajubu, & Afolabi, 2020) who stated that availability of phones was a measure of facilitating communication between the health workers and the clients/patients. The presence of the telephone numbers of the administrators on the notice boards hastened the sharing of information thus addressing promptly critical needs and concerns of the clients while on the postnatal ward. The respondents acknowledged that department meetings happened every Monday while the maternal audits occurred on Wednesdays. These meetings were appreciated by the

respondents as good strategies in informing the team how well they were performing and identified the areas for improvement in postnatal care.

Infrastructure

Another intervention put in place to improve the quality of postnatal care in the general hospital was creation of a postnatal and the neonatal unit to provide prompt care to newborns who developed life threatening conditions. Furthermore, two shifts with at least 2 staff per shift instead of 1 staff per shift was implemented. (Dey et al., 2021), in their study to assess immediate care following birth in Uganda health facilities found that low coverage of immediate postnatal care could be a sign of an overburdened and burnt –out healthcare of workers struggling to provide care amidst the increasing demand of service delivery. On the other hand, the respondents noted with concern that some challenges affected the provision of quality service delivery in the general hospital

Stockouts

Another major challenge affecting quality service delivery was stock outs where patients have been buying most of the supplies. This is similar to a study by Sacks, (Sacks et al., 2017) where they found out among other challenges, that there was lack of medical supplies in providing quality postnatal care. This finding is also in agreement with a study by (Muwema et al., 2022) that found out that availability of supplies, equipment and drugs aid provision of quality health care to mothers and new born.

Limitations of the study

The study extracted mother/baby data from the patient files/records filled by the midwives to document the postnatal care provided. The data collected however, does not

provide reasons why a particular assessment was not done on either the mother or baby, and this leaves room for speculation and questioning of the completeness of data.

A part from the data extraction and interview guide, conducting an exit interview with the mothers could have provided more information on client's perspective on quality of care. Therefore, this findings from this study cannot be generalised to other general hospitals.

Conclusion

Much as postnatal care remains an integral component of maternal service delivery, the study findings revealed that the midwives lacked sufficient knowledge on the guidelines much as they are incorporated in the HMIS-006.

Care was offered to the mothers and the babies in the first hour for example fundal height, micturition, blood pressure, pulse and vaginal bleeding for the mother and respiratory rate, weight of the baby and congenital anomaly for the baby. The assessment of the parameters from six hours onwards gradually dropped. On discharge no information was shared regarding on mental health and family planning.

Recommendations

There is need for the midwives to entirely follow the postnatal care guidelines provided by WHO and in the HMIS 006 postnatal form on maternal and newborn care within the first 24 hours after birth. The hospital management should consider continuous and onsite mentorship of medical personnel about fully practicing the already established WHO postnatal care guidelines listed in the HMIS 006 postnatal form. This can be in the form of displaying the guidelines in the postnatal ward. The hospital management should develop capacity building strategies through training of midwives on appropriate

documentation and understanding the importance of care packages for health care workers in providing quality postnatal care.

There is need for the Ministry of Health to recruit sufficient number of midwives at the general hospital to cater for the increased general hospital birth. This will reduce the workload on the overburdened staff.

There is need for the midwives to include health education services about mental health and family planning to improve the health status of the mother and the new born on discharge.

This gives the mother chance to be attended to in totality and individual files completed.

For purposes of research and scholarship, there is need to use these study findings as a model to conduct Criterion-based Audits in the different maternity units like the Antenatal clinic and labour ward as a means to improve on the quality of postnatal care which can also be extended to other spectrum of service delivery.

Implications for Midwifery practice

Nursing Education and practice: This generates the need to introduce Criterion – based Audits into the different nursing and midwifery curricula to enhance the ability of the students to practice audit taking.

Nursing administration: The nursing leadership can use the knowledge of Criterion – based Audit to improve supervision as a basis of key performance indicators. It also provides a core foundation for attention to detail while documenting patient care/interventions.

Nursing research: The title of research attracts further research especially in understanding quality issues as far as standards or criteria are concerned

Strength of the Study

Criterion-based audit as a quality improvement process has been relevant to the study relating to WHO set guidelines and standards. Similar parameters guided assessment of quality of postnatal care. It also fostered the ability of health care providers to deliver fairly adequate care while referring to the agreed upon set standards.

New Learning

When standards are set by WHO and MoH, Uganda adopts them to local use, its not obvious that the guidelines are instantly understood and implemented in a given practice site. The dissemination of information about criteria from policy makers to the implementors is still wanting.

There a knowledge gap by the midwives on the existing guidelines which were reflected on the HMIS-006. Much as the guidelines exist, the midwives did not recognize the importance of the documentation in the provision of quality of postnatal care.

Quality of care in the first hour is still a challenge specifically for caesarean postnatal mothers where the incision site was not assessed and assessment of life-threatening conditions was not done.

