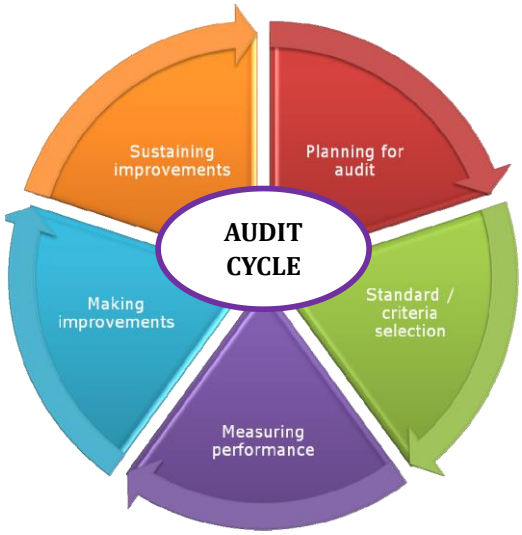
DEDER GENERAL HOSPITAL

NEONATAL INTENSIVE CARE UNIT (NICU)



CLINICAL AUDIT TO IMPROVE THE QUALITY OF CLINICAL CARE OF NEONATAL SEPSIS

By: Usmail Abrahim Neonatal Nurse)- NICU head

Dr. Tajuddin Abdi (MD, GynOBS specialist)-Team leader

Advisors:

☞ ***HQU TEAM***

Dader, Oromia

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NICU case team Clinical Audit/QI team members:

S/N	Name	Responsibility	Remarks
1.	Dr. Taju Abdi (MD, Senior)	**Team leader**	
2.	Ismael Abrahim	**Secretory**	
3.	Abdurhaman Bakri	Member	
4.	Mahader Gidlu	Member	
5.	Maserat Megarsa	Member	
6.	Ruziya Ahmed	Member	
7	Derartu Abdulaziz	Member	

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ABSTRACT

Introduction: The neonatal period is the most vulnerable time for children's survival. Globally every year about 4 million children die in the first 4 weeks of life, of which 99% of the deaths occur in low- and middle-income countries and of which 75% are considered avoidable. Neonatal sepsis (NS) continues to pose significant morbidity and mortality despite the continued advancement in neonatal care. Neonatal sepsis is classified into early- and late-onset depending on the timing of infection in days after birth. Another classification includes hospital-acquired vs. community-acquired. The global incidence of NS varies, with a population-level estimate of 2,202 per 100,000 live births, with mortality rates ranging from 11 to 19% in high- and middle-income countries and 2.9 to 24 per 1,000 live births in low-income countries.

Objective: To improve the quality of clinical care provided for neonates admitted with the diagnosis of sepsis (suspected and proven)

Method: Retrospective cross-sectional study

Result: The clinical audit included 19 patient charts and 10 standards. The standards consist of 62 sub-criteria and one outcome standard. Of the 10 criteria for neonatal sepsis, eight met the criterion of 100% while two had significant differences from the target. Overall performance for management of neonatal sepsis was **96%.**

INTRODUCTION

The neonatal period is the most vulnerable time for children's survival. Globally every year about 4 million children die in the first 4 weeks of life, of which 99% of the deaths occur in low- and middle-income countries and of which 75% are considered avoidable [1]. Even though neonatal mortality shows a declining trend over the last 20 years from 50.6 per 1000 live births in 1998 to 28.9 per 1000 live births in 2017 [2], Ethiopia continuous to struggle with a prevalence of about 42% or 81,000 newborn deaths every year [1]. Thus all neonatal deaths in sub-Saharan Africa and southern Asia [7]. Even though there are some improvements to access essential preventive, primary child health care services and sector training [1], neonatal sepsis is still the major cause of newborn deaths resulting in more than one-third of all neonatal deaths [1, 8].

Statement of problem

Neonatal sepsis (NS) continues to pose significant morbidity and mortality despite the continued advancement in neonatal care (9, 10). Neonatal sepsis is classified into early- and late-onset depending on the timing of infection in days after birth (11). Another classification includes hospital-acquired vs. community-acquired (12, 13).

