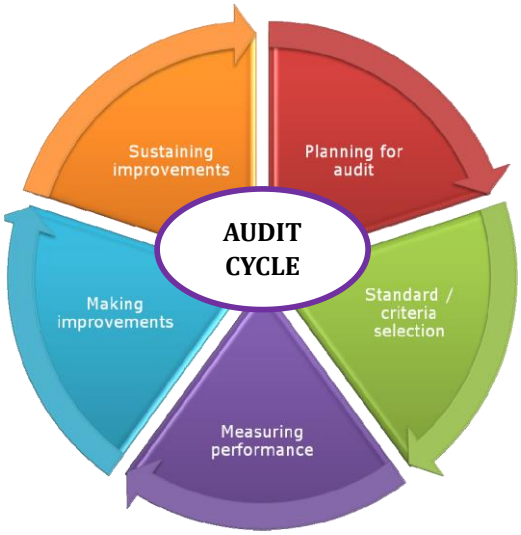
DEDER GENERAL HOSPITAL

NEONATAL INTENSIVE CARE UNIT (NICU)



CLINICAL AUDIT TO IMPROVE THE QUALITY OF CLINICAL CARE OF BIRTH ASPHYXIA

By:

1. Dr. Taju Abdi (MD, Gyn/OBS specialist)-Team leader Usmail
2. Abrahim Neonatal Nurse)- NICU head

Advisors:

☞ ***HSQU 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: Perinatal asphyxia is defined as a condition that leads to progressive hypoxemia, hypercapnia, and metabolic acidosis with multi-organ failure. Globally, 2 to 10 per 1000 term newborns faced perinatal asphyxia. The report of the World health organization (WHO) indicated that 4 million neonatal deaths occur yearly due to birth asphyxia. The incidence of birth asphyxia in most developed countries accounts less than 0.1% of newborn deaths. But, in developing countries, it ranged from 4.6/1000 to 7–26/1000 live births [6]. More than 25.0% of the world's

newborn deaths have occurred in Africa. Of those, birth asphyxia accounts 24.0%. From 20 countries in the world with the highest risk of neonatal death, 75.0 % are in Africa. Birth asphyxia, infections and complications of preterm birth together account 88.0% of newborn deaths in Africa. In Sub-Saharan Africa, birth asphyxia brought 280,000 deaths of the newborn in the first day of life.

Objective: To improve the quality of clinical care provided for neonates admitted with the diagnosis of birth asphyxia

Method: Retrospective cross-sectional study

Result: The clinical audit included 19 patient charts and 10 standards. The standards were consisting of 15 process and one outcome standards. No standards were met 100%. The overall performance of management of birth asphyxia was **96%.** From10 standards of Birth Asphyxia 4 of the standards have significant Difference with the Target

INTRODUCTION

Perinatal asphyxia is defined as a condition that leads to progressive hypoxemia, hypercapnia, and metabolic acidosis with multi-organ failure [1]. Perinatal asphyxia is also defined as the inability of a newborn to initiate and sustain adequate respiration after delivery [2]. According to the American College of Obstetricians and Gynecologists, and the American Academy of Pediatrics, a neonate is labelled to be asphyxiated if (a) umbilical cord arterial pH < 7; (b) Apgar score of 0–3 for longer than 5 min; (c) neonatal neurological manifestations (seizures, coma or hypotonia); and (d) multisystem organ dysfunction (cardiovascular, gastrointestinal, hematological, pulmonary or renal system) [3].

