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 *3*

Deder, Oromia

June 2017E.C

Pediatric Ward Case Team Clinical Audit/QI members

S/N	Name	Responsibility	Remarks
1.	Dr. Alamudin A/Yasin	**Team leader**	
2.	Mohamed Aliyi	Pedi Ward Head	
3.	Calaa Abdusamed	Member	
4.	Sabit Mohamed	Member	
5.	Nujoma Dine	Member	
6.	Mohamed Jafer	Member	
7.	Taju Mohamed	Member	
8	Ibsa Ibrahim	Member	
9	Amir Adem	Member	

TABLE OF CONTENTS

Lists of Figures and Tables

ABSTRACT

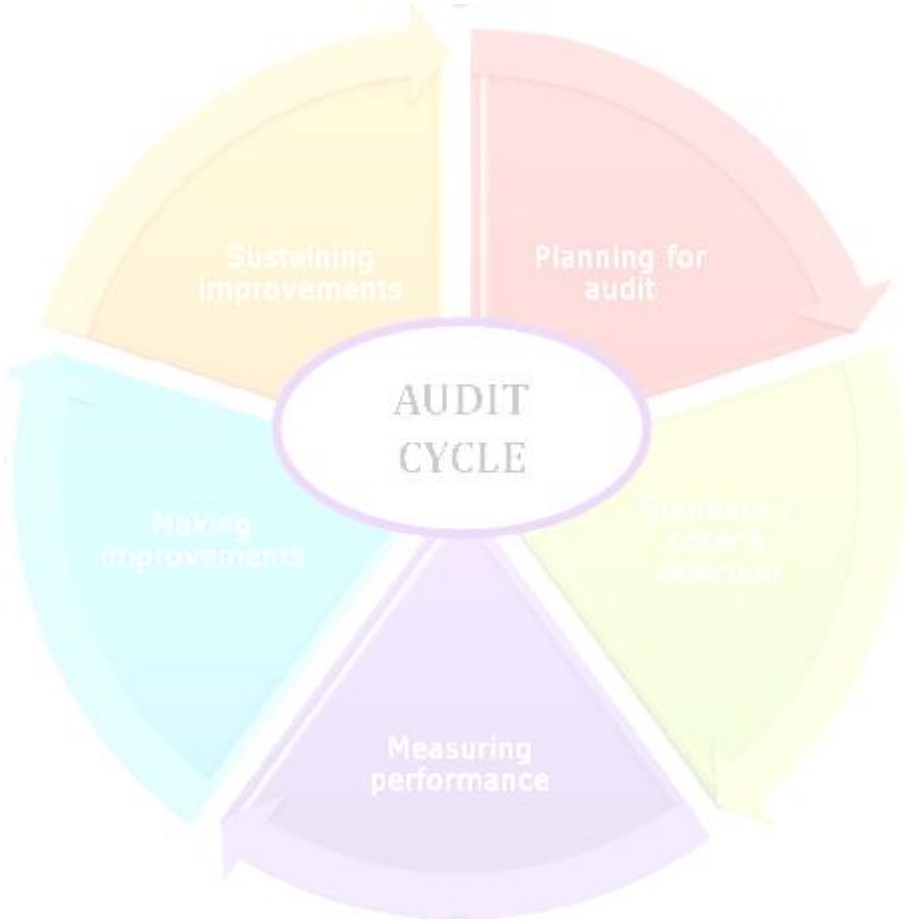
Introduction: Severe Acute Malnutrition (SAM) remains a critical global health challenge, particularly in low-resource settings like Ethiopia, where it contributes significantly to under-five mortality. In Oromia, systemic barriers—including food insecurity, limited healthcare access, and climate shocks—exacerbate SAM prevalence. This re-audit evaluated the quality of clinical care for pediatric SAM patients at Deder General Hospital to identify gaps and drive improvements.

Objective: To enhance the quality of clinical care for pediatric SAM patients.

Methodology: A retrospective cross-sectional study was conducted (March 21–June 20, 2017) using systematic random sampling of 19 medical records. Data were extracted using a national audit tool, verified manually, and analyzed via SPSS version 25. Compliance was measured against 100% targets across 10 care domains.

Result: The SAM clinical audit achieved **95%** overall compliance (target: 100%), with perfect scores in identification, diagnosis, treatment, provider documentation, and clinical outcomes (100% each). Deficits emerged in history-taking (91%), notably nutritional (78.9%) and immunization records (73.7%), alongside monitoring gaps (88%) due to absent multichart usage (0%). Discharge planning (93%) showed weaknesses in counseling (74%) and appointment scheduling (68%), despite 100% nutritional recovery and complication resolution in all 19 cases.

Conclusion: The audit demonstrates strong acute care and recovery outcomes (100% resolution of complications) but highlights systemic weaknesses in preventive and continuity care. Urgent interventions—standardized tools (e.g., multicharts), staff training, and improved discharge protocols—are needed to address documentation lapses and prevent relapse. These steps are vital to breaking the cycle of malnutrition in resource-constrained settings.


Sustaining improvements
Planning for audit
AUDIT CYCLE
Making improvements
Measuring performance

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.

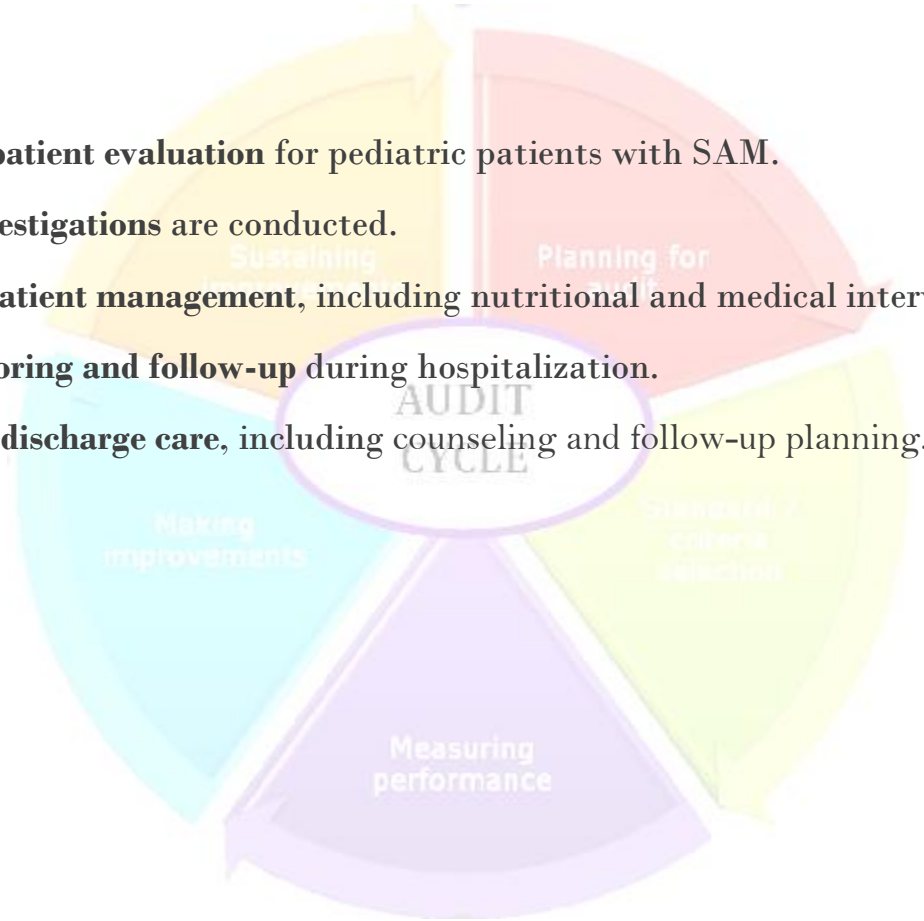
This clinical audit was conducted to evaluate SAM management protocols against these sobering realities. By assessing care quality across identification, treatment, and follow-up processes, we aim to identify critical gaps in service delivery. The findings will inform strategies to strengthen pediatric 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 **March 21, 2017EC to June 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 **March 21, 2017EC to June 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 SAM clinical audit achieved an overall compliance rate of **95%** against a 100% target, reflecting significant improvements in care quality **(Figure 1).** Key strengths included perfect adherence (100%) in patient identification, diagnosis, treatment, provider documentation, and clinical outcomes. All 19 audited charts confirmed resolved complications and nutritional recovery before discharge. Physical examination (98%) and investigations (93%) also neared full compliance, with vital signs, systemic assessments, urinalysis, and stool exams consistently performed **(Table 1).**