The global incidence of NS varies, with a population-level estimate of 2,202 per 100,000 live births, with mortality rates ranging from 11 to 19% in high- and middle-income countries (14) and 2.9 to 24 per 1,000 live births in low-income countries (15). Advancement in obstetrical care and universal screening for Group B Streptococcus (GBS) to stratify risk for NS has helped reduce the incidence of sepsis even further (16). Despite the reduction in NS in many countries, it still possesses a serious threat to neonates (17). Neonatal bacterial infection affecting neonates admitted to the neonatal intensive care unit (NICU) further complicates their course in the hospital and increases the risk of morbidity and mortality (18)

OBJECTIVE

General objective

To improve the quality of clinical care provided for neonates admitted with the diagnosis of sepsis (suspected and proven)

Specific objectives

- To ensure neonates with suspected or proven sepsis are appropriately evaluated
- To ensure neonates with suspected or proven sepsis are appropriately investigated
- To ensure neonates with suspected or proven sepsis are appropriately treated
- To ensure neonates with suspected or proven sepsis are appropriately monitored
- To ensure neonates with suspected or proven sepsis receive appropriate discharge care

METHODS

Study area & period

The clinical audit was conducted in NICU of Deder General Hospital from September 21-24, 2017EC

Study design

Retrospective cross-sectional study

Source population

All charts of Neonates admitted to NICU

Study population

All neonates admitted with a diagnosis of neonatal sepsis to NICU

Inclusion criteria

All neonates admitted with a diagnosis of neonatal sepsis to NICU from June 21, 2016E.C to September 20, 2017E.C

Exclusion criteria

Death on arrival, those who are observed and sent back to mother or discharged within 24 hours

Sampling technique

A total of 19 medical records (client chart) of the last two months of reporting periods were sampled for the audit. The individual client charts were withdrawn by systematic random sampling.

Study Variables

Dependent variables:

Perinatal Asphyxia

Independent Variables

ANC follow-up, Place of birth, mode of delivery,

Data collection method

Data extraction sheet was adapted from National clinical audit tool

Data Processing & analysis

Data from extraction sheets was manually verified and entered into the SPSS version 25 software for analysis. The software checked data types, sizes, classifications, and allowable values. Corrections were made, and the findings were presented in tables and figures.

RESULT

The clinical audit included 19 patient charts and 10 standards. The standards consist of 62 sub-criteria and one outcome standard. Of the 10 criteria for neonatal sepsis, eight met the criterion of 100% while two had significant differences from the target. Overall performance for management of neonatal sepsis was **96% (Table 1).**

Table 1**: ACTUAL PERFORMANCE ANDV PERFORMANCE AGAINST TARGET (%)**

S.no	Standards/criteria	Target	Actual performance	Performance against target
1.	Identification information is recorded for a neonate with sepsis	100	100	
2.	Appropriate history is taken for a neonate with sepsis	100	100	
3.	Appropriate physical examination is performed for a neonate with sepsis	100	100	
4.	Relevant investigations are done for a neonate with sepsis at day of admission	80	64	16
5.	Appropriate diagnosis is made for a neonate with sepsis	100	100	
6.	Appropriate treatment is provided for a neonate with sepsis on the immediate admission day	100	100	
7.	Appropriate monitoring is done for a neonate with sepsis during hospital stay	100	96	4
8.	Appropriate discharge care is provided for a neonate with sepsis	100	100	
9.	Identification of provider is documented for a neonate with sepsis	100	100	
10.	A neonate with sepsis died while being treated in the health facility	15	NA	0
	Total standards met per chart	880	**860/880**	
	Percentage	98%	**96%**	2%