Statement of problem

Globally, 2 to 10 per 1000 term newborns faced perinatal asphyxia [4]. The report of the World health organization (WHO) indicated that 4 million neonatal deaths occur yearly due to birth asphyxia [5]. The incidence of birth asphyxia in most developed countries accounts less than 0.1% of newborn deaths. But, in developing countries, it ranged from 4.6/1000 to 7–26/1000 live births [6]. More than 25.0% of the world's newborn deaths have occurred in Africa. Of those, birth asphyxia accounts 24.0%. From 20 countries in the world with the highest risk of neonatal death, 75.0 % are in Africa [7]. Birth asphyxia, infections and complications of preterm birth together account 88.0% of newborn deaths in Africa. In Sub-Saharan Africa, birth asphyxia brought 280,000 deaths of the newborn in the first day of life [8]. The incidence of asphyxia in East, Central, and Southern Africa was 22.0% [9]. The overall pooled prevalence of perinatal asphyxia in Ethiopia was 24.06% and it is the second commonest cause of neonatal mortality only preceded by prematurity related complications and the commonest cause of disability in surviving newborns (15).

OBJECTIVE

General objective

- To improve the quality of clinical care provided for neonates admitted with the diagnosis of birth asphyxia

Specific objectives

- To ensure neonates with birth asphyxia are appropriately evaluated
- To ensure neonates with birth asphyxia are appropriately investigated
- To ensure neonates with birth asphyxia are appropriately treated
- To ensure neonates with birth asphyxia are appropriately monitored
- To ensure neonates with birth asphyxia receive appropriate discharge care

Methods

Study area & period

The clinical audit was conducted in NICU of Deder General Hospital from September 22-25, 2017EC

Study design

Retrospective cross-sectional study

Source population

All charts of Neonates admitted to NICU

Study population

All charts of neonate admitted to NICU with PNA diagnosis

Inclusion criteria

All neonates admitted with a diagnosis of birth asphyxia to NICU

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 were consisting of 15 process and one outcome standards. No standards were met 100%. The overall performance of management of birth asphyxia was **96%.** From10 standards of Birth Asphyxia 4 of the standards have significant Difference with the Target **(Table 1).**

Table 1: ACTUAL PERFORMANCE ANDV PERFORMANCE AGAINST TARGET

S.no	➢ Standards/criteria for PNA	Target	Actual performance
1.	Identification information is recorded for a neonate with birth asphyxia	100	100
2.	Appropriate history is taken for a neonate with birth asphyxia	100	100
3.	Appropriate physical examination is performed for a neonate with birth asphyxia	100	100
4.	Relevant investigations are done for a neonate with birth asphyxia at the day of admission	80	70
5.	Appropriate diagnosis is made for a neonate with birth asphyxia	100	100
6.	Appropriate treatment is provided for a neonate with birth asphyxia on the immediate admission day	100	100
7.	Appropriate monitoring is done for a neonate with birth asphyxia during hospital stay	100	96
8.	Appropriate discharge care is provided for a neonate with birth asphyxia	100	100
9.	Identification of provider is documented for a neonate with birth asphyxia	100	100
10.	A neonate with birth asphyxia died while being treated in the health facility 15%	15	NA
	Total performance (%)		**866/9=96%**