Critical gaps emerged in history-taking (91%), monitoring (88%), and discharge planning (93%). Nutritional history (78.9%) and immunization records (73.7%) were frequently incomplete, while multichart usage for monitoring was entirely absent (0%). Discharge processes showed weaknesses: nutritional counseling (74%), appointment scheduling (68%), and anthropometric documentation (89%) fell below targets. Iron supplementation in Phase 2 (95%) was strong but not universal, highlighting inconsistent protocol adherence **(Table 1).**

The audit revealed systemic barriers affecting SAM management. Investigations like HIV testing (89.5%), renal function tests (78.9%), and chest X-rays (68.4% when indicated) lacked consistency. Discharge planning remained suboptimal despite high RUTF provision (100%). These gaps underscore the need for standardized tools (e.g., multicharts), better resource allocation, and staff training to address documentation lapses and ensure holistic care **(Table 1)**.

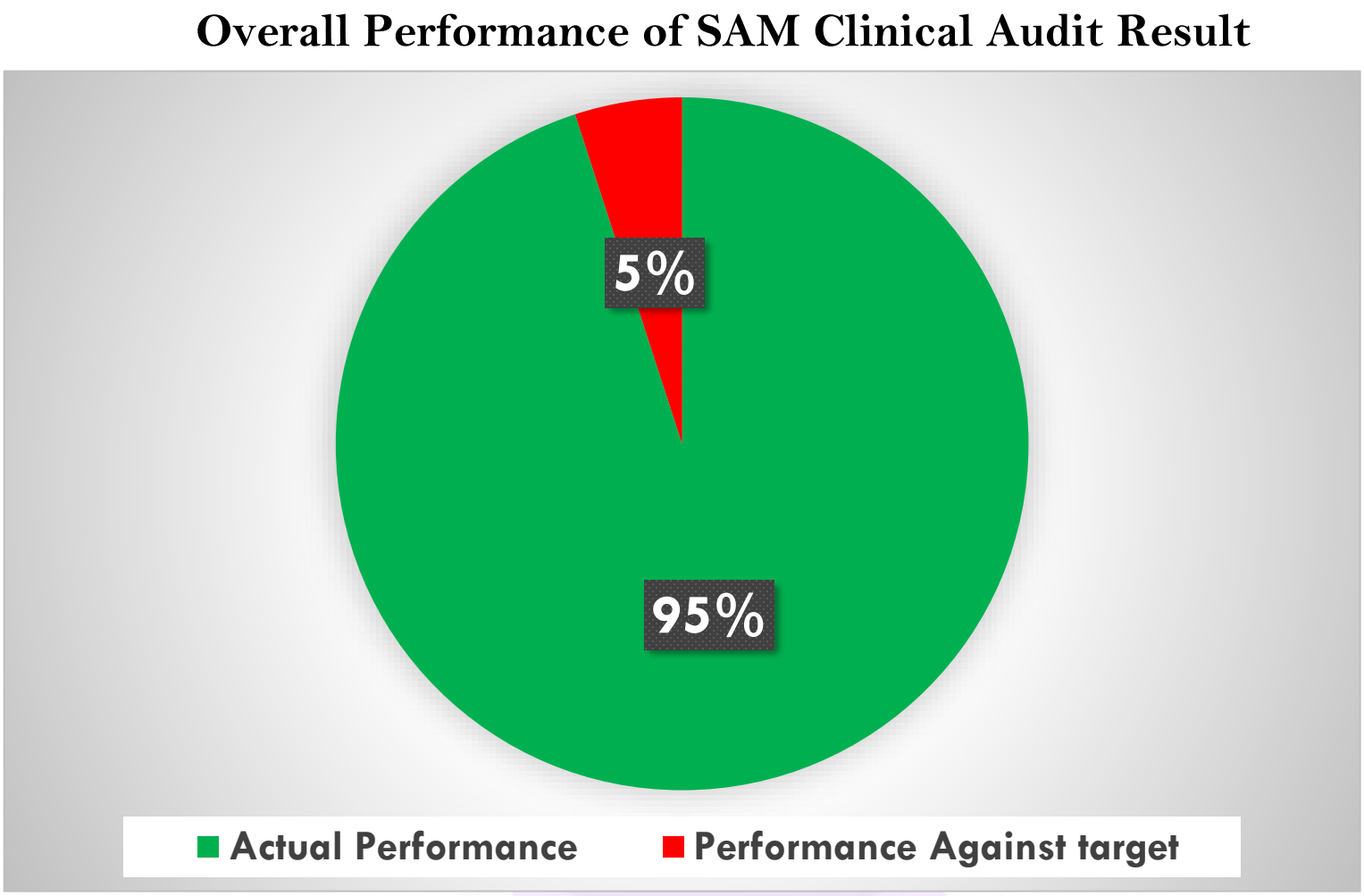


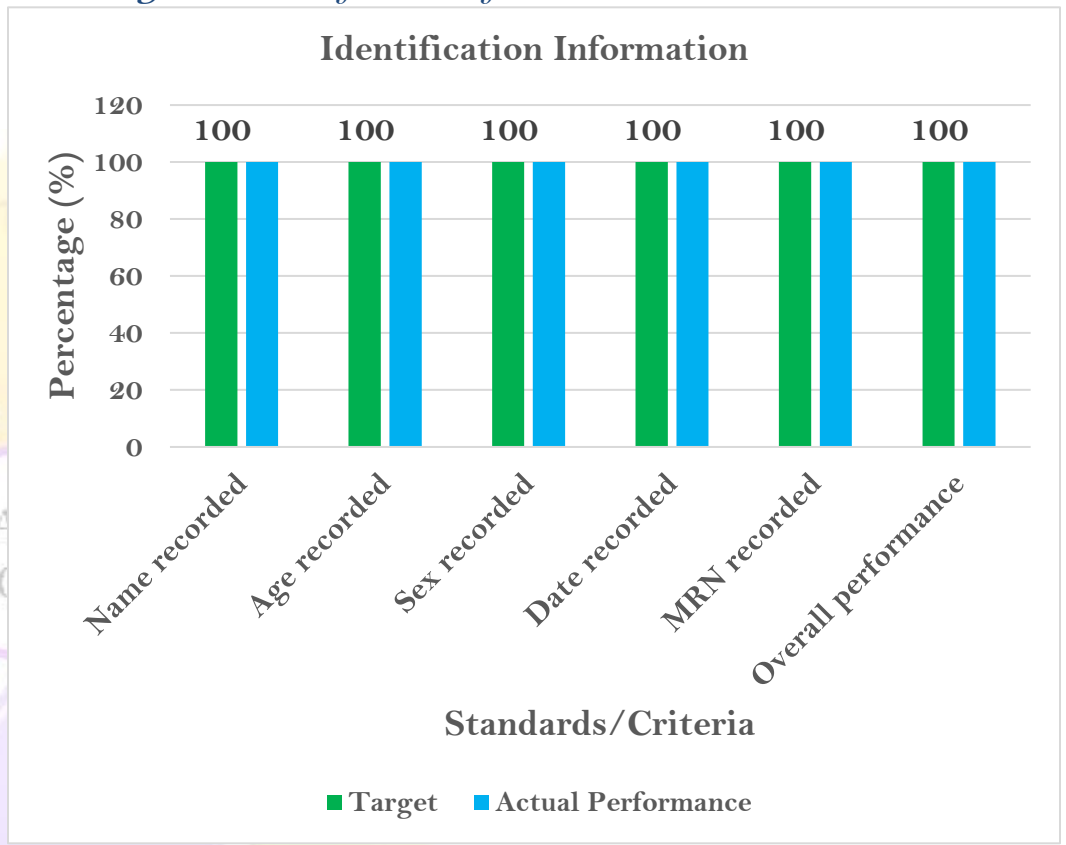
Figure 1: *Overall of Performance of SAM Clinical Audit, June 2017E.C*

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