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Appendix A: Introduction of Study to Participants

Dear Prospective Participant,

My name is Agwang Agnes, a student currently pursuing a Master Degree of Nursing Science at Uganda Christian University and have to complete a dissertation as part of the requirements for the program. The title of my study is; **A Criterion – based Audit of Postnatal Services given to Mothers and Newborns within 24 hours in the General Hospital in Uganda.** The purpose of this study is to assess the quality of postnatal care services offered to mothers and their babies in the immediate postnatal period (within 24 hours) as a means to improve care and thus reduce maternal and neonatal mortality. My contact telephone number is **0772681766** and my email is **aagwang@gmail.com**

As a participant, you will be required to provide appropriate responses according to the questions asked. It will take approximately 15 – 25 minutes of your time during the interview. Since your participation in this study is completely voluntary, you are free to refuse or withdraw your consent, or to discontinue participating in the study at any point you feel, without having to explain, and you will not suffer any penalty or loss.

There will be no direct benefits or compensation to you for taking part in the study. However, the researcher hopes the findings will help benefit the mothers during postnatal care in the subsequent period following recommendations made, the management to implement them and the policy makers to enforce policy regarding provision of quality postnatal care to mothers and babies. The researcher guarantees anonymity to ensure that no information obtained from you as a participant will leak, by using codes instead of names, and to keep the filled in tools locked in a safe place. You will not receive any form of payment or incentives for taking part in the study. Please

note that the information you provide may be used in the research report. In case of any inquiries regarding this study during or after participating in this study, please address them to me on tel. number **0772 681766** or my Research supervisor; Mrs. Elizabeth Namukombe Ekong, of Uganda Christian University, on mobile telephone number **0752817166**.

Therefore, I request you to sign to the consent form, after thoroughly reading it, to confirm that your participation in this study is truly voluntary.

Thank you very much for your cooperation, I really do appreciate.

Appendix B: Participant Consent Form

Dear Participant,

My name is Agwang Agnes, a student currently pursuing a Master Degree of Nursing Science at Uganda Christian University and have to complete a dissertation as part of the requirements for the program. The title of my study is; **A Criterion – based Audit of Postnatal Services given to Mothers and Newborns within 24 hours in the General Hospital in Uganda.** The purpose of this study is to assess the quality of postnatal care services offered to mothers and their babies in the immediate postnatal period (within 24 hours) as a means to improve care and thus reduce maternal and neonatal mortality. My contact telephone number is **0772681766** and my email is ***aagwang@gmail.com***

Voluntary participation. You have been purposely chosen to respond to questions related to **A Criterion – based Audit of Postnatal Services given to Mothers and Newborns within 24 hours** after delivery guided by an interview guide.

In this COVID – 19 era, engaging study participants using face to face approach to collect data, may pose a high risk of infection. To ensure the protection of the study participants and the research team, the following protocol will be observed.

1 All persons involved in the study will put on masks covering the nose, mouth and chin properly and consistently as no study participant will be recruited into the study without a mask.

2 Alcohol based sanitizer is used by the research team during training and data collection

3 Social distance of two meters should be observed at all times during training and data collection.

4 Regular temperature checks must be done to all the research team at the study site and points of entry.

5 Hand washing with soap and water should be done regularly.

6 No handshakes or sharing of stationary e.g. pens, books and other items during data collection with the study participants.

7 The research team will conduct daily reviews of risk prevention and management procedures based on the need of risk awareness, identification, documentation and communication.

Consent to participate in the study

I, ----- (participant's initial), confirm that I am aware of the nature, procedure, potential benefits and anticipated inconveniences of participation in the study. I have read (or been explained to), and understand the study as explained in the information sheet.

I have the opportunity to ask questions and am prepared to participate in the study.

I am aware that my participation is completely voluntary and am free to withdraw at any time without being penalized.

I am aware that the findings of this study will be processed into a research report, or publication and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I therefore, agree to participate in the study.

Participant signature/Thumb print ----- Date -----

Signature of Interviewer ----- Date -----

In case of any inquiries regarding this study during or after participating, please contact

any of the following persons. Agwang Agnes: 0772681766/0701687166

Mrs. Elizabeth Namukombe Ekong: Uganda Christian University –Nursing Department.

Tel: 0752817166. Email: ekongelizabeth@yahoo.com

Dr. Karen Drake: Uganda Christian University -Nursing Department. Tel: 0782547629

or email: drakar@bethel.edu

Appendix C: Data Extraction Tool for Postnatal Care for the Mother and Newborn within 24 Hours after Birth

Section A: Biodata of the mother

Instructions

Please look up for the following information from the mother's file and fill it as required.

1.1 Mother's Initials -----

1.2 In patient number -----

1.3 Mother Age -----

1.4 Parity -----

1.5 Date of Admission in labour----- (dd/mm/yyyy)

1.6 Date of delivery -----(dd/mm/yyyy)

1.7 Time of delivery -----(24- hour format)

1.8 Mode of delivery

1 Spontaneous Vertex delivery

2 Caesarean section

1.9 If caesarean section done, what was the indication? (tick what's appropriate)

1. Severe pre-eclampsia

2. Two previous scars

3. Cord prolapse

4. Prolonged labour

5. Obstructed labour

6. Malpresentation

7. Antepartum Hemorrhage

8. Other (specify)

2.0 Gestation period at birth (37weeks to 42 weeks) -----

2.1 Any chronic diseases recorded

1. Hypertension

2. Diabetes mellitus

3. Asthma

4. Sickle cell Disease

5. Others (specify) -----

2.2 Date of admission to postnatal ward after delivery -----(dd/mm/yyyy)

2.3 Time of admission to postnatal ward after delivery -----(24-hour
format)

2.4 Mother's HIV status code documented (*The actual HIV code that was
written for the woman*)

1. Tested and negative, TR

2. Tested and positive TRR

3. Tested positive and on treatment TRR/ART

4. Unknown HIV status

Please tick the recorded information regarding the following assessments from the mother's file

