DEDER GENERAL HOSPITAL

NEONATAL INTENSIVE CARE UNIT (NICU)

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

By:

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Advisors:

☞ ***HSQU Team***

Dader, Oromia

December 2017EC

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**	
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The implementation status of the previous audit action plan

The implementation status of the previous audit action plan showed significant improvements in documentation, diagnosis, and treatment standards but highlighted persistent gaps in investigations, monitoring consistency, and neonatal survival, necessitating targeted interventions to address these areas.

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 21, 2017EC To December 20, 2017E.C**

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 overall performance of management of birth asphyxia was **87%.** The clinical audit on perinatal asphyxia revealed strong performance in documentation, history-taking, diagnosis, treatment, and discharge care, all achieving 100% compliance, reflecting robust clinical protocols and staff diligence. Monitoring during hospitalization showed near-complete compliance (96%), highlighting minor gaps in consistency. However, only 70% compliance was achieved in performing relevant investigations on admission, indicating procedural or resource-related challenges. Most critically, the mortality reduction target was unmet, with no neonates surviving PNA treatment, underscoring an urgent need for improved resuscitation protocols, enhanced postnatal care, and better resource availability to address this critical issue. **(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 (%)		**866/1000=87%**

Overall Performance of Management of Birth Asphyxia

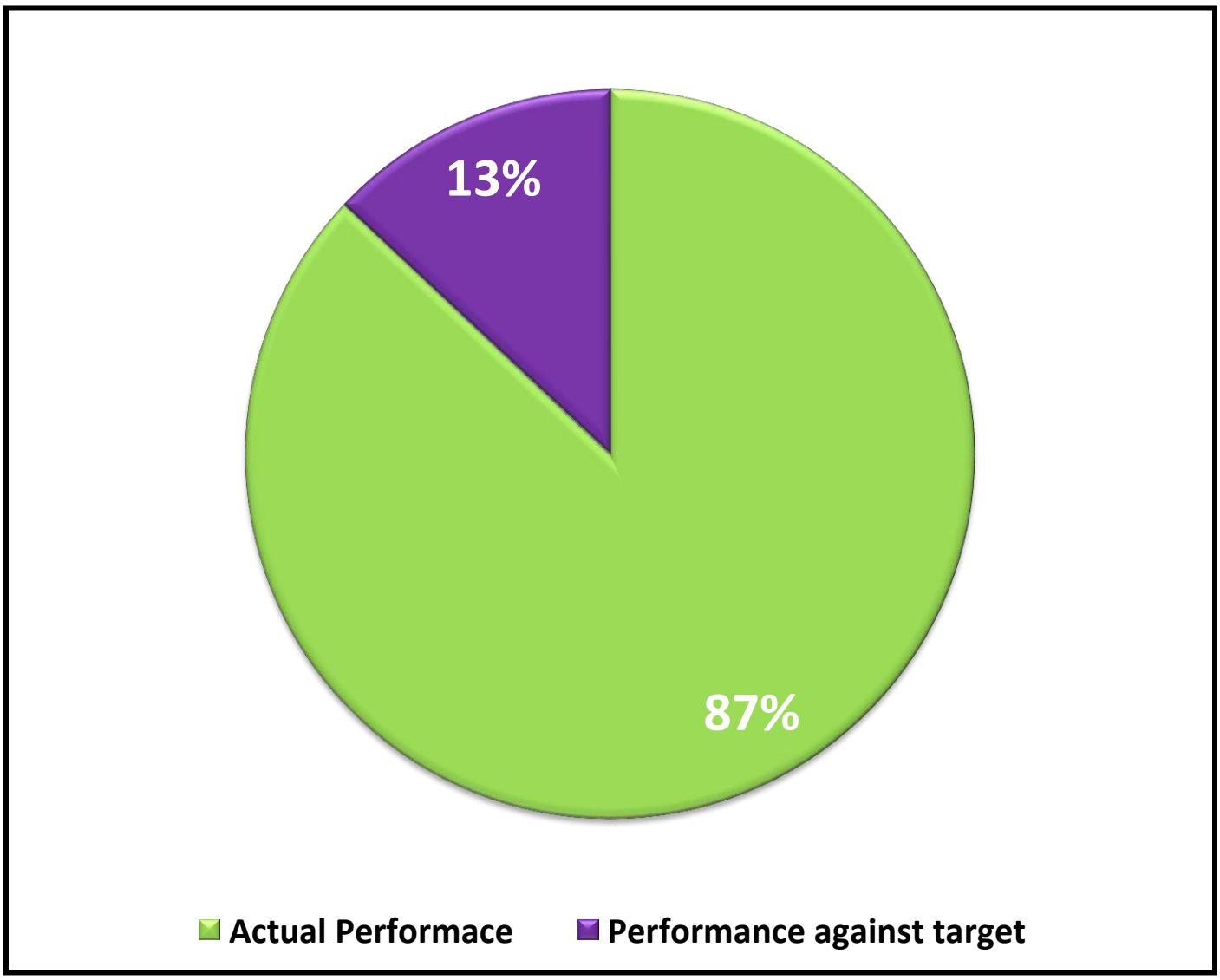

*Figure 1:**Overall Performance of Management of Birth Asphyxia at DGH NICU, Dec 2017EC***