S/N	Variables	Target (%)	Actual Performance (%)
1.	Identification Information	100	100
2.	History Taking	100	91
3.	Physical Examination	100	98
4.	Investigations	100	93
5.	Diagnosis	100	100
6.	Treatment	100	100
7.	Monitoring	100	88
8.	Discharge Care	100	93
9.	Provider Identification	100	100
10.	Clinical Improvement	100	100
	Total Percentage (%)	**100**	**95**

- All 19 charts (100%) fully complied with patient identification requirements. Name, age, sex, date, and MRN were consistently documented across all records, meeting the 100% target **(figure 2).**

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



- Compliance reached 90.5% (target: 100%). Nutritional history (78.9%) and immunization history (73.7%) were frequently incomplete. However, symptom assessment (100%), chronic illness history (100%), and social history (100%) were consistently documented **(figure 3).**

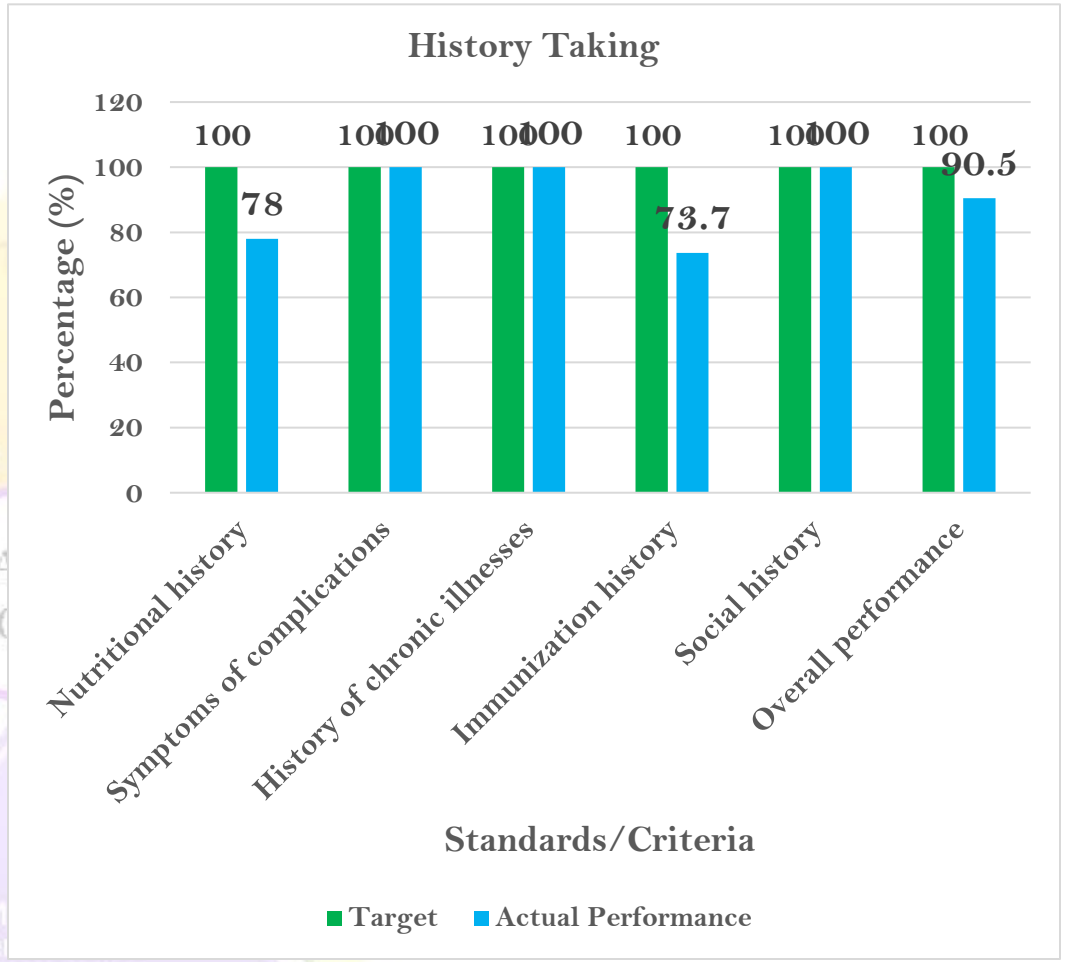


***Figure 3**:Appropriate History Taking, June 2017E.C*

- 97.7% compliance (target: 100%) was achieved. Anthropometric measurements (94.7%) and dehydration assessment (84.2%) showed minor gaps, but vital signs, eye/skin exams, and systemic assessments (CVS, edema) were flawless (100%) **(Figure 4).**