	Immediate care of the Mother (within one hour)			
	Was the mother assessed within the first hour before transfer from labor ward to postnatal ward for the following?	Yes	No	Exceptional N/A
3.1	Fundal height			
3.2	Uterine contraction			
3.3	Vaginal bleeding			
3.4	Temperature			
3.5	Pulse			
3.6	Blood pressure			
3.7	Micturition (past urine within an hour after delivery)			
3.8	After birth pains			
3.9	Incision site for cesarean mothers			
	Was the mother assessed for her wellbeing within 6 hours of admission to postnatal and the records completed by a named health care provider?			
4.1	Assessment for after birth pains			
4.2	Assessment of incision site			
	1. Soiling of the dressings			
4.3	Administration of drugs			
	1. Antibiotics			
	2. Analgesics			
	3. Haematenics			
4.4	Blood pressure			
4.5	Pulse			
4.6	Passing of urine			
4.7	Pads checked for amount of per vagina bleeding			
	Was the following information recorded about the signs and symptoms suggestive of potentially life-threatening physical conditions to the woman within 24 hours of the postnatal period?			
5.1	Lochia with offensive smell per vagina			
5.2	Pallor of the mucus membranes (palms, and soles)			
5.3	Severe headache			
5.4	Distended abdomen			
5.5	Failure to pass urine			
	On discharge of the mother was the following information shared with the mother about self-care and	Yes	No	Exceptional N/A

	the baby in the Postnatal period?			
6.1	Counseling about family planning			
6.2	Mental health			
6.3	Nutrition			
6.4	Danger signs to the mother			
6.5	Rest and sleep			
6.6	Personal hygiene			
	New Born Care			
	Immediate care of the Newborn (within one hour) after delivery in the labor ward	Yes	No	Exceptional N/A
7.1	Was the APGAR Score done?			
	1. At 1 min?			
	2. At 5mins?			
	3. At 10 mins?			
7.2	2 If the APGAR score was less than 4, was the resuscitation done and recorded?			
	1. Suction done			
	2. Stimulation of the baby			
	3. Use of ambu bag and mask			
	4. Resuscitation drugs administered e.g. adrenaline, dextrose 10%, ampicillin and gentamycin)			
7.3	Breastfeeding initiated within the first hour			
7.4	Tetracycline eye ointment administered			
7.5	Vitamin K administered			
7.6	If mother is HIV positive, baby given Nevirapine syrup			
	Was the baby assessed within the first hour before transfer from labor ward to postnatal ward for the following?			
8.1	Weight of the baby			
8.2	Head circumference			
8.3	Temperature			
8.4	Congenital anomaly			
8.5	Bladder and bowel function (passed urine and meconium)			
8.6	Color of the skin			
8.7	Color of the eyes (Jaundice in the eyes)			
8.8	Respiration rate			
	Was the baby's wellbeing assessed within 6 hours of admission to postnatal and records completed by a named health care provider?			
9.1	Temperature			
9.2	Checked cord			
9.3	Bowel and bladder function			
9.4	Colour of the skin			
9.5	Breast feeding done			

	Was the following information recorded about the signs and symptoms of potentially life-threatening conditions to the baby that required emergency treatment within 24-hours of the postnatal period?			
10.1	Failure to breast feed			
10.2	Jaundice			
10.3	Bleeding from the cord			
10.4	Failure to breast feed			
10.5	Excessive crying			
10.6	Excessive coldness of the baby's body			
	Baby care in the postnatal period			
11.1	Delayed bath up to 24 hours			
11.2	Maintain warmth of the baby			
11.3	Exclusive breastfeeding			
11.4	Cord care			
11.5	Recognition of danger signs to the baby			
11.6	Continuity of prescribed treatment			
11.7	Immunization status			
11.8	Review dates			

Appendix D: Key Informant Interview Guide

Dear Participant,

My name is Agwang Agnes, a student currently pursuing a Master Degree of Nursing Science at Uganda Christian University and have to complete a dissertation as part of the requirements for the program. The title of my study is; **A Criterion – based Audit of Postnatal Services given to Mothers and Newborns within 24 hours in the General Hospital in Uganda.** The purpose of this study is to assess the quality of postnatal care services offered to mothers and their babies in the postnatal period (within 24 hours) as a means to improve care and thus reduce maternal and neonatal mortality.

My contact telephone number is **0772681766** and my email is **aagwang@gmail.com**

Voluntary participation. You have been purposely chosen to respond to questions related to the study guided by an interview guide. During the discussion; Your details or particulars will not be recorded but the conversation will be recorded, however its only for the purpose of the research. You are requested to provide honest responses.

Questions

1. What are the existing standards or guidelines in the provision of postnatal care to women and their babies within 24 hours after birth in the hospital?
2. What interventions have been put in place by the hospital to improve the quality of postnatal care of women and babies within 24 hours after birth?
3. What are some of the feedback mechanisms put in place to improve quality of postnatal care within 24 hours after birth?
4. How would you rate the quality of postnatal care offered to mothers and babies in the hospital?