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

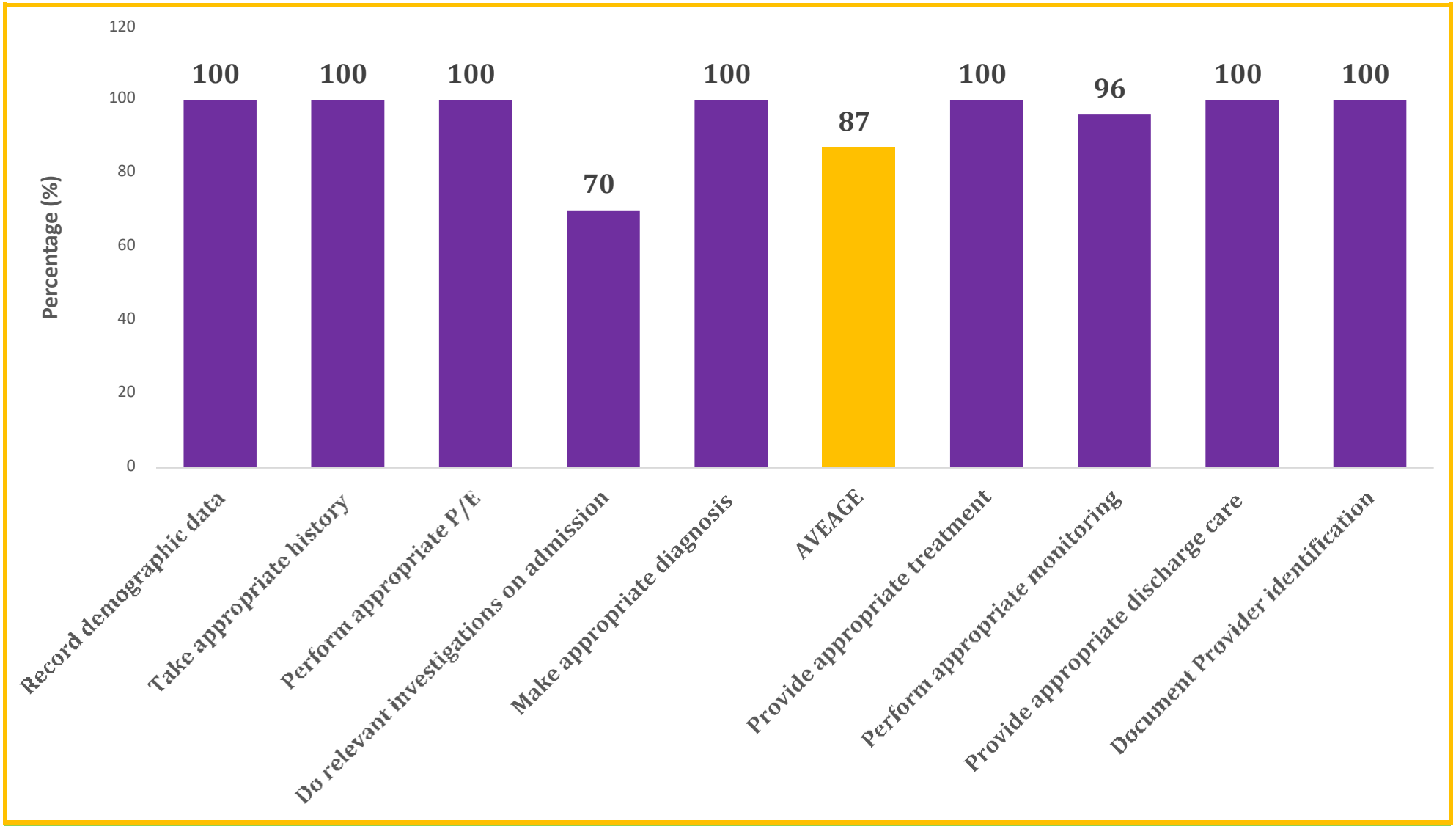

Figure 2 ***score for each criterion/standard for management of Birth asphyxia, 2017***

RECOMMENDATIONS

1. Improve Relevant Investigations:
2. Enhance Monitoring During Hospital Stay:

DEDER GENERAL HOSPITAL

CLINICAL AUDIT QUALITY IMPROVEMENT PLAN/PDSA FORM

Clinical Audit Title: CLINICAL AUDIT TO IMPROVE THE QUALITY OF CLINICAL CARE OF BIRTH ASPHYXIA

Clinical Audit Lead: Dr.Taju Abdi Department /Team NICU

Audit Cycle: 2

		Plan					DO	STUDY	ACT
S/N	**Recommendation**	**Actions to address the recommendation/Change idea**	**Person Responsible**	**Target Date**	**Data collection plan**		Carry out the plan. Record data, observations and modifications to the plan. Use visual descriptions such as run charts to describe what actually happened	Complete analysis and synthesis. Do the results align with the explicit criteria? Write the progress made in the implementation, the difficulties faced and actions taken to address them.	**Decision**: What action are we going to take as a result of this cycle (**Adopt, Adapt, or Abandon**)? Are we ready to implement? What other processes or systems might be affected by this change?
	Recommendation based on findings fromclinical audit report form	What change will we test? What do we need to try the change?	Who will perform the test? (Name or Role)	When will this be complete?	How will we collect data? (Checklist, Chart audit,)	Who will collect the data? (Name or Role)			
	Improve Relevant Investigations:	☐ Ensure necessary diagnostic equipment and reagents are available ☐ Develop a checklist for required investigations to be completed within 24 hours of admission	Finance head (Obsa) and NICU head (Usmail)	Until next audit (Mar 2017)	Checklist	Abdi & Abdella			
	Enhance Monitoring During Hospital Stay:	- Reinforce accountability among nurses for accurate neonatal monitoring in hospital stay	NICU Head (Usmail)	From jan 10, 2017	Checklist	Abdi & Abdella			

☐ **Adapt***(Modify this change and plan next PDSA cycle; loop back to "Plan")* ☐ **Abandon***(Change didn't work/won't lead to improvement. Identify new change; plan new PDSA cycle; loop back to "Plan")*

☐ **Adopt** *(Data revealed this change was effective andworked well; Nextstep, develop implementation plan) >>>>*

Completed by:	**Sign off:**	**Date of review of PDSA:**

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