DEDER GENERAL HOSPITAL

PEDIATRICS WARD

Clinical Audit to improve the quality clinical care provided for pediatrics patients diagnosed and admitted with SAM

By: Pedi Ward Clinical Audit/QI Team

Audit phase: Re-Audit

Deder, Oromia

March 2017E.C

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INTRODUCTION

Severe Acute Malnutrition (SAM) remains one of the most critical global health challenges, particularly in low-resource settings where it accounts for significant under-five mortality. Defined by severe wasting (weight-for-height below -3 SD of WHO standards) or nutritional edema, SAM dramatically increases vulnerability to life-threatening complications including infections and organ failure. Globally, malnutrition contributes to 45% of childhood deaths, with SAM representing its most dangerous form. In Ethiopia, this crisis is exacerbated by chronic food insecurity, recurrent droughts, and limited healthcare infrastructure.

The national malnutrition burden reveals alarming statistics, with 37% of under-five children stunted and 7% wasted according to 2019 EDHS data. Of particular concern is SAM's 1% prevalence nationally, disproportionately affecting agrarian and pastoralist communities vulnerable to climate shocks. Regional disparities are stark, with Oromia State experiencing higher-than-average rates of stunting (38%) and wasting (8%). These figures peak during lean seasons when food scarcity is most severe, highlighting the cyclical nature of nutritional crises in vulnerable populations.

Oromia's malnutrition epidemic stems from interconnected challenges: 30% of households face food insecurity, only 24% of children receive minimum dietary diversity, and an estimated 40% of SAM cases never reach treatment facilities. These systemic barriers - compounded by poverty and healthcare access limitations - create a perfect storm for persistent high malnutrition rates. The region's situation reflects broader national challenges while demanding targeted, context-specific interventions.

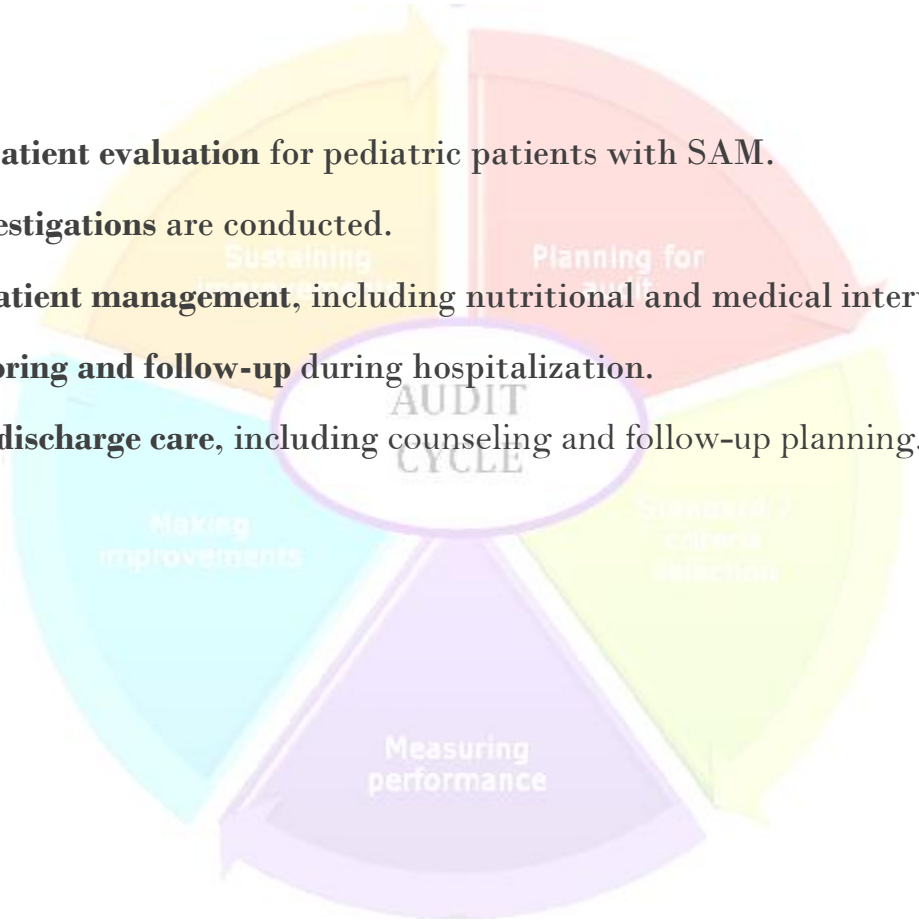
This clinical audit was conducted to evaluate SAM management protocols against these sobering realities. By assessing care quality across identification, treatment, and follow-up processes, we aim to identify critical gaps in service delivery. The findings will inform strategies to strengthen pediatric malnutrition care in Oromia, ultimately contributing to Ethiopia's progress toward WHO/UNICEF malnutrition reduction targets. Our analysis is particularly timely given the compounding effects of recent climate shocks and economic pressures on vulnerable households in the region.

AIM

- To improve the quality of clinical care provided to pediatric patients diagnosed and admitted with **Severe Acute Malnutrition (SAM).**

OBJECTIVES

- Ensure appropriate **inpatient evaluation** for pediatric patients with SAM.
- Ensure **appropriate investigations** are conducted.
- Ensure **appropriate inpatient management**, including nutritional and medical interventions.
- Ensure **effective monitoring and follow-up** during hospitalization.
- Ensure **comprehensive discharge care**, including counseling and follow-up planning.



METHODOLOGY

Study design

- Retrospective cross-sectional study

Study period

- The clinical audit was conducted in ICU of Deder General Hospital from **December 21, 2017EC to March 20, 2017E.C**

study population

- All patients routine ICU and cards are available during the study period.

Inclusion criteria

- Patients who received routine SAM from **December 21, 2017EC to March 20, 2017E.C**

Exclusion criteria

- Patients who were admitted for ≤ 72 hours

Sampling technique

- A total of 19 medical records (client chart) of the last reporting quarter should be sampled for the audit. The individual client charts were withdrawn by systematic random sampling.

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.