Appendix E: Clinical Audit Cycle Checklist

No	Clinical Audit Cycle Stages	Done	Not done
1	Stage 1 (Preparation & Planning)		
	Involve stakeholders Who is involved in the delivery of care? Who is the recipient/benefits from the care or services? Who has the authority to support implementation of any identified changes?		
	Determine the audit topic Structure Process Outcome		
	Plan the delivery of fieldwork Aims and objectives of the clinical audit Identify skills and people needed to carry out the audit		
2	Stage 2 (Selecting the Standard/Criteria) Identify evidence-based standard/Identification of standards and criteria Specify audit criteria or measurable statements of what should be happening		
3	Stage 3 (Measuring Performance) Carry out a short pilot of the data collection method		

	<p>Collect accurate, timely, and representative data</p> <p>Analyze data – measure actual performance against standard</p> <p>Draw conclusions</p> <p>Present results to department/division</p>		
4	<p>Stage 4 (Implementing Changes)</p> <p>Share audit report</p> <p>Review areas for improvement and agree on priorities for action</p>		

Appendix F: Map of the Study Area

Appendix G: Kryce and Morgan Table for sample size determination

Table 3.1									
<i>Table for Determining Sample Size of a Known Population</i>									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

Appendix I: Estimated Budget

Activity	Quantity	Unit cost	Total cost
Proposal review			300,000
Initial visit to the study area	1	50,000x2	100,000
Accommodation	1	30,000	30,000
Meals	1	20,000	20,000
Communication; airtime, data		300,000	300,000
Training of Research Assistants	2	20,000x2	40,000
Transport for RA	2	50,000x2x2	200,000
Accommodation for RA	2	30,000x2x20 days	1,200,000
Allowances	2	20,000x2x20 days	800,000
Facilitation for PN staff	2	50,000x2	100,000
Data analysis	1		700,000
Dissertation	1 copy		100,000
Manuscript writing			800,000
Publication			800,000
Contingency 5%			274,500
Total			5,490,000

Appendix J: World Health Organization 2013 Guidelines



April 2015

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Postnatal Care for Mothers and Newborns

Highlights from the World Health Organization 2013 Guidelines

Background

The days and weeks following childbirth—the postnatal period—are a critical phase in the lives of mothers and newborn babies. Most maternal and infant deaths occur in the first month after birth: almost half of postnatal maternal deaths occur within the first 24 hours,¹ and 66% occur during the first week.² In 2013, 2.8 million newborns died in their first month of life—1 million of these newborns died on the first day.^{3,4}

Considerable progress has been made globally in improving maternal health. Around the world, 72% of women give birth attended by skilled personnel,⁵ and the maternal mortality ratio has decreased from 380 to 210 per 100,000 live births between 2000 and 2013. Yet, in South-East Asia and sub-Saharan Africa only 67% and 48% of women give birth with the assistance of skilled personnel, respectively.⁵ Postnatal care reaches even fewer women and newborns: less than half of women receive a postnatal care visit within 2 days of childbirth.⁴ An analysis of Demographic and Health Survey data from 23 sub-Saharan African countries found that only 13% of women who delivered at home received postnatal care within 2 days of birth.⁶

The World Health Organization (WHO) recently updated global guidelines on postnatal care for mothers and newborns through a technical consultation process. The new guidelines address the timing and content of postnatal care for mothers and newborns with a special focus on resource-limited settings in low- and middle-income countries.⁷ They complement other recommendations on maternal, perinatal and newborn health,^{8,9} as well as those recommendations on which type of health care worker can safely deliver key maternal and newborn health care interventions,¹⁰ which went through a similar guidelines development process.

Although this brief focuses on postnatal care, the importance of antenatal and intrapartum care within a continuum is recognized to have the greatest impact on maternal and newborn survival.

This brief presents the WHO recommendations while highlighting changes and recommended best practices. It is intended to assist policy-makers, programme managers, educators, and providers involved in caring for women and newborns after birth. Operationalization of these guidelines may help end preventable death, improve health outcomes, strengthen community-based health systems, address gender and equity issues, and emphasize respectful and women-centred maternity care.¹¹ Strategies to improve quality and achieve equitable use of postnatal care should be selected to maximize population-level results in low-resource settings.



A Unifying Term—Postnatal Care

Because the interchangeable use of the terms “postpartum” referring to issues pertaining to the mother and “postnatal” referring to those concerning the baby creates sometimes confusion, the adoption of just a single term “postnatal” should be used for all issues pertaining to the mother and the baby after birth up to 6 weeks (42 days).