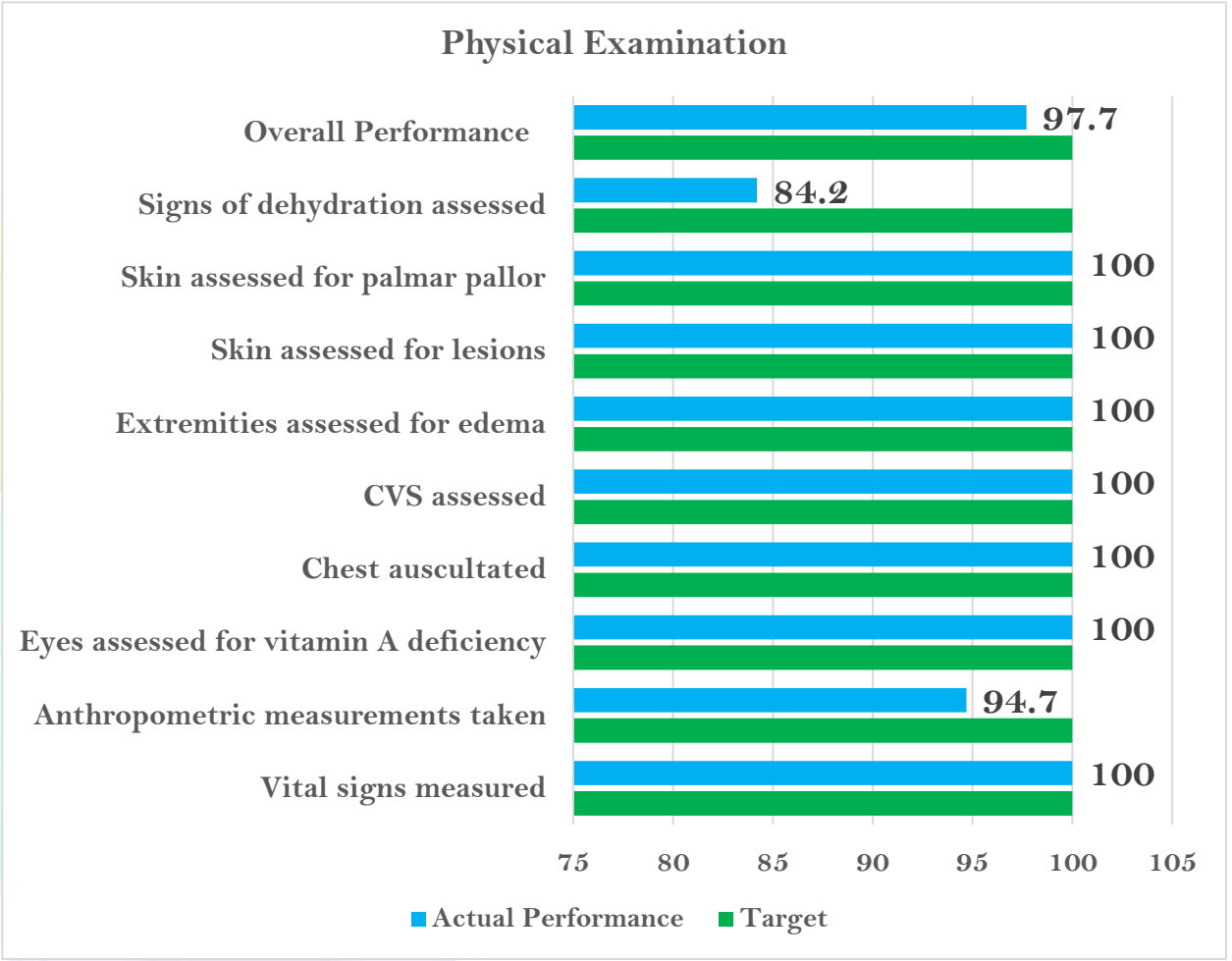


Figure 4: *Appropriate Physical Examination, June 2017E.C*

- Performance exceeded the 90% target at 92.8%. CBC/blood group (94.7%), HIV testing (89.5%), and renal function tests (78.9%) had room for improvement. Urinalysis (100%) and stool exams (100%) were consistently performed **(Figure 5).**