RESULTS

The overall performance of the clinical audit for pediatric patients with severe acute malnutrition (SAM) was **64%**, indicating moderate adherence to established care standards **(figure 1).** While certain areas, such as patient identification (100%), diagnostic accuracy (100%), and core treatment protocols (87%), demonstrated strong compliance, significant gaps were identified in other critical aspects of care. For example, history-taking (85%) and physical examinations (85%) showed inconsistencies, particularly in documenting immunization and social history, as well as anthropometric measurements like head circumference and BMI. Investigations had the lowest performance (59%), with key tests such as HIV screening, chest X-rays, and renal function tests being underutilized. These findings suggest that while foundational elements of SAM management are being met, comprehensive and holistic patient assessments require improvement**(Table 1).**

Additionally, post-admission processes, such as monitoring (74%) and discharge care (86%), revealed variability in follow-up practices. The absence of multichart usage (0%) for monitoring and inconsistent nutritional counseling (74%) or appointment scheduling (68%) at discharge highlight systemic challenges in continuity of care. Provider documentation, though generally adequate (85%), also showed room for enhancement, particularly in discharge summaries and nurse signatures. The **64% overall performance** underscores the need for targeted interventions—such as staff training, standardized checklists, and better resource allocation—to bridge these gaps and ensure consistent, high-quality care for pediatric SAM patients across all stages of treatment**(Table 1).**

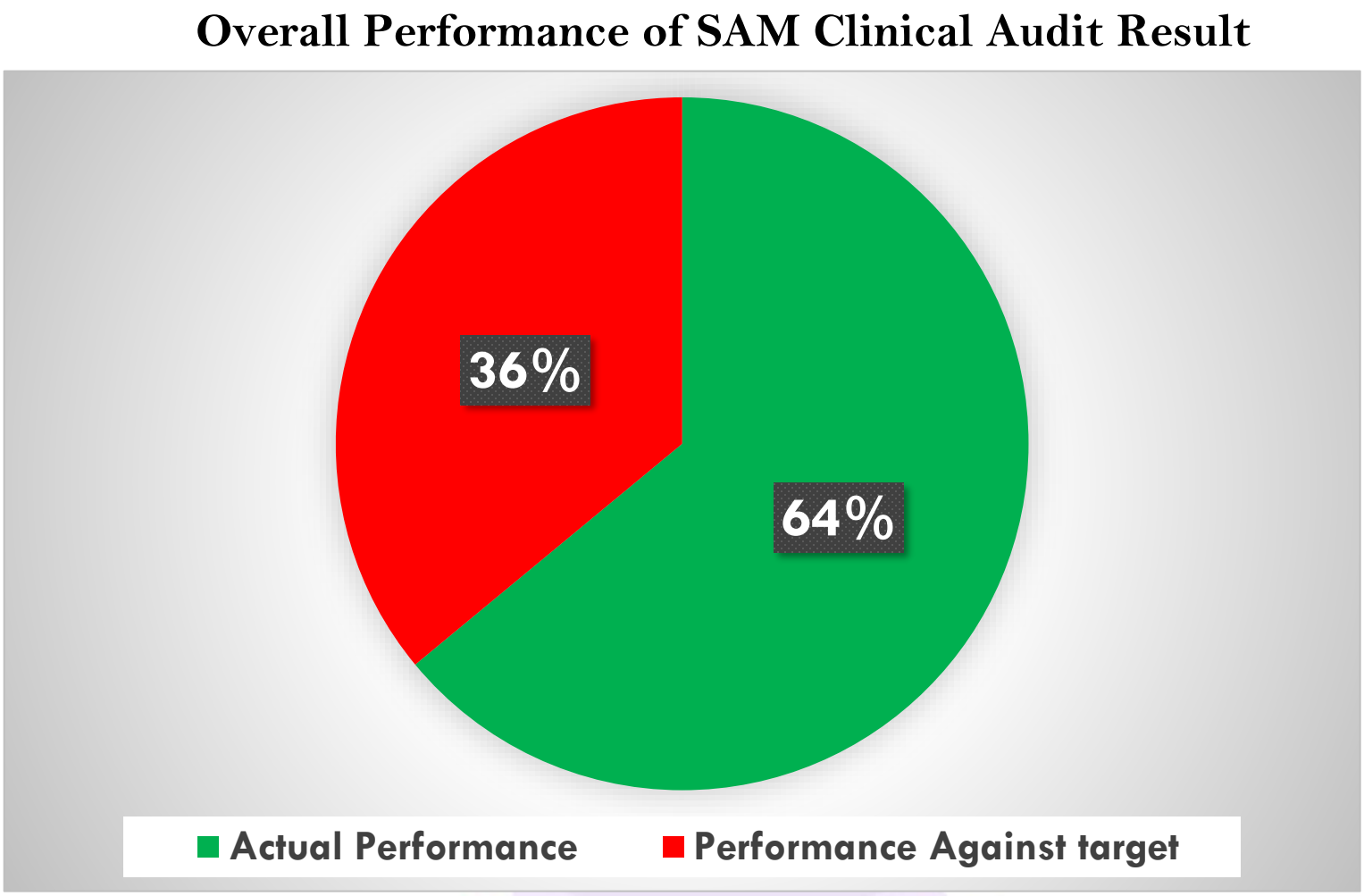


Figure 1: *Overall of Performance of SAM Clinical Audit, March 2017E.C*

Table 1: Overall of Performance of SAM Clinical Audit, March 2017E.C

S/N	Variables	Target (%)	Actual Performance (%)
1.	Identification Information	100	**100**
2.	History Taking	100	**85**
3.	Physical Examination	100	**85**
4.	Investigations	100	**59**
5.	Diagnosis	100	**100**
6.	Treatment	100	**87**
7.	Monitoring	100	**74**
8.	Discharge Care	100	**86**
9.	Provider Identification	100	**85**
10.	Clinical Improvement	100	**89**
	Total Percentage (%)	**100**	**64%**

- Compliance was 100% across all sub-criteria, including recording the patient's name, age, sex, date, and medical record number (MRN). This indicates excellent adherence to documentation standards for patient identification **(figure 2).**