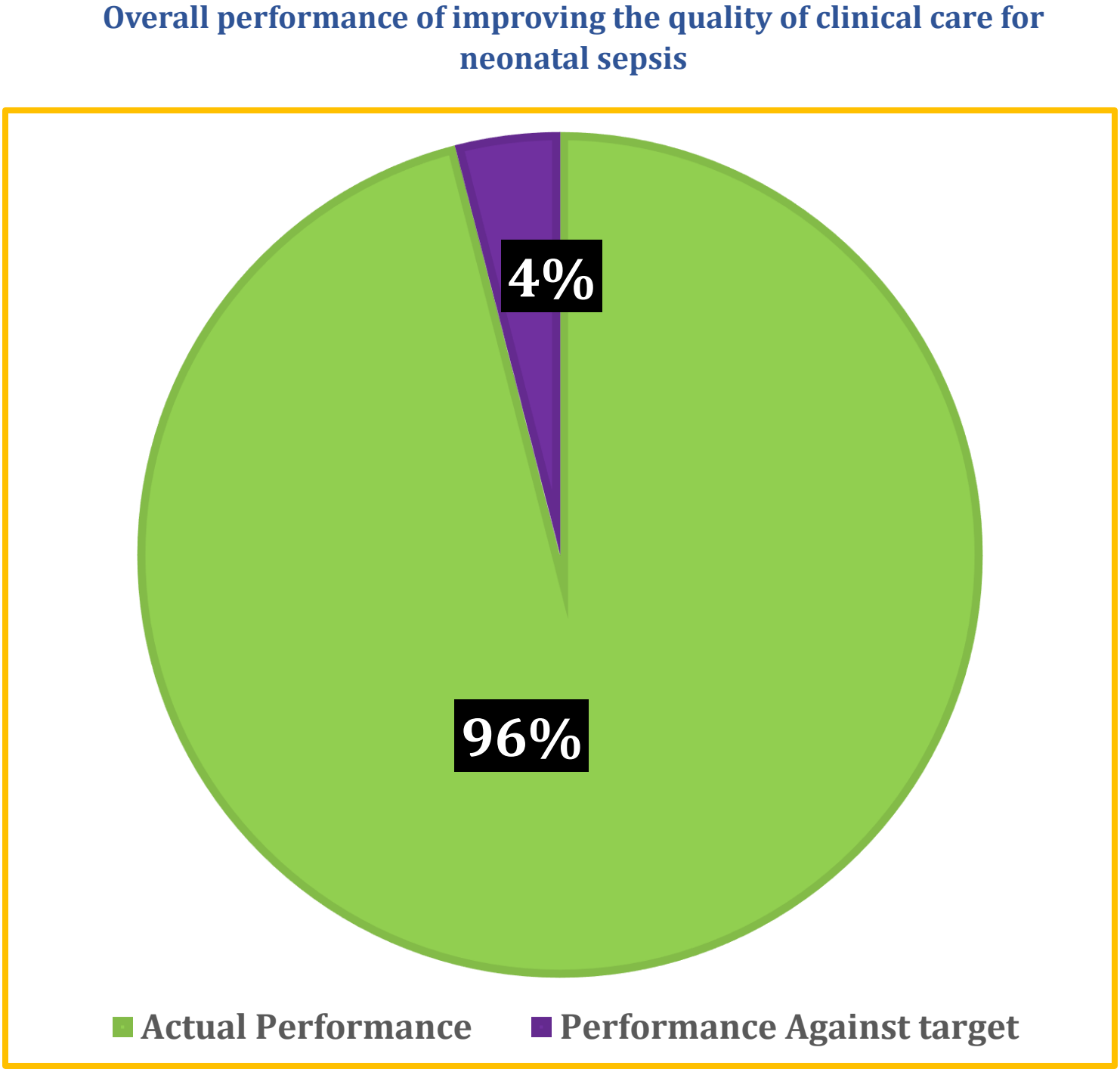

Figure 1: Overall performance of improving the quality of clinical care for neonatal sepsis, September 2017E.C

Graph showing score for each criterion/standard for management of neonatal sepsis, September 2017E.C