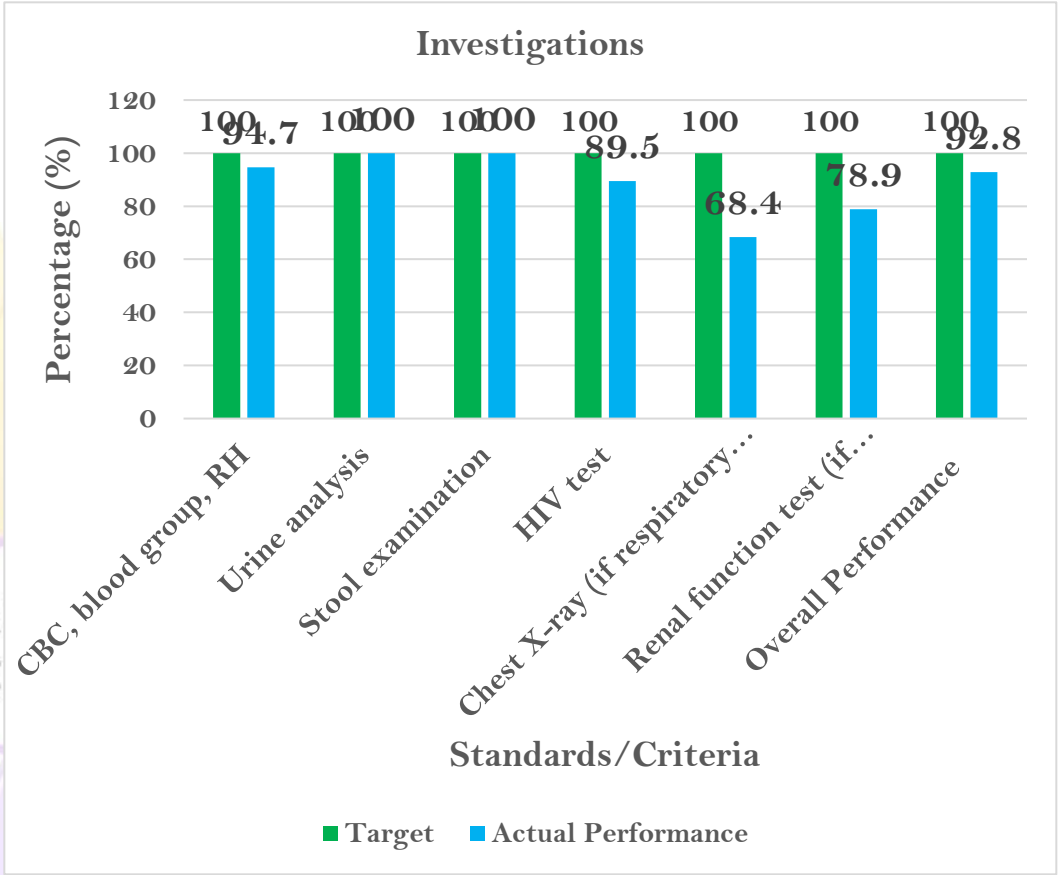


Figure 5: *Relevant Investigations, June 2017E.C*

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

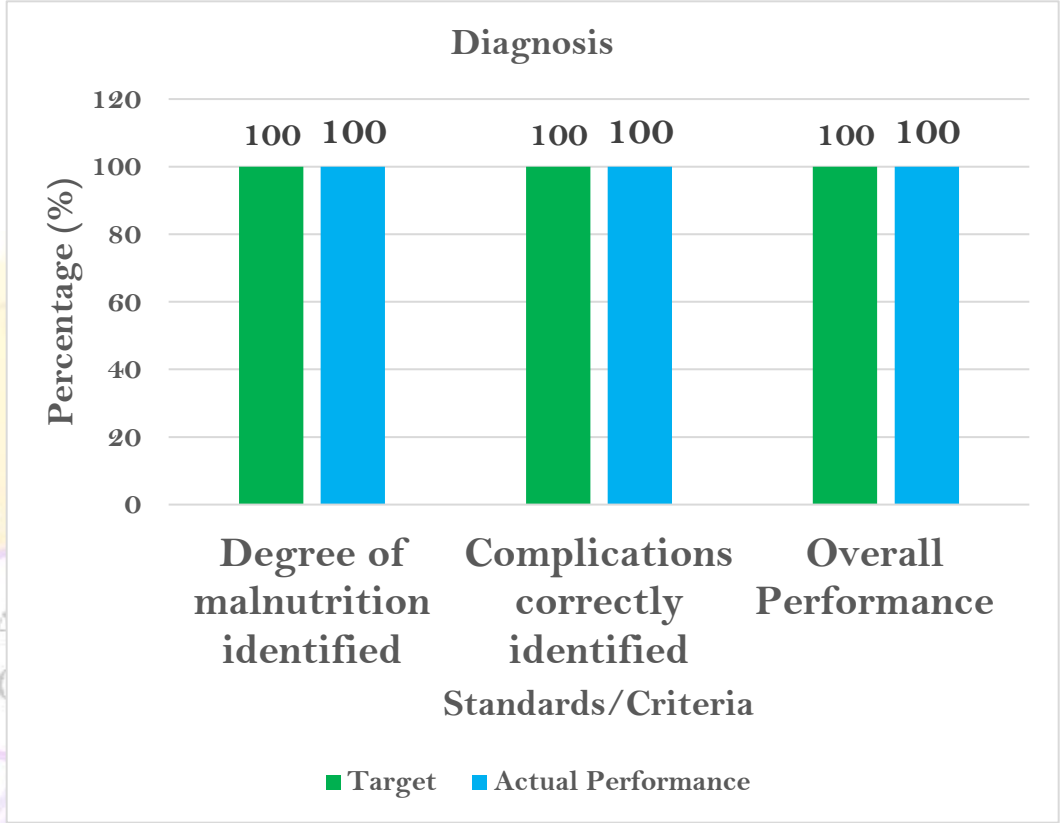


Figure 6: *Appropriate Diagnosis, June 2017E.C.*

All charts (100%) met the target. Malnutrition severity and complications (e.g., infections, dehydration) were correctly identified in every case. **(Figure 7).**

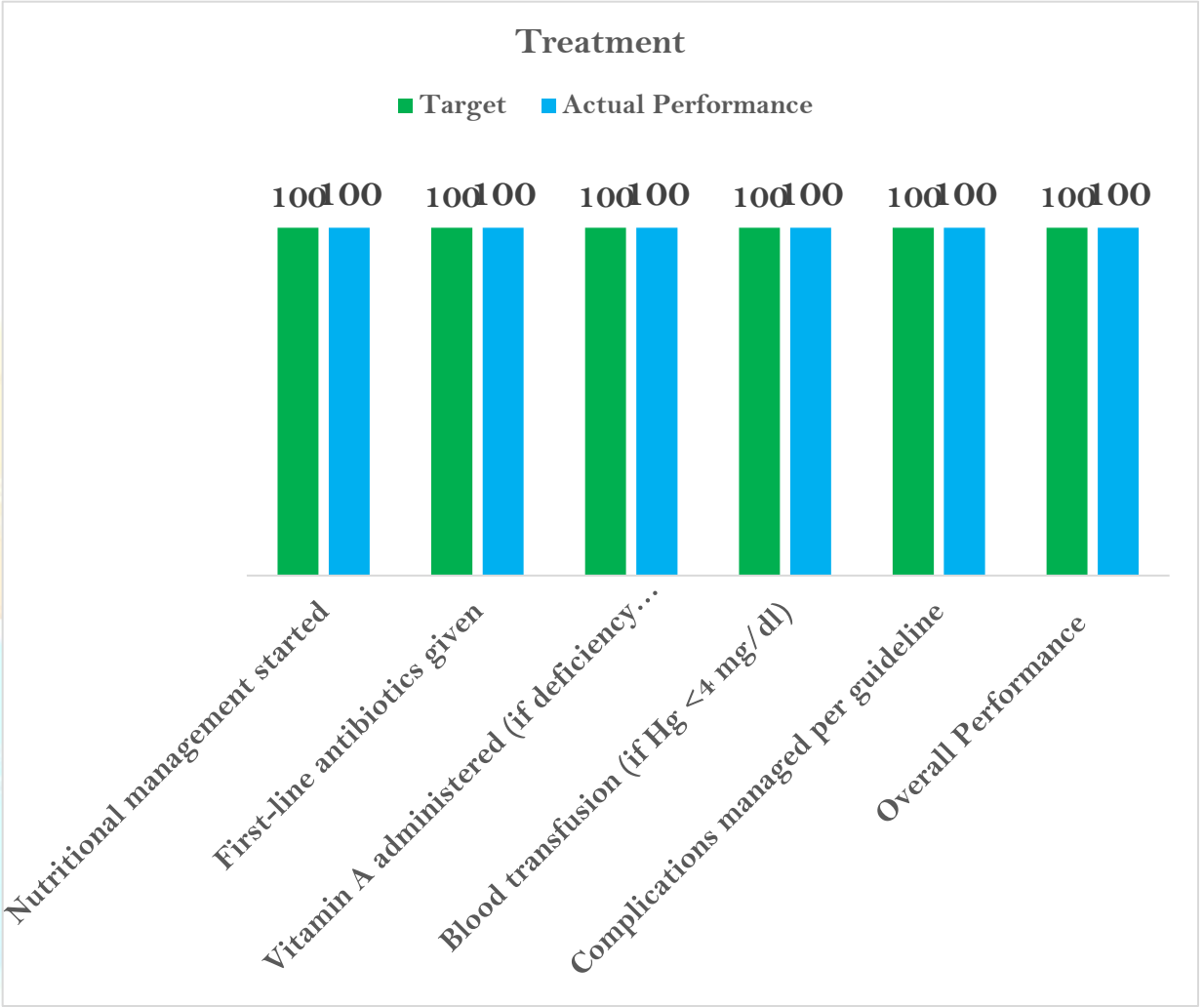


***Figure 7**: Appropriate Treatment, June 2017E.C.*

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**).