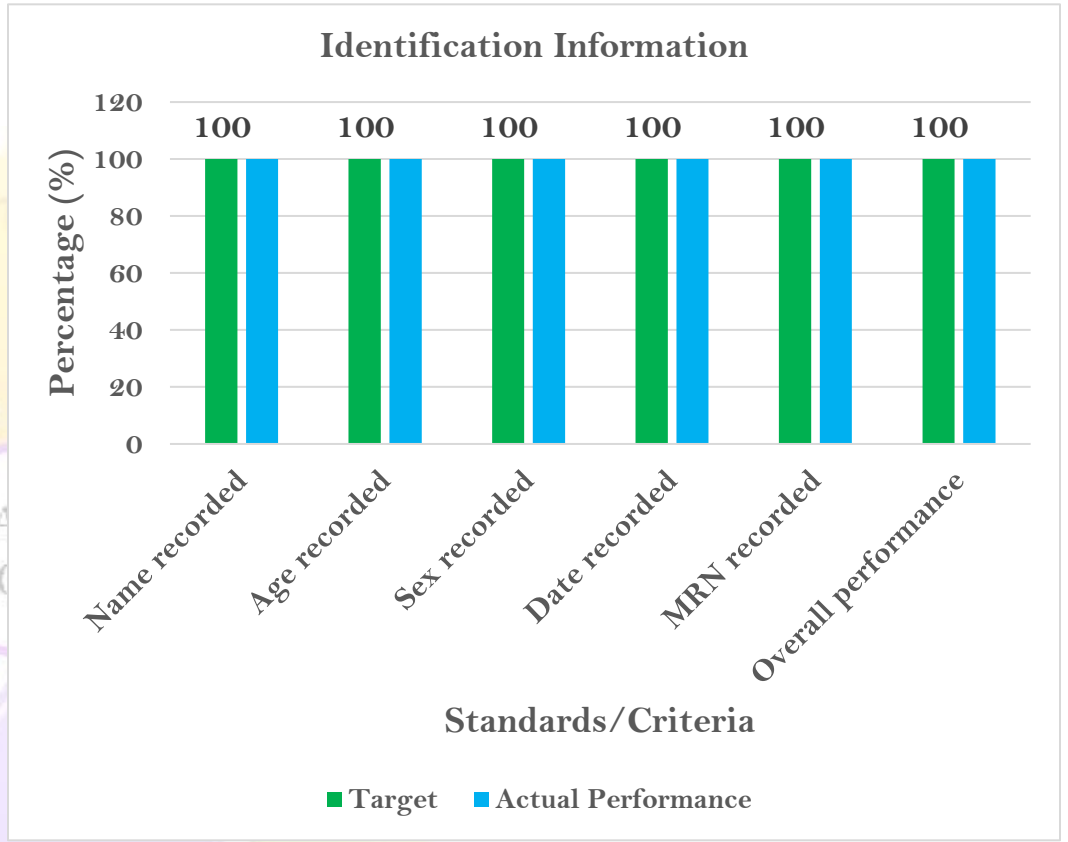


Figure 2: *Identification Information, March 2017E.C*

- Performance varied significantly, with nutritional history documented in 42% of cases, symptoms of complications in 58%, chronic illness history in 37%, immunization history in 11%, and social history in only 5%. The overall performance was 85%, highlighting gaps in comprehensive history-taking, particularly for immunization and social history **(figure 3).**

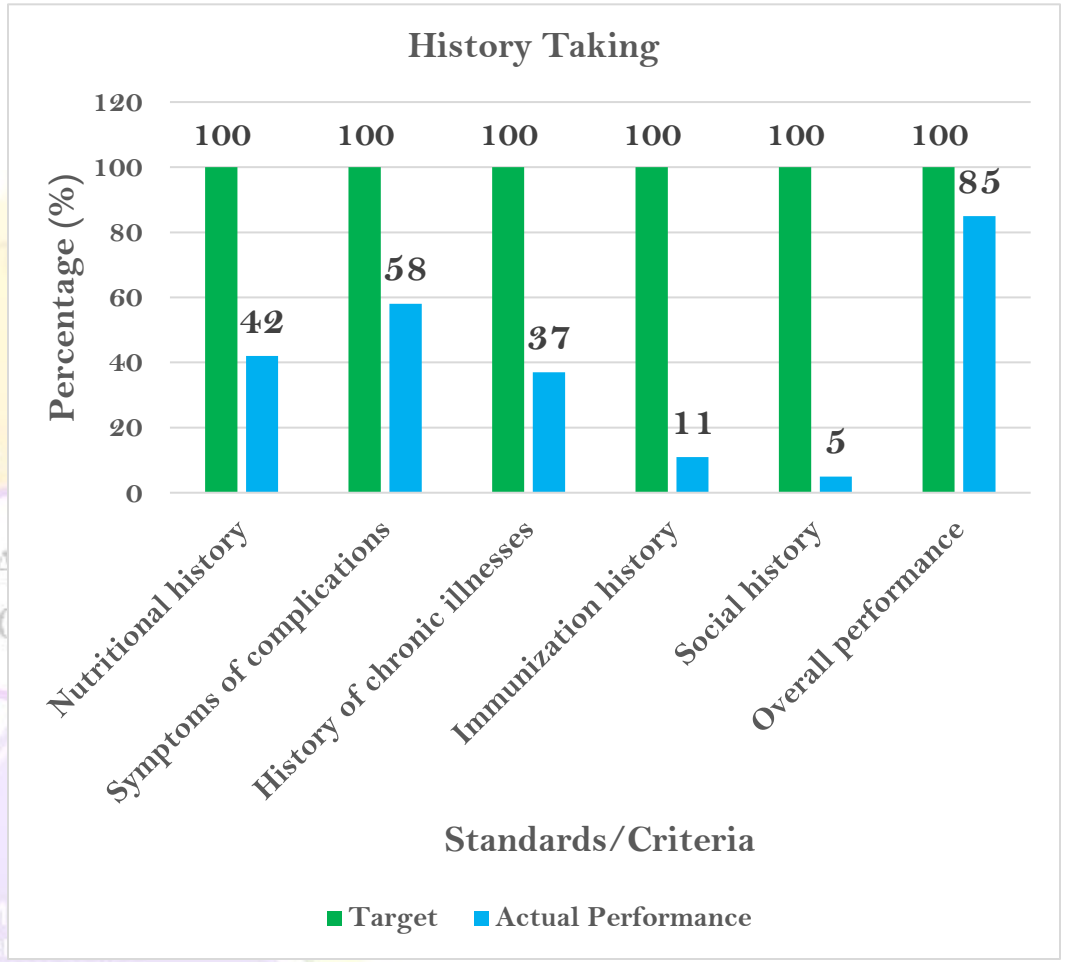


***Figure 3**:Appropriate History Taking, March 2017E.C*

- Vital signs and anthropometric measurements (e.g., weight for age, height for age) were consistently recorded (100%). However, head circumference for age (42%), BMI for age (53%), and MUAC for age (79%) showed room for improvement. Assessments for vitamin A deficiency (58%) and palmar pallor (42%) were less frequently performed. The **overall performance was 85% (Figure 4).**