Source: WHO Technical Consultation on Postpartum and Postnatal Care. WHO/MPS/10.03. World Health Organization 2010

Best Practices: Postnatal Care for All Mothers and Newborns

- **Provide postnatal care in the first 24 hours to all mothers and babies—regardless of where the birth occurs.** A full clinical examination should be done around 1 hour after birth, when the baby has had his/her first breastfeed. The baby should be checked again before discharge. For home births, the first postnatal contact should be as early as possible within 24 hours of birth and, if possible, an extra contact for home births at 24–48 hours is desirable. Mobile phone-based postnatal care contacts between mothers and the health system may be useful. The content of postnatal care is described in the next two sections.
- **Ensure healthy women and their newborns stay at a health facility at least 24 hours and are not discharged early.** This recommendation is an update from 2006, and the minimum duration of stay was lengthened from 12 to 24 hours. Evidence suggests discharge is acceptable only if a mother's bleeding is controlled, mother and baby do not have signs of infection or other diseases, and the baby is breastfeeding well.
- **All mothers and babies need at least four postnatal checkups in the first 6 weeks.** This is a notable change to the previous guidance, which recommended only two postnatal checkups within 2 to 3 days and at 6 weeks after birth. Now, in addition to postnatal care with two full assessments on the first day, three additional visits are recommended: day 3 (48–72 hours), between days 7–14 and 6 weeks after birth. These contacts can be made at home or in a health facility, depending on the context and the provider. Additional contacts may be needed to address issues or concerns.

Postnatal Care Highlights

- Provide postnatal care in first 24 hours for every birth:
 - Delay facility discharge for at least 24 hours.
 - Visit women and babies with home births within the first 24 hours.
- Provide every mother and baby a total of four postnatal visits on:
 - First day (24 hours)
 - Day 3 (48–72 hours)
 - Between days 7–14
 - Six weeks
- Offer home visits by midwives, other skilled providers or well-trained and supervised community health workers (CHWs).
- Use chlorhexidine after home deliveries in high newborn mortality settings.
- Re-emphasize and support elements of quality postnatal care for mother and newborn, including identification of issues and referrals.

Table 1. Provision of Postnatal Care to Mothers and Newborns: Policy and Programme Actions Based On the New WHO Guidelines

WHO Recommendation 2013	Policy/Programme Action
RECOMMENDATION 1: Timing of discharge from a health facility after birth	
<p>After an uncomplicated vaginal birth in a health facility, healthy mothers and newborns should receive care in the facility for at least 24 hours after birth.* (NEW in 2013)</p> <p>* For the newborn, this care includes an immediate assessment at birth, a full clinical examination around 1 hour after birth and before discharge.</p>	<ul style="list-style-type: none"> • Ensure respectful, women-centred quality care^a is provided for all births. • Review if increased infrastructure (beds, etc.) and staff in postnatal wards are required to provide care respectfully and comfortably for women to stay longer. • Align policies (such as national institutional delivery incentive and insurance schemes) with recommendation. • Adapt and use a simple discharge checklist.¹²
RECOMMENDATION 2: Number and timing of postnatal contacts	
<p>If birth is in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth.^a (NEW in 2013)</p>	<ul style="list-style-type: none"> • Ensure that national standards, quality improvement tools and training curricula promote three assessments in the first 24 hours for the newborn: an immediate assessment at birth; a full clinical examination around 1 hour after birth and again before discharge. • Coordinate postnatal care with the Baby-Friendly Hospital Initiative¹³ to ensure that facility-based procedures and outreach to the community support optimal breastfeeding practices. • Update facility-based providers and promote best practices in postnatal care including pre-discharge counselling, according to the new guidelines.
<p>If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth. (NEW in 2013)</p>	<ul style="list-style-type: none"> • Review current policies and programmes to strengthen delivery and early postnatal care for home births by midwives, other skilled providers and/or well-trained, supervised CHWs.

WHO Recommendation 2013	Policy/Programme Action
At least three additional postnatal contacts are recommended for all mothers and newborns, on day 3 (48–72 hours), between days 7–14, and 6 weeks after birth. (NEW in 2013)	<ul style="list-style-type: none"> • Ensure national standards, quality improvement tools, training curricula and behaviour change communication (BCC) messages/materials to explicitly promote the three additional postnatal care checkups (a total of four from birth in the first 6 weeks) through home visits and facility-based care. • Review/revise national monitoring systems to include the process indicator for postnatal care visits—number of mothers/newborns who received postnatal within 2 days of childbirth (regardless of place of delivery)—for all births.
RECOMMENDATION 3: Home visits for postnatal care	
Home visits in the first week after birth are recommended for care of the mother and newborn.	<ul style="list-style-type: none"> • Determine how best to integrate home visits for postnatal care into responsibilities and training of midwives, other skilled providers and/or well-trained, supervised CHWs. • Explore appropriate mHealth strategies to communicate with mothers who may be difficult to physically reach.
<small>^a WHO guidelines. <i>Pregnancy, childbirth, postpartum and newborn care: A guide for essential practice</i>, define this standard of care; they can be found at http://www.who.int/maternal_child_adolescent/documents/924159084x/en/.</small>	

Related Highlights from Other WHO Guidelines

- Encourage women to deliver with a skilled birth attendant at a health facility so they receive quality intrapartum and postnatal care including administration of a uterotonic during the third stage of labour. Professional skilled care is important for all women and newborns during labour, childbirth and the first day after birth.
- Promote respectful and women-centred maternity care where women are treated with kindness, dignity and respect. Respectful maternity care is an essential part of postnatal care particularly in health facilities. It promotes best practices (such as rooming in, unless separation is medically necessary), recognizes that women and their families should be fully informed on all aspects of care, and values counselling as an opportunity to answer questions and address concerns.