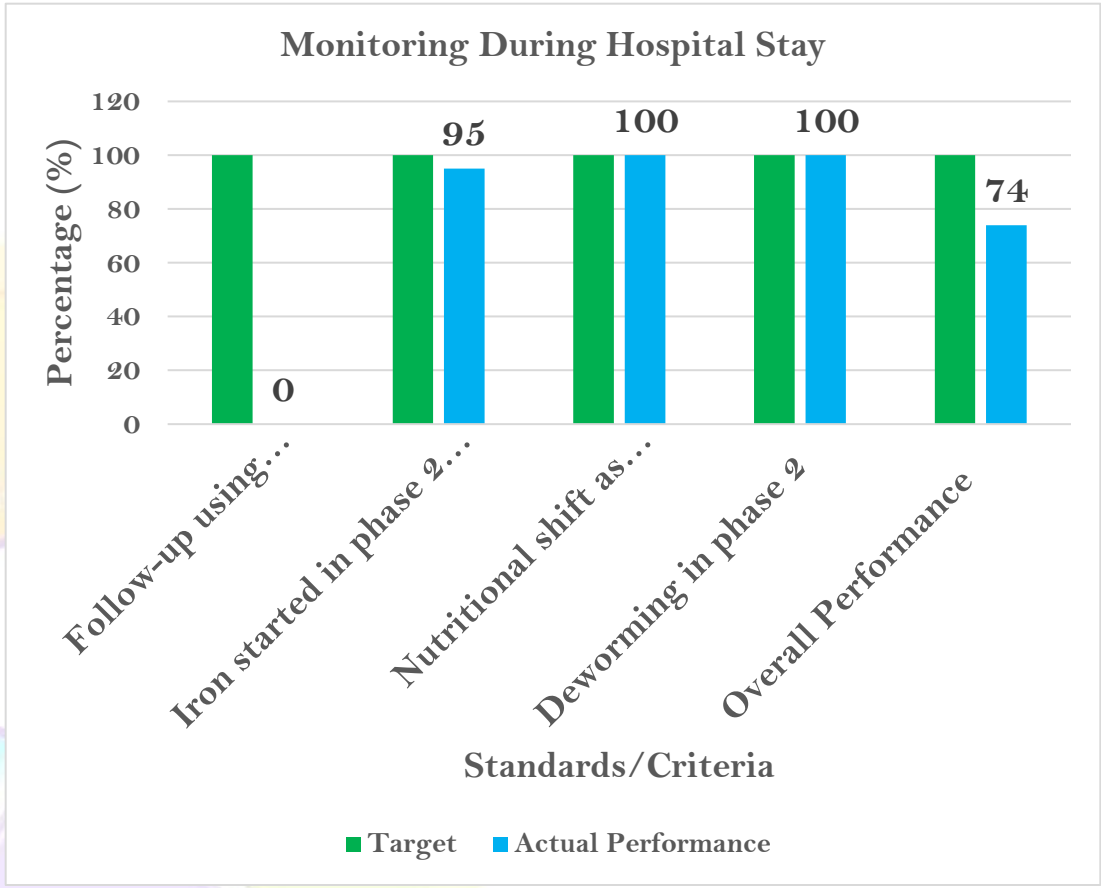


Figure 8: *Monitoring During Hospital Stay, June 2017E.C.*

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**).

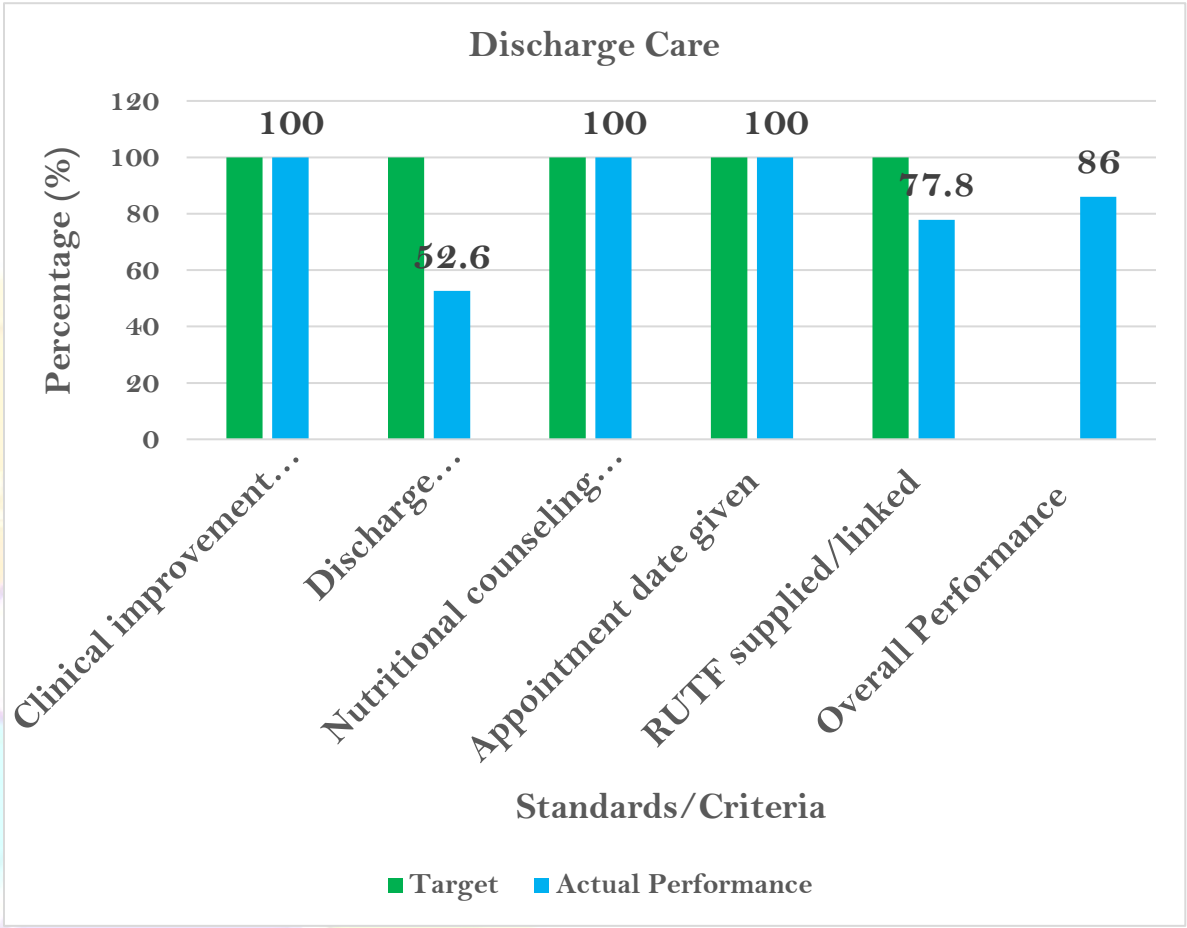


Figure 9: *Discharge Care, June 2017E.C*

All 19 charts (100%) included complete provider names/signatures on admission sheets, progress notes, orders, discharge summaries, and medication records **(Figure 10).**