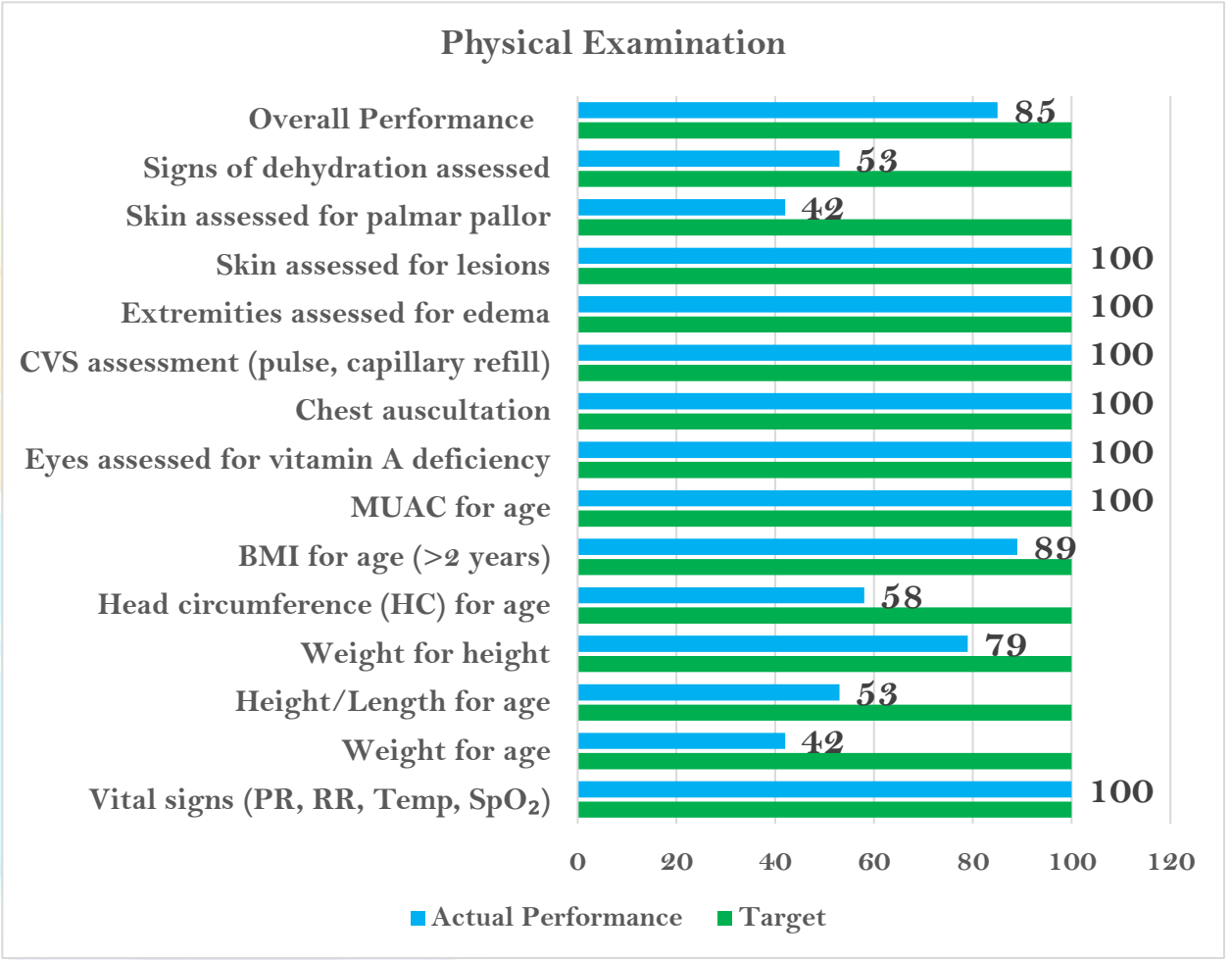


Figure 4: *Appropriate Physical Examination, March 2017E.C*

- While CBC and blood group testing were universally done (100%), other tests like urine analysis (63%), stool examination (63%), HIV testing (37%), chest X-rays (37%), and renal function tests (32%) had lower compliance. The overall performance was 59%, indicating inconsistent adherence to investigative protocols **(Figure 5).**