Best Practices: Postnatal Care for Newborns

- **Strengthen postnatal care through home visits and at health facilities.** Elements of postnatal care are re-emphasized from the 2006 guidelines without many significant changes.
- **At each of the four postnatal care checkups, newborns should be assessed for key clinical signs of severe illness and referred as needed.** Nine clinical signs (listed in Recommendation 4 in Table 2 below) have been identified as danger signs that can be identified at home by a CHW or by a skilled provider in a health facility. Evidence suggests that simple algorithms are valid tools in both settings.
- **Continue to promote early and exclusive breastfeeding (EBF) within delivery settings including antenatal care, at delivery, and in all postnatal care visits.** Consistent with previous WHO guidelines, evidence shows EBF reduces the risks of mortality and morbidity in the first month of life (compared to partial and predominant breastfeeding) and improves post-neonatal outcomes. It also encourages improved birth spacing by delaying the return to fecundity. Given the increases in institutional deliveries in many developing countries, policies and programmes should actively promote facility-based counselling and support for EBF including counselling on common breastfeeding problems and ways to manage them if they occur.
- **Consider the use of chlorhexidine for umbilical cord care for babies born at home** to reduce newborn mortality. For newborns who are born at home in settings with high neonatal mortality (30 or more neonatal deaths per 1,000 live births) it is recommended to apply chlorhexidine (7.1% chlorhexidine digluconate aqueous solution or gel, delivering 4% chlorhexidine) daily to the umbilical cord stump during the first week of life. This is a new recommendation, and clean, dry cord care remains the standard recommendation for newborns born in health facilities and at home in low neonatal mortality settings. The use of chlorhexidine in these situations may be considered only to replace application of a harmful traditional substance, such as cow dung, to the cord stump.
- **Reinforce key newborn care messages among families and providers.** WHO re-emphasizes key elements of newborn care including delayed bathing, skin-to-skin contact and immunization. Given the vulnerability of preterm and low-birth-weight babies, interventions are needed to identify these newborns in home and facility settings and ensure they receive special care.

Table 2. Postnatal Care for Newborns: Policy and Programme Actions Based On the New WHO Guidelines

WHO Recommendation 2013	Policy/Programme Action
RECOMMENDATION 4: Assessment of the baby	
<p>The following signs should be assessed during each postnatal care contact, and the newborn should be referred for further evaluation if any of the signs is present: <i>stopped feeding well, history of convulsions, fast breathing (breathing rate of ≥ 60 per minute), severe chest in-drawing, no spontaneous movement, fever (temperature ≥ 37.5 °C), low body temperature (temperature < 35.5 °C), any jaundice in first 24 hours of life, or yellow palms and soles at any age.</i></p> <p>The family should be encouraged to seek health care early if they identify any of the above danger signs in-between postnatal care visits.</p>	<ul style="list-style-type: none"> • Review and adapt available community-based and facility-based job aids for clinical assessments (such as integrated management of childhood illness, integrated management of pregnancy and childbirth) based on simple clinical signs of severe newborn illnesses. • Integrate recognition of clinical signs into CHW and skilled provider trainings. • Review/revise educational messages to emphasize newborn danger signs and care-seeking in counselling of pregnant and postnatal women, families and communities.
RECOMMENDATION 5: Exclusive breastfeeding (EBF)	
<p>All babies should be exclusively breastfed from birth until 6 months of age. Mothers should be counselled and provided support for EBF at each postnatal contact.</p>	<ul style="list-style-type: none"> • Reinforce early EBF and EBF messages during pregnancy and during all postnatal care visits. • Ensure breastfeeding is actively promoted in all health facilities. • Identify and address problems that prevent EBF (e.g., not initiating breastfeeding within 1 hour after birth, not giving colostrum, giving pre-lacteal feeds, breast health issues, mothers' perceptions that their breast milk is not sufficient, lack of knowledge about breastfeeding frequently and from both breasts to ensure breast milk supply). • Integrate lactational amenorrhoea method (LAM) and EBF messages to ensure LAM criteria are followed and the major barriers to EBF are addressed that threaten the effectiveness of LAM. • Prepare mothers for transitioning their infants to complementary foods with continued breastfeeding at 6 months and modern family planning methods for mothers using LAM.
RECOMMENDATION 6: Cord care	
<p>Daily chlorhexidine (7.1% chlorhexidine digluconate aqueous solution or gel, delivering 4% chlorhexidine) application to the umbilical cord stump during the first week of life is recommended for newborns who are born at home in settings with high neonatal mortality (30 or more neonatal deaths per 1,000 live births). (NEW in 2013)</p> <p>Clean, dry cord care is recommended for newborns born in health facilities and at home in low neonatal mortality settings. Use of chlorhexidine in these situations may be considered only to replace application of a harmful traditional substance, such as cow dung, to the cord stump.</p>	<ul style="list-style-type: none"> • In settings with high neonatal mortality, ensure chlorhexidine is available for home births for immediate use by mothers. Related policy/programme issues may include: inclusion on the national List of Essential Medicines for Children; drug registration; local production or procurement; training; supply chain maintenance; and training community midwives and health workers, etc. • Reinforce community messages about clean, dry cord care and add chlorhexidine messages, as appropriate.
RECOMMENDATION 7: Other postnatal care for the newborn	
<p>Bathing should be delayed until 24 hours after birth. If this is not possible due to cultural reasons, bathing should be delayed for at least 6 hours. Appropriate clothing of the baby for ambient temperature is recommended. This means one to two layers of clothes more than adults, and use of hats/caps. The mother and baby should not be separated and should stay in the same room 24 hours a day. Communication and play with the newborn should be encouraged. Immunization should be promoted as per existing WHO guidelines.</p>	<ul style="list-style-type: none"> • Review BCC messages and facility standards to ensure families and providers are informed on these key newborn care messages. • Review national policies and standards with WHO guidelines¹⁴ and revise/strengthen as appropriate. • Encourage skin-to-skin care as part of kangaroo mother care, but also to keep babies warm in cold environments and for all newborns for at least 1 hour after birth.