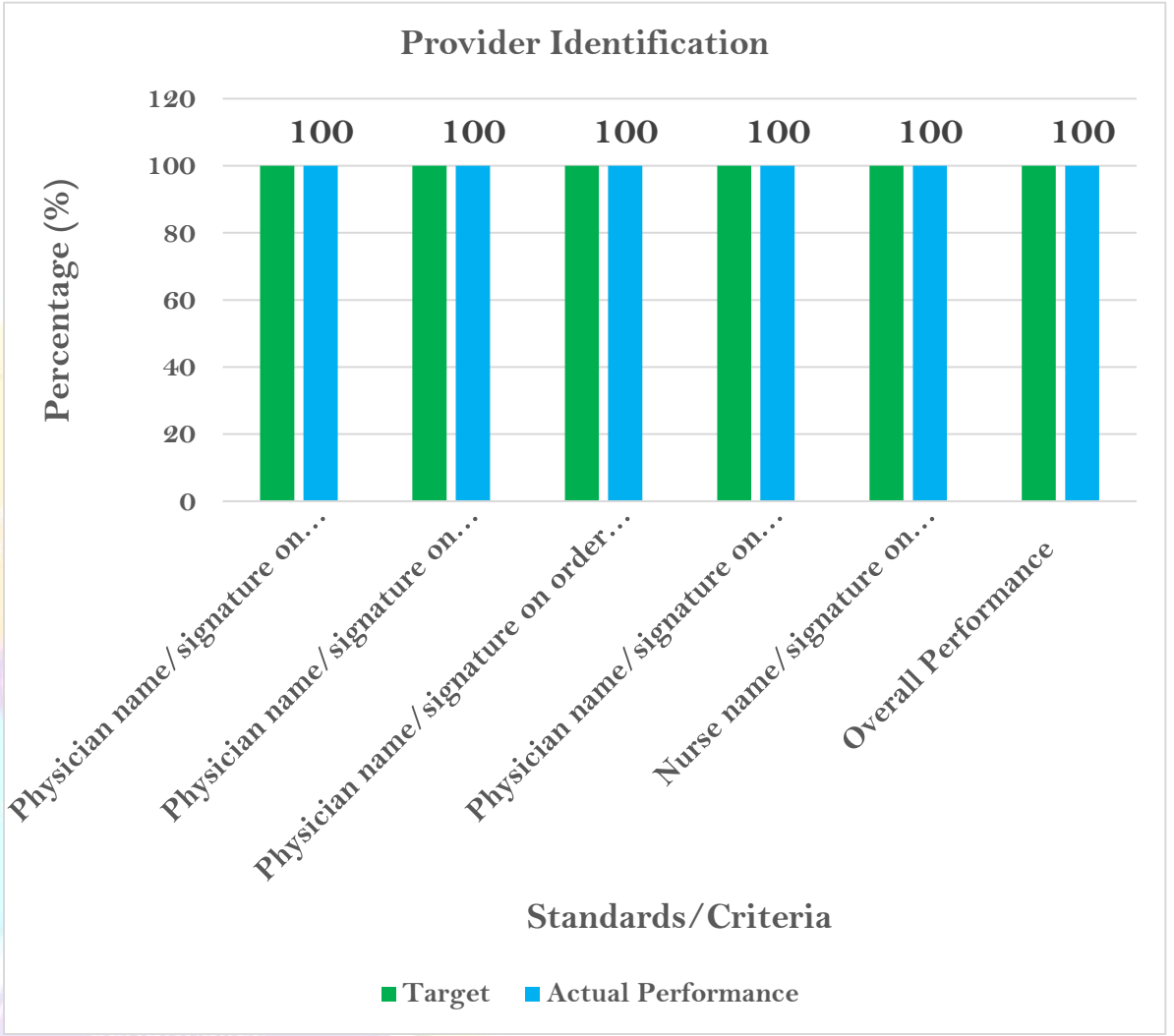


Figure 10: *Provider Identification, June 2017E.C*

Trends of SAM clinical audit performance

Our journey to improve the management of Severe Acute Malnutrition (SAM) began with a challenging start—just 30% compliance in the first quarter. While we made promising strides by reaching 46% in Q2, our progress stalled in the third quarter, holding steady at 46%. This plateau reminded us that sustainable improvement in malnutrition care doesn't happen overnight. Yet, rather than discouraging us, this turning point fueled deeper reflection and a renewed commitment from the team to address the gaps more effectively **(Figure 11).**

Then came a breakthrough. In the final stretch of the year, we saw a dramatic shift—jumping from 46% to 94% in Q3 and ending the year at an outstanding 96% in Q4. This marked a total improvement of 66 percentage points from where we began. More than numbers, this turnaround is a testament to the determination, teamwork, and resilience of those on the frontlines. Together, we strengthened our approach to SAM care, bringing reliable, high-quality treatment to the children who need it most **(Figure 11).**

Looking at the data as a whole, the trend is clear and inspiring—each quarter outperformed the one before. The most striking progress came between Q3 and Q4, where compliance surged by 11 percentage points, from 87% to 98%. This steady rise reflects not only the team's hard work but also the successful integration of quality improvement practices and adherence to clinical guidelines. By year's end, we were nearing perfect compliance—proof that transformation is possible when commitment meets action **(Figure 11).**