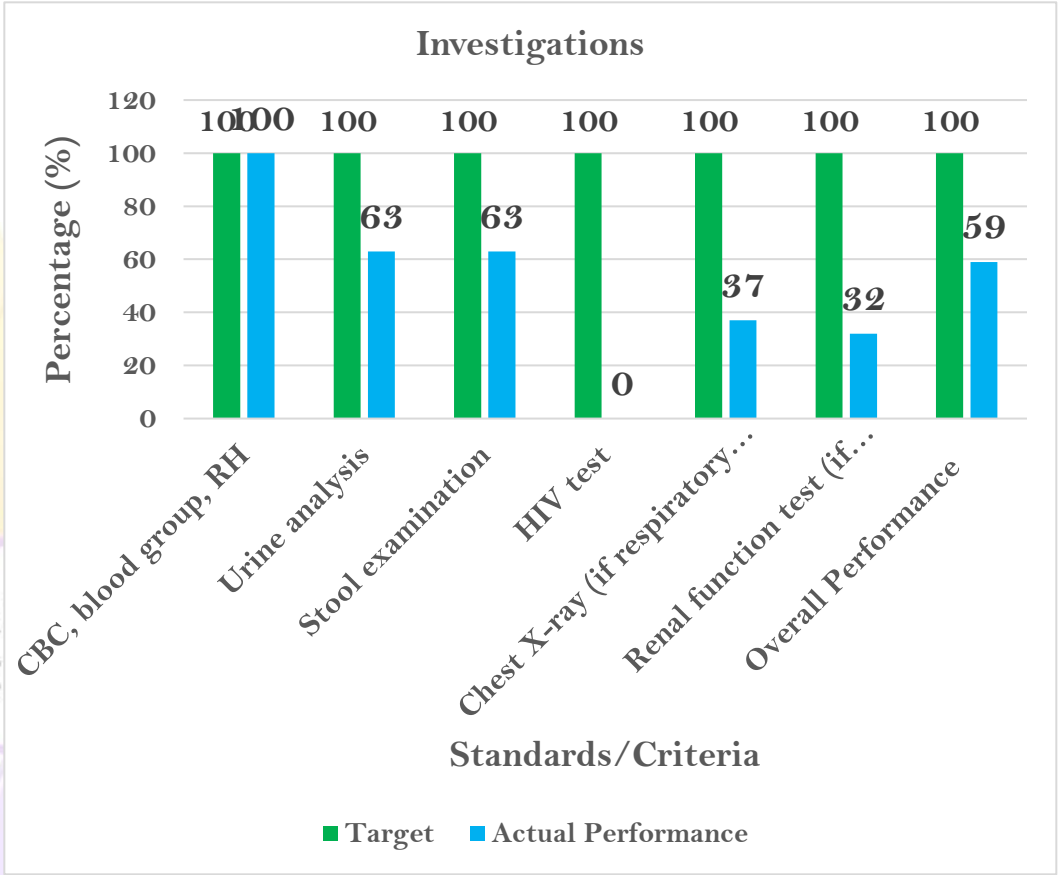


Figure 5: *Relevant Investigations, March 2017E.C*

- Both the degree of malnutrition and complications were correctly identified in 100% of cases, demonstrating strong diagnostic accuracy **(Figure 6).**

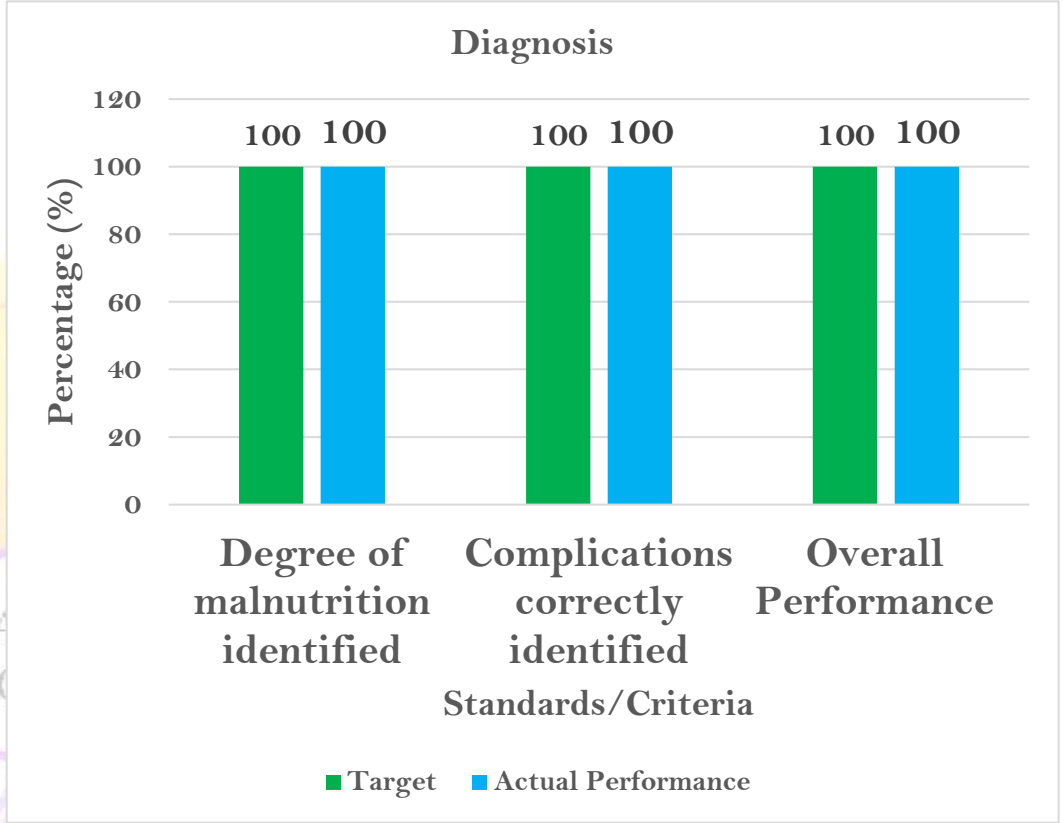


Figure 6: *Appropriate Diagnosis, March 2017E.C.*

Nutritional management and complication management were universally provided (100%). Antibiotics were given in 89% of cases, vitamin A in 42%, and blood transfusions in 58%. The overall performance was 87%, with opportunities to improve adherence to specific treatments like vitamin A supplementation **(Figure 7).**