WHO Recommendation 2013	Policy/Programme Action
Preterm and low-birth-weight babies should be identified as soon as possible and should be provided special care as per existing WHO guidelines.	<ul style="list-style-type: none"> • Develop approaches to identify and refer preterm and low-birth-weight babies, appropriate for home and facility births. • Review clinical standards to promote special care, such as feeding of low-birth-weight infants ¹⁵and kangaroo mother care.¹¹

POSTNATAL CARE-RELATED RECOMMENDATIONS ON NEWBORN CARE FROM OTHER WHO GUIDELINES

- Immediately at birth, all babies should be dried thoroughly and their breathing assessed. The cord should be clamped and cut only after 1–3 minutes, unless the baby needs resuscitation. Routine suctioning must not be done.
- During the first hour after birth, the baby should be in skin-to-skin contact with the mother for warmth and the initiation of breastfeeding.
- A full clinical examination (including weight, danger signs, eyes, cord) and other preventive care should be done around 1 hour after birth, when the baby has had his/her first breastfeed. This care includes giving vitamin K prophylaxis and hepatitis B vaccination as soon as possible after birth (within 24 hours).
- When skilled health personnel attend the newborn, whether at home or in a facility, additional care should be provided. This care includes basic newborn resuscitation with bag and mask for newborns not breathing spontaneously and full clinical examinations at the recommended times.

Best Practices: Postnatal Care for Mothers

- **Strengthen postnatal care for mothers through home visits and at health facilities.** Elements of care are re-emphasized from the 2006 guidelines without many significant changes. Postnatal care includes counselling on family planning, maternal mental health, nutrition and hygiene, and gender-based violence.

Table 3. Postnatal Care for Mothers: Policy and Programme Actions Based On the New WHO Guidelines

WHO Recommendation 2013	Policy/Programme Action
RECOMMENDATION 8: Assessment of the mother	
First 24 hours after birth: All postpartum women should have regular assessment of vaginal bleeding, uterine contraction, fundal height, temperature and heart rate (pulse) routinely during the first 24 hours starting from the first hour after birth. Blood pressure should be measured shortly after birth. If normal, the second blood pressure measurement should be taken within 6 hours. Urine void should be documented within 6 hours.	<ul style="list-style-type: none"> • Ensure that national standards and training curricula for skilled birth attendants include these elements of postnatal care. • Introduce or re-emphasize standards at the facility level using quality improvement tools and checklists.
Beyond 24 hours after birth: At each subsequent postnatal contact, enquiries should continue to be made about general well-being and assessments made regarding the following: urination and urinary incontinence, bowel function, healing of any perineal wound, headache, fatigue, back pain, perineal pain and perineal hygiene, breast pain, uterine tenderness and lochia.	<ul style="list-style-type: none"> • Review national standards and trainings for skilled birth attendants and CHWs include these elements of postnatal care. • Introduce or re-emphasize standards at the facility level and for home postnatal care visits using quality improvement tools, job aids, and checklists.
Breastfeeding should be assessed at each postnatal contact.	<ul style="list-style-type: none"> • Ensure national standards, quality improvement tools and training curricula includes updated breastfeeding policy about managing breastfeeding problems, Baby-Friendly Hospital Initiative principles for facility births, and community outreach.
At each postnatal contact, women should be asked about their emotional wellbeing, what family and social support they have and their usual coping strategies for dealing with day-to-day matters. All women and their families/partners should be encouraged to tell their health care professional about any changes in mood, emotional state and behaviour that are outside of the woman's normal pattern.	<ul style="list-style-type: none"> • Review/revise national standards, quality improvement tools and training curricula to include emotional wellbeing assessment.