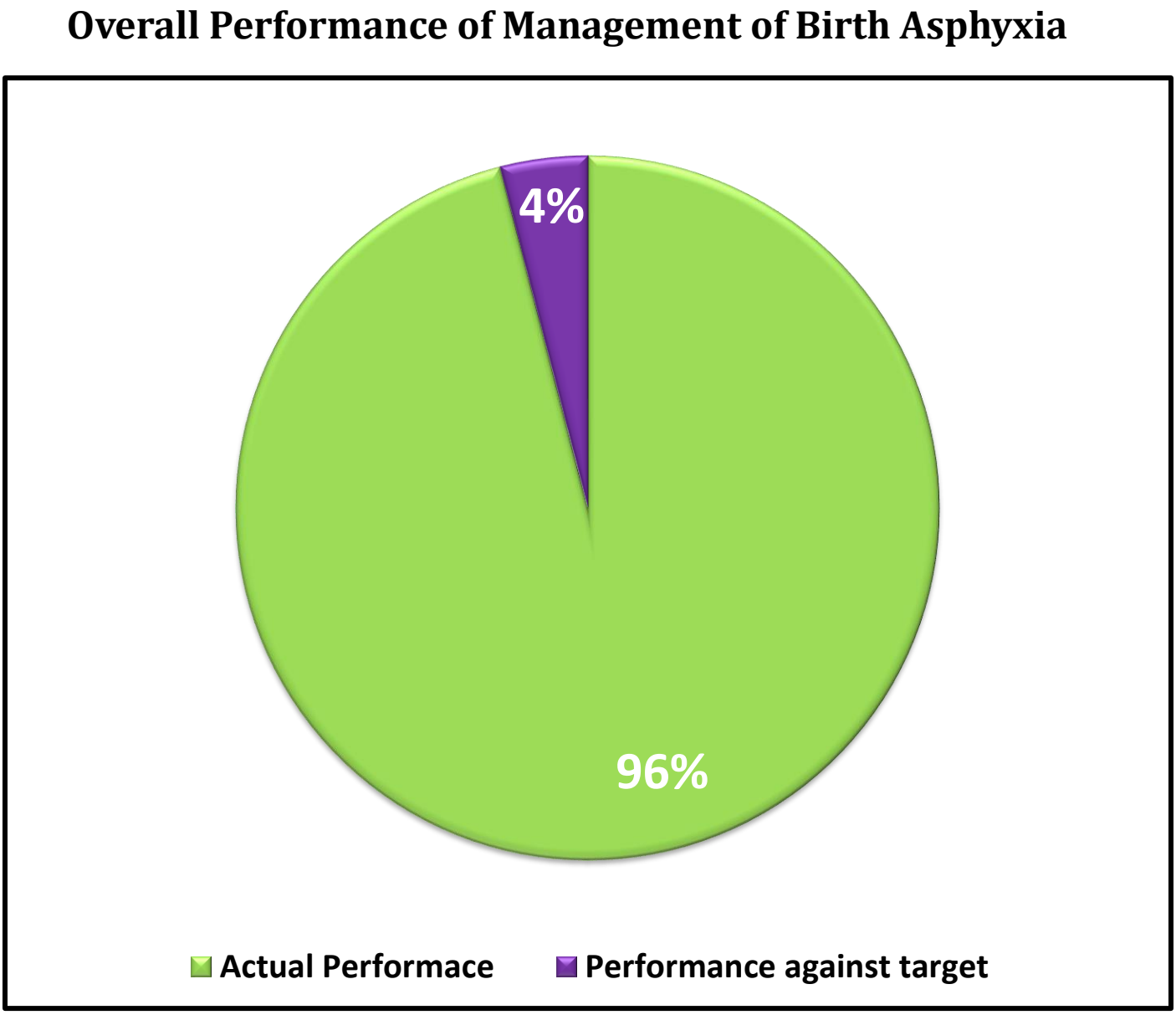

Figure 1: Overall Performance of Management of Birth Asphyxia at DGH NICU, Sept 2017EC

Graph showing score for each criterion/standard for management of Birth asphyxia, Sept 2017EC