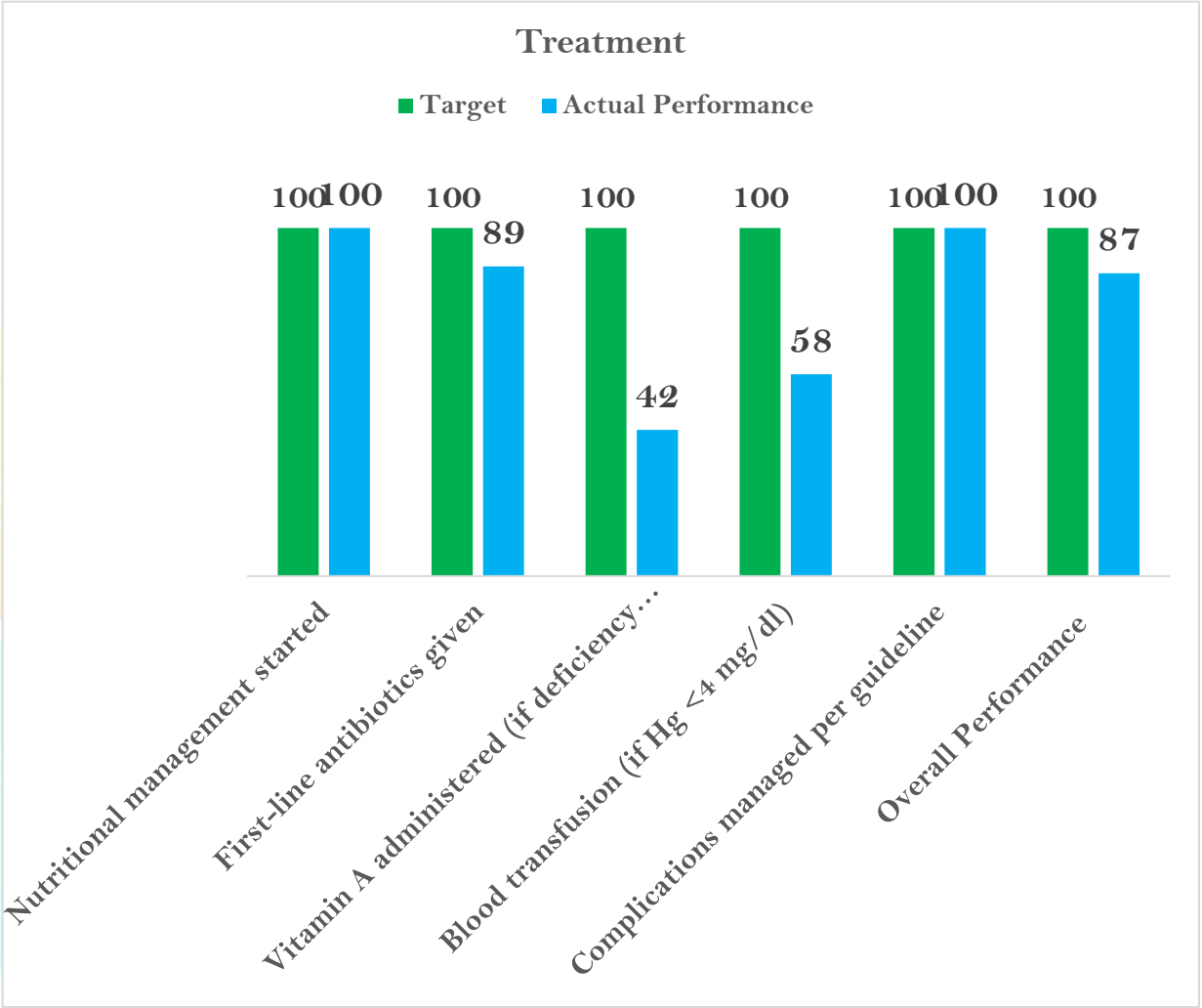


***Figure 7**: Appropriate Treatment, March 2017E.C.*

Follow-up using multicharts was absent (0%), but iron supplementation (95%), nutritional shifts (100%), and deworming (100%) were well-managed. The overall performance was 74%, emphasizing the need for better monitoring tools like multicharts (**Figure 8**).

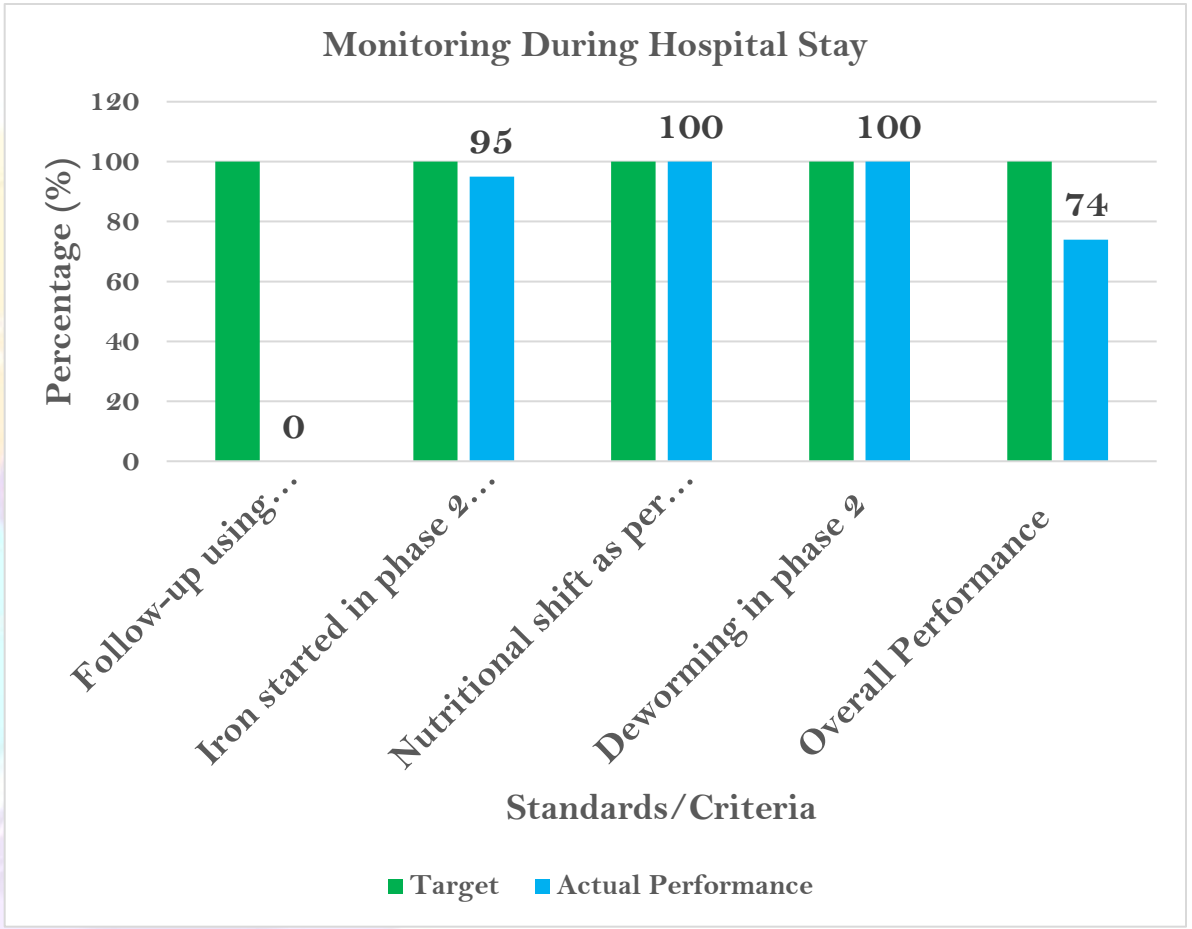


Figure 8: *Monitoring During Hospital Stay, March 2017E.C.*

Clinical improvement and RUTF supply were confirmed in 100% of cases, while discharge anthropometry (89%), nutritional counseling (74%), and appointment scheduling (68%) had lower compliance. The overall performance was 86%, suggesting improvements in post-discharge planning (**Figure 9**).