WHO Recommendation 2013	Policy/Programme Action
At 10–14 days after birth, all women should be asked about resolution of mild, transitory postpartum depression (“maternal blues”). If symptoms have not resolved, the woman’s psychological well-being should continue to be assessed for postpartum depression, and if symptoms persist, evaluated.	<ul style="list-style-type: none"> Review/revise national standards, quality improvement tools and training curricula to include counselling for postpartum depression. Ensure linkages/referrals to available maternal mental health services for evaluation.
Women should be observed for any risks, signs and symptoms of domestic abuse.	<ul style="list-style-type: none"> Ensure linkages/referrals within facilities and at the community level to available gender-based violence services.
Women should be told whom to contact for advice and management.	
All women should be asked about resumption of sexual intercourse and possible dyspareunia as part of an assessment of overall well-being 2–6 weeks after birth.	<ul style="list-style-type: none"> Integrate messages on postpartum pregnancy risk and family planning, including LAM and postpartum intrauterine contraceptive device (IUD). Review national health management information systems tools to construct new feasible postpartum family planning indicator(s) to be tracked and reported (e.g., percentage of postpartum women accepting a contraceptive method prior to discharge [disaggregated by method: LAM, postpartum IUD, postpartum tubal ligation, condoms]; percentage of women bringing children for vaccination who accept a family planning method in the same visit).
If there are any issues of concern at any postnatal contact, the woman should be managed and/or referred according to other specific WHO guidelines. ³	
RECOMMENDATION 9: Counselling	
All women should be given information about the physiological process of recovery after birth and told that some health problems are common, with advice to report any health concerns to a health care professional, in particular, signs and symptoms of postpartum haemorrhage, pre-eclampsia/eclampsia, infection and thromboembolism. (NEW in 2013)	<ul style="list-style-type: none"> Review/revise national standards, quality improvement tools and training curricula for skilled birth attendants and CHWs to include these elements of postnatal counselling and care, particularly the addition of screening for thromboembolism. Introduce or re-emphasize standards at the facility level and for home postnatal care visits using quality improvement tools, job aids, and checklists. Review/revise educational messages to emphasize postnatal danger signs and care seeking in counselling of pregnant and postnatal women, families and communities.
Women should be counselled on nutrition.	<ul style="list-style-type: none"> Emphasize with mothers and their family members the importance of eating a greater amount and variety of healthy foods. Review/revise national standards, quality improvement tools and training curricula for providers to ensure adequate counselling skills on nutrition in the context of local practices and taboos, particularly adolescents and very thin women. Review/revise CHW training curriculum, CHW job aids and BCC materials to emphasize key postnatal nutrition messages.
Women should be counselled on hygiene, especially handwashing.	<ul style="list-style-type: none"> Review/revise CHW training curriculum, CHW job aids and BCC materials to emphasize hygiene and handwashing for postnatal (especially if the woman experienced a severe perineal tear), newborn, and infant care.
Women should be counselled on birth spacing and family planning. Contraceptive options should be discussed, and contraceptive methods should be provided if requested.	<ul style="list-style-type: none"> Integrate messages on postpartum pregnancy risk and family planning, including LAM.

WHO Recommendation 2013	Policy/Programme Action
Women should be counselled on safer sex including use of condoms.	
In malaria-endemic areas, mothers and babies should sleep under insecticide-impregnated bed nets.	
All women should be encouraged to mobilize as soon as appropriate following the birth. They should be encouraged to take gentle exercise and make time to rest during the postnatal period.	<ul style="list-style-type: none"> Review community messages for family members, such as partners and mothers-in-law, to encourage them to help ensure the woman eats enough and avoids strenuous physical work.
RECOMMENDATION 10: Iron and folic acid supplementation	
Iron and folic acid supplementation should be provided for at least 3 months after delivery. ^b	<ul style="list-style-type: none"> Review national standards, quality improvement tools, and training curricula on postnatal iron and folic acid supplementation for postnatal mothers. Strengthen iron and folic acid distribution and compliance among postnatal mothers. Review/update national standards to remove vitamin A supplementation for postnatal women¹⁶ and transition to promoting dietary sources of vitamin A for postnatal mothers.
RECOMMENDATION 11: Prophylactic antibiotics	
The use of antibiotics among women with a vaginal delivery and a third or fourth degree perineal tear is recommended for prevention of wound complications. (NEW in 2013)	<ul style="list-style-type: none"> Review/revise national standards, quality improvement tools, and training curricula to include use of antibiotics for women with a third or fourth degree perineal tear.
There is insufficient evidence to recommend the routine use of antibiotics in all low-risk women with a vaginal delivery for prevention of endometritis.	
RECOMMENDATION 12: Psychosocial support	
Psychosocial support by a trained person is recommended for the prevention of postpartum depression among women at high risk of developing this condition. There is insufficient evidence to recommend routine formal debriefing to all women to reduce the occurrence/risk of postpartum depression or to recommend the routine distribution of, and discussion about, printed educational material for prevention of postpartum depression.	<ul style="list-style-type: none"> Review/revise national standards, quality improvement tools, and training curricula on counselling for postpartum depression. Ensure linkages/referrals to available maternal mental health services for evaluation.
Health professionals should provide an opportunity for women to discuss their birth experience during their hospital stay.	
A woman who has lost her baby should receive additional supportive care.	<ul style="list-style-type: none"> Review/revise national standards, quality improvement tools, and training curricula to integrate culturally appropriate services (including counselling) for women experiencing miscarriages, stillbirths, and newborn deaths.
<p>^a The WHO guidelines, <i>Pregnancy, childbirth, postpartum and newborn care: A guide for essential practice</i>, that define this standard of care can be found at http://www.who.int/maternal_child_adolescent/documents/924159084x/en/.</p> <p>^b Currently, there is no evidence to change this recommendation. WHO is working on developing specific guidelines for maternal nutrition interventions after birth.</p>	

Postnatal Care-Related Recommendations from Other WHO Guidelines

Continue to ensure all women who give birth receive active management of third stage of labour and close monitoring immediately after birth as part of their delivery care that reduces the risk of postpartum haemorrhage in the postnatal period.