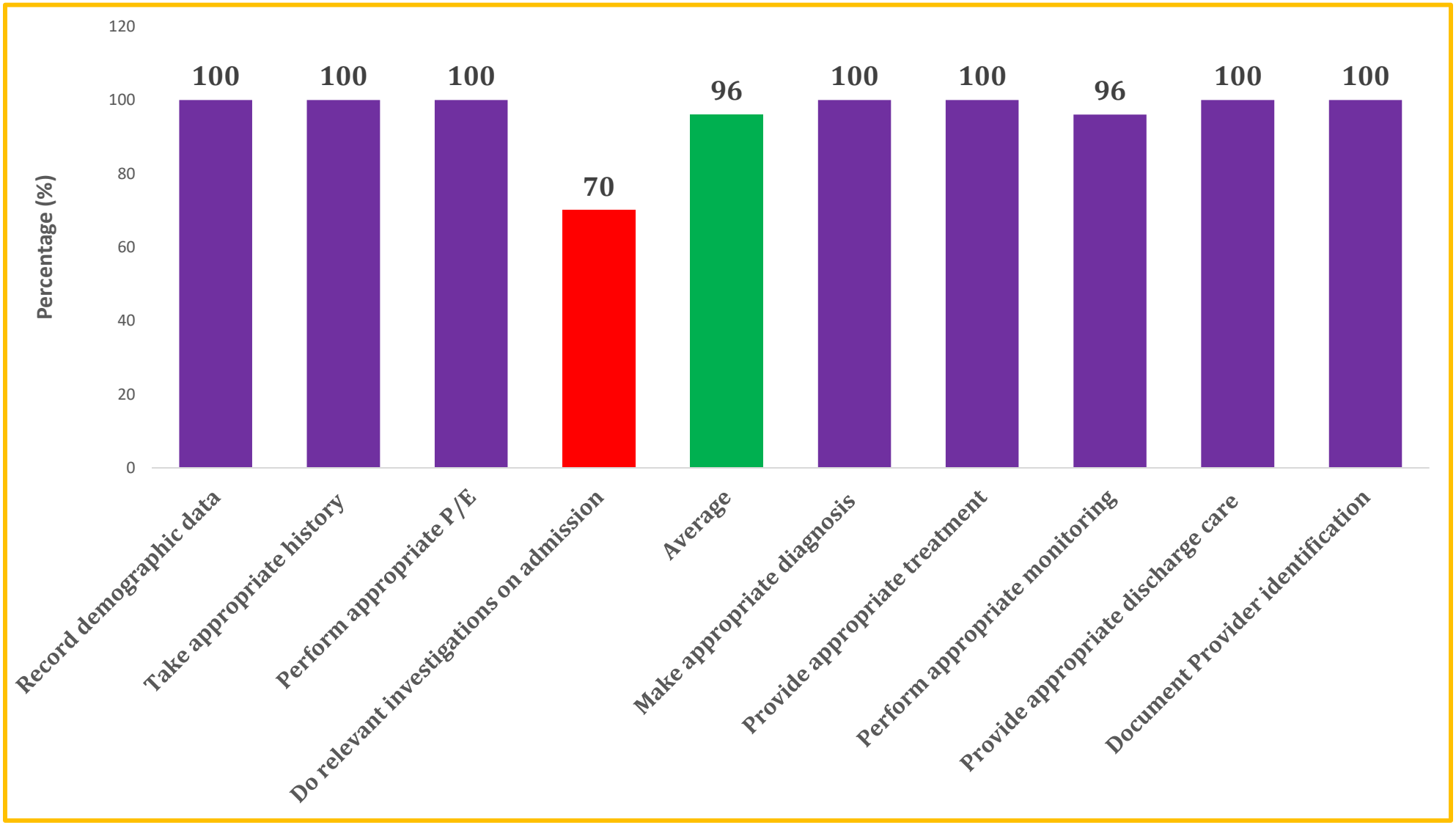

Figure 2: score for each criterion/standard for management of Birth asphyxia, Sept 2017EC

Table 2: Prioritization matrix for Identified problems

S.No	List of identified problems	Prioritization criteria			Remark	
		Magnitude (out of 5)	Feasibility	Importance		
1.	Appropriate monitoring is done for a neonate with PNA during hospital stay	1	1	3	5	2
2.	Relevant investigations are done for a neonate with birth asphyxia at the day of admission	3	3	4	10	2
3.	Appropriate discharge care	2	3	5	10	3

Table 3: List of prioritized Problems to be addressed

S.No	**Problems List**	**Rank**	**Remark**
1.	Appropriate monitoring is done for a neonate with birth asphyxia during hospital stay	1	
2.	Relevant investigations are done for a neonate with birth asphyxia at the day of admission	2	

Table 4: Action plan

Summary of problem	Root cause	Change ideas	Responsible body	Time frame
Appropriate investigation is not done for a neonate with birth asphyxia during hospital stay	Lack of reagents	Availing reagents	Lab head & finance head	Within a month

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