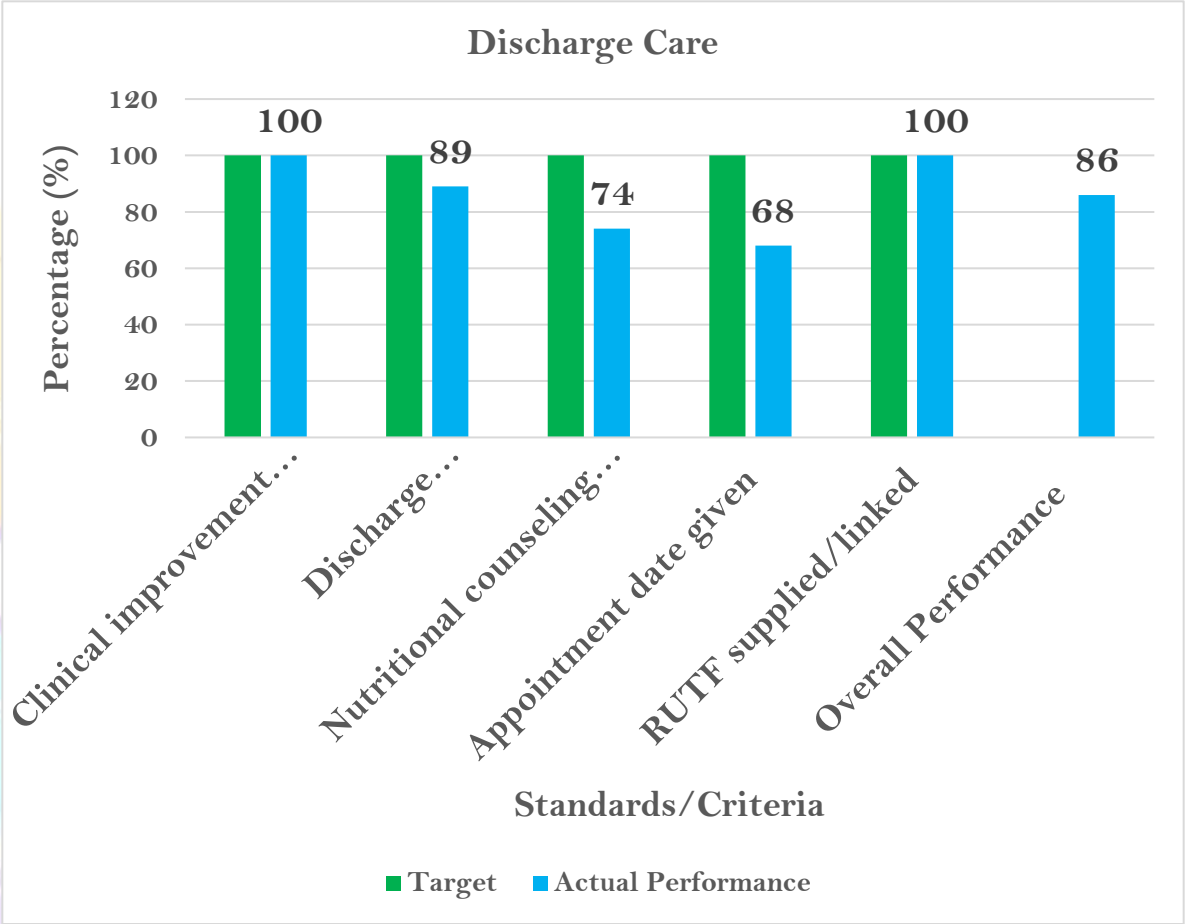


Figure 9: *Discharge Care, March 2017E.C.*

Physician identification on admission sheets was 100%, but compliance decreased for progress notes (95%), order sheets (79%), discharge summaries (63%), and nurse signatures on medication sheets (68%). The overall performance was 85%, indicating variability in documentation practices **(Figure 10).**

Clinical Improvement at Discharge

- Complications were resolved, and nutritional recovery was achieved in **89% of cases,** reflecting effective inpatient management for most patients.