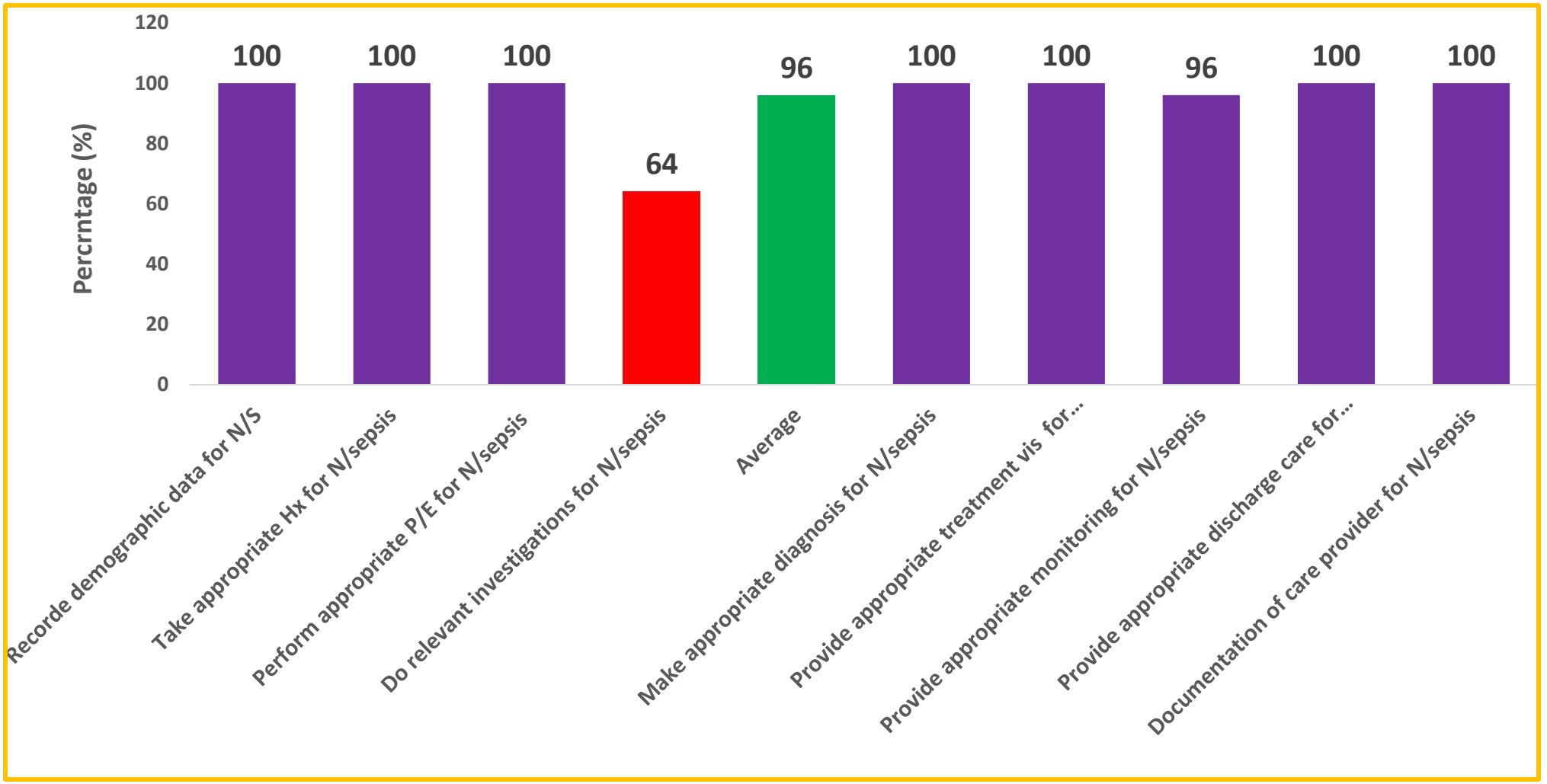

Figure 2: Score for each criterion/standard for neonatal sepsis management, September 2017E.C E.C

Table 2**: Prioritization matrix for Identified problems**

S.No	List of identified problems	Prioritization criteria			Total	Rank
		Magnitude (out of 5)	Feasibility	Importance		
1.	Appropriate monitoring is not done for a neonate diagnosed with sepsis during hospital stay	1	1	3	5	2
2.	Relevant investigations are not done for a neonate diagnosed with sepsis	3	3	4	10	1

Table 3: **List of prioritized Problems to be addressed**

S.No	**Problems List**	**Rank**	**Remark**
1.	Relevant investigations are not done for a neonate diagnosed with sepsis	1	
2.	Appropriate monitoring is not done for a neonate diagnosed with sepsis during hospital stay	2	

Table 4**: Action plan**

Summary of problem	Root cause	Change ideas	Responsible body	Time frame
Relevant investigations are not done for a neonate diagnosed with sepsis	Machine failure	Do maintenance	Biomedical engineer & finance head	Within a month
Appropriate monitoring is not done for a neonate diagnosed with sepsis during hospital stay	Negligence	Conduct meeting with the all staff	Director and NICU head	ASAP

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