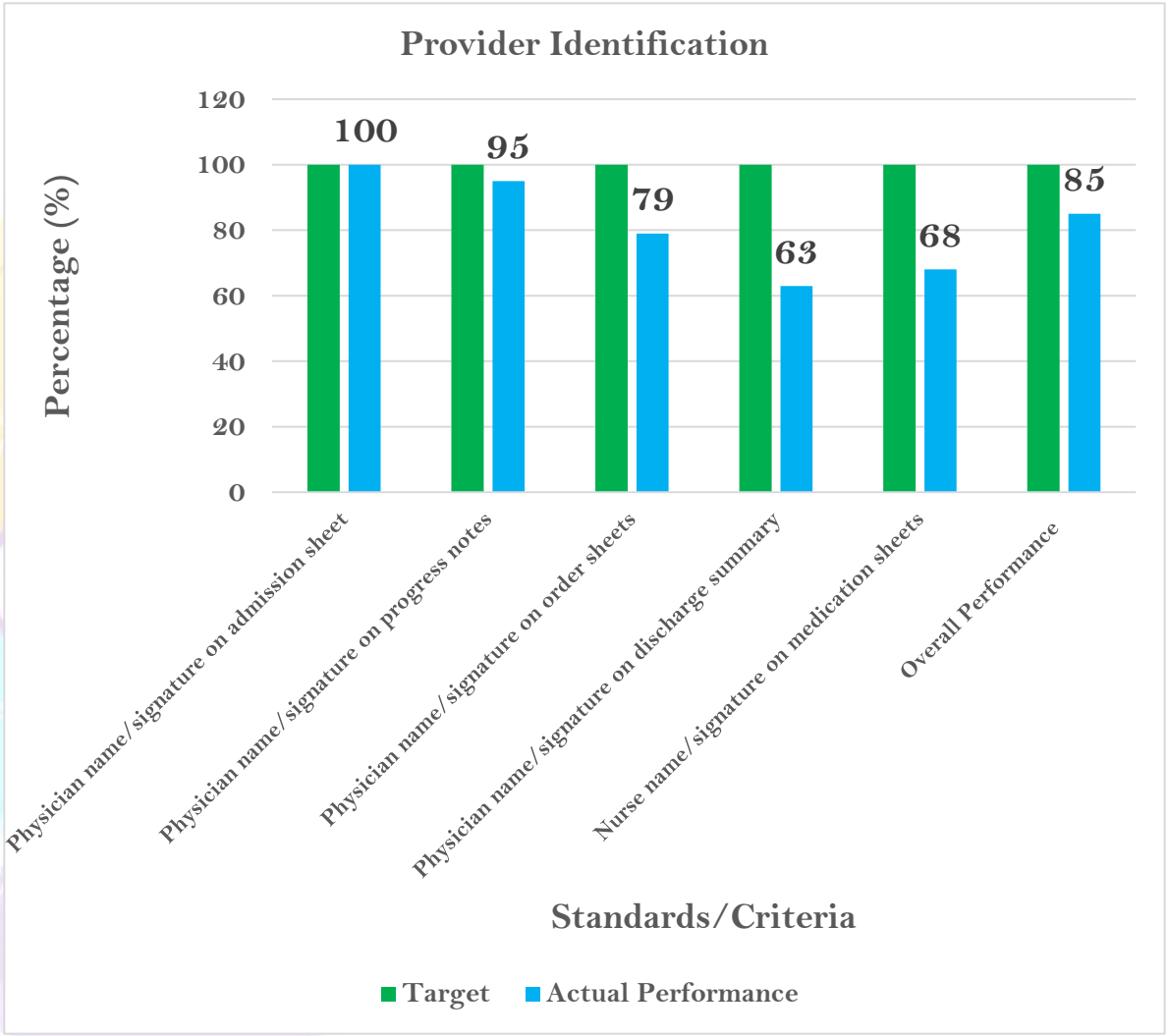


Figure 10: *Provider Identification, March 2017E.*

DISCUSSION

The clinical audit on the management of pediatric patients with severe acute malnutrition (SAM) revealed an **overall performance of 64%**, indicating partial adherence to recommended guidelines. While certain aspects of care, such as patient identification, diagnosis, and core treatment protocols, demonstrated strong compliance, significant gaps were identified in other critical areas. These findings highlight both strengths and weaknesses in the current system, providing valuable insights for quality improvement.

One of the key strengths was the **100% compliance in patient identification and diagnostic accuracy**, ensuring that all children admitted with SAM were correctly recognized and assessed. Additionally, essential treatments, including nutritional management (100%) and complication management (100%), were consistently provided, reflecting adherence to life-saving interventions. However, the audit uncovered concerning deficiencies in **history-taking, investigations, and discharge planning**. For instance, immunization and social histories were documented in only **11% and 5% of cases**, respectively, suggesting missed opportunities for identifying underlying risk factors. Similarly, critical investigations like **HIV testing (37%) and renal function tests (32%)** were underperformed, potentially delaying the detection of comorbidities.

The **lack of multichart usage (0%)** for monitoring and inconsistent **discharge counseling (74%)** further indicate systemic challenges in ensuring continuity of care. These gaps may contribute to poor follow-up and relapse risks post-discharge. The **64% overall performance** suggests that while basic SAM management is functional, there is a pressing need for **structured interventions**, such as standardized documentation tools, staff training, and strengthened referral systems, to enhance comprehensive care. Addressing these weaknesses will be crucial in improving outcomes for pediatric SAM patients and achieving full compliance with clinical guidelines.

RECOMMENDATIONS

- Strengthen Comprehensive History-Taking
- Improve Adherence to Investigations
- Enhance Hospital Monitoring
- Standardize Discharge & Follow-Up
- Improve Documentation Practices

Table 2: *Improvement plan to improve clinical care of SAM, March 2017E.C*

Recommendation	Action Steps	Responsible body	Timeline
Strengthen Comprehensive History-Taking	- Develop & introduce a standardized history-taking checklist. - Train staff on holistic assessment protocols.	Medical Director / Nursing Team	1-2 months
Improve Adherence to Investigations	- Create mandatory lab/test protocols for SAM cases. - Ensure lab supplies are stocked and functional.	Lab Coordinator / Pharmacy	1-3 months
Enhance Hospital Monitoring	- Implement multichart tracking for all SAM patients. - Assign a monitoring team for phase transitions.	Pediatric Ward Supervisor	2-4 months
Standardize Discharge & Follow-Up	- Develop discharge packets (counseling materials, RUTF, appointments). - Establish follow-up tracking system.	Social Worker / Outpatient Team	3-6 months
Improve Documentation Practices	- Audit records monthly for missing signatures. - Provide feedback to staff.	Quality Assurance Team	Ongoing

Table 3: Implementation Status of previous clinical audit cycle Improvement Plan March 2017E.C

Recommendation	Implementation Status	Evidence of Progress	Remaining Gaps
Enhance Adherence to SAM Protocol	**Partially Implemented**	- Training sessions conducted for staff. - Simplified guidelines distributed.	- Inconsistent application of protocols (e.g., history-taking, investigations).
Improve Documentation Practices	**Moderate Progress**	- Standardized tools developed. - Monthly audits initiated.	- Discharge summaries (63%) and nurse signatures (68%) still suboptimal.
Strengthen Capacity Building	**Ongoing**	- Refresher trainings held. - Mentorship system piloted.	- Limited staff retention and participation in trainings.
Increase Monitoring & Evaluation	**Minimal Progress**	- Basic M&E tools introduced.	- Multichart usage remains at **0%**; no KPIs tracked systematically.
Equip the Facility Adequately	**Partially Implemented**	- Some supplies (RUTF, lab kits) procured.	- Stockouts of HIV test kits, renal function reagents persist.
Allocate Adequate Staff	**Not Addressed**	- No new staff hired or reallocated.	- Staff shortages hinder compliance (e.g., missed immunizations, social histories).
Foster Multidisciplinary Collaboration	**Initiated**	- Interdepartmental meetings held quarterly.	- Limited engagement from nutrition/social work teams.

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