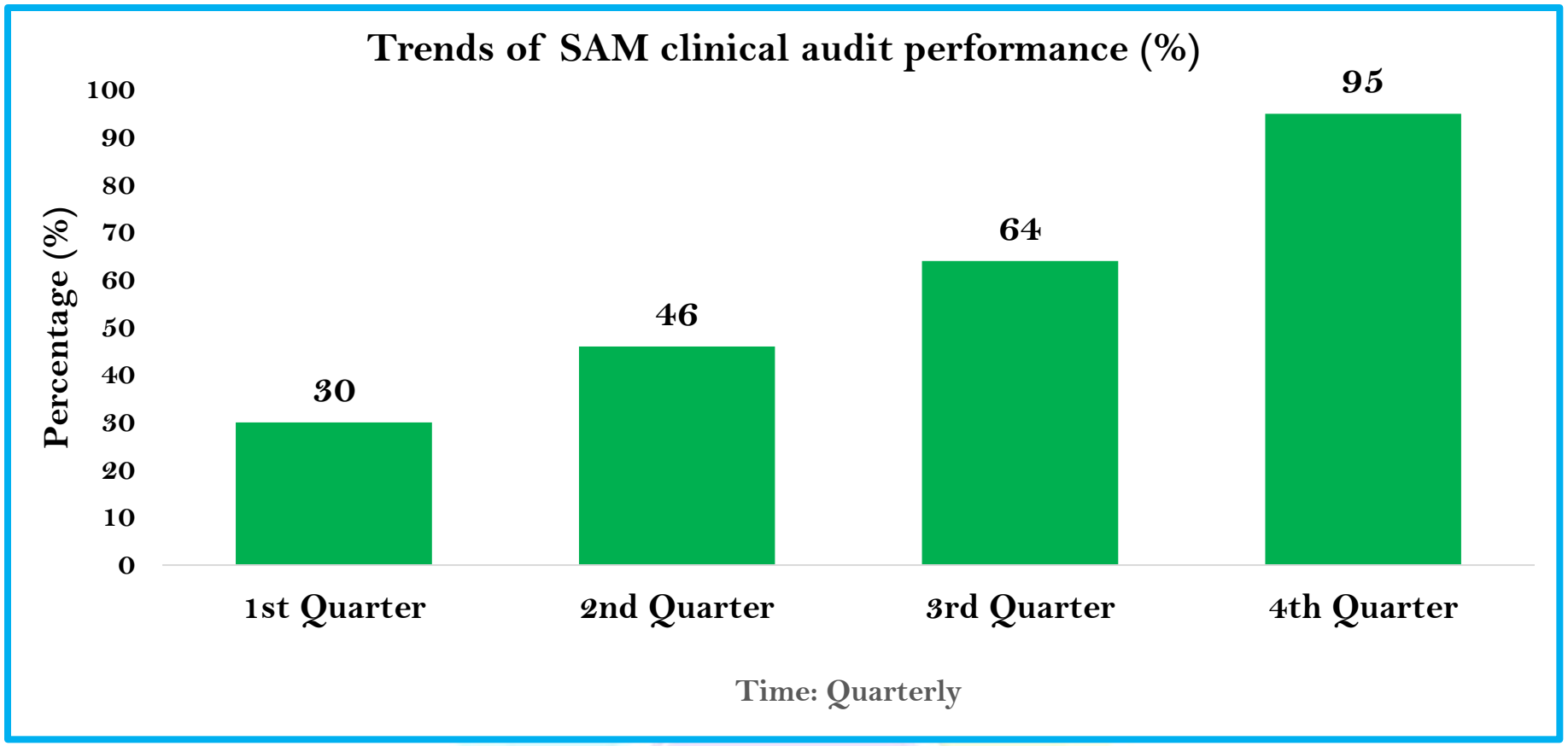


*Figure 11: Trends of **SAM** clinical audit performance 2017E.C*

DISCUSSION

Our audit reveals heartening progress in acute malnutrition care at Deder General Hospital. Perfect scores in identification, treatment, and provider documentation reflect a dedicated clinical team working tirelessly amid resource constraints. The 100% recovery rate—every child discharged with resolved complications and nutritional stability—is a testament to effective inpatient protocols. These achievements are particularly significant given Oromia's challenging context: food insecurity, climate shocks, and limited healthcare access. However, excellence in *crisis* ***management*** alone cannot overcome systemic gaps in ***preventive*** **and** ***continuity*** care, where we still fall short.

Incomplete histories (nutritional/immunization records) and inconsistent discharge planning are not mere paperwork failures—they represent missed opportunities to break the cycle of malnutrition. When families leave without counseling or clear follow-up plans, relapse becomes likely. Similarly, unused multicharts signal a critical disconnect: without real-time growth tracking, early warning signs like weight stagnation go unnoticed. These gaps mirror broader health system fragilities—stockouts of basic tools, understaffing, and siloed care. In Ethiopia's high-burden regions, such oversights can undo clinical victories, as 40% of SAM cases never return for outpatient care.

The path forward requires addressing root causes, not just symptoms. Lab inconsistencies (missed HIV/kidney tests) hint at supply chain failures, while fragmented discharge processes reveal underutilized community partnerships. Success hinges on:

RECOMMENDATIONS

- Implement multichart tracking

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

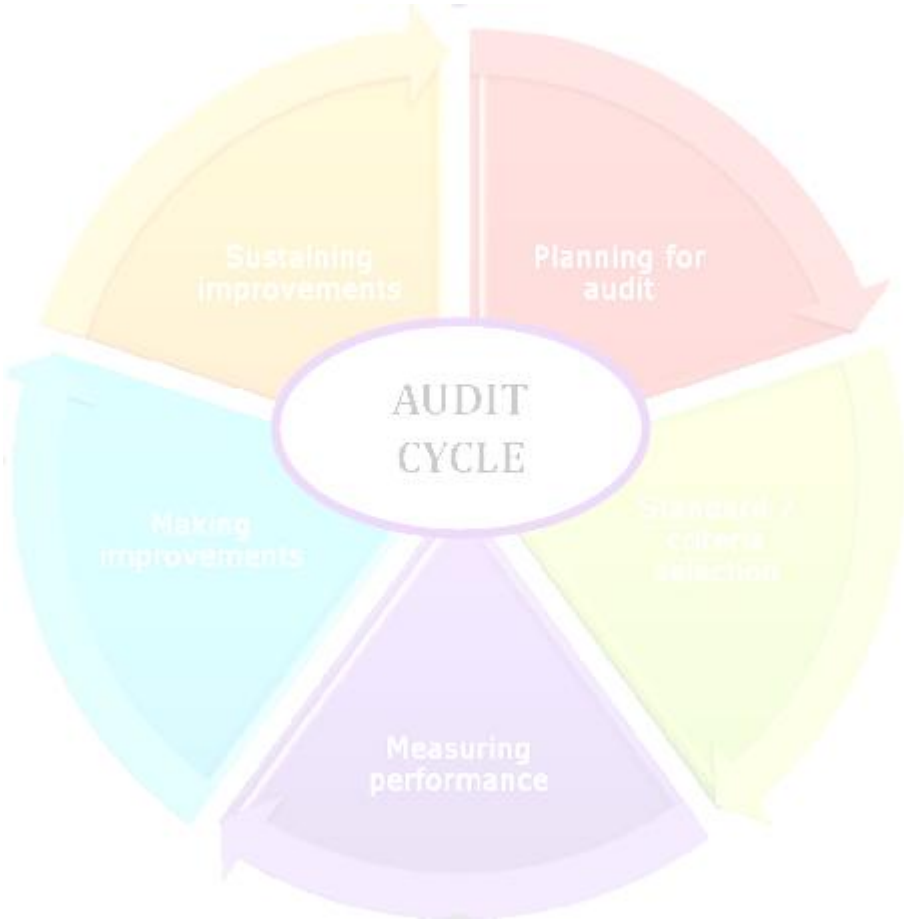
Recommendation	Action Steps	Responsible body	Timeline
Enhance Hospital Monitoring	- Implement multichart tracking for all SAM patients. - Assign a monitoring team for phase transitions.	Pediatric Ward Supervisor	2-4 months

Table 3: Implementation Status of Improvement Plan (March 2017 - June 2017)

Recommendation	Action Steps	Status (June 2017)
Strengthen Comprehensive History-Taking	• Develop & introduce standardized history-taking checklist • Train staff on holistic assessment	**Partially Implemented**
Improve Adherence to Investigations	• Create mandatory lab/test protocols • Ensure lab supplies stocked	**Implemented**
Enhance Hospital Monitoring	• Implement multichart tracking • Assign monitoring team for phase transitions	**Not Implemented**
Standardize Discharge & Follow-Up	• Develop discharge packets (counseling, RUTF, appointments) • Establish follow-up tracking	**Initiated**
Improve Documentation Practices	• Monthly audits for missing signatures • Provide staff feedback	**Implemented**

REFERENCES

1. Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., de Onis, M., ... & Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet, 382*(9890), 427-451. https://doi.org/10.1016/S0140-6736(13)60937-X
2. Ethiopia Central Statistical Agency (CSA) & ICF. (2019). *Ethiopia Demographic and Health Survey 2019*. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF.
3. World Health Organization (WHO). (2013). *Guideline: Updates on the management of severe acute malnutrition in infants and children*. Geneva: World Health Organization. https://www.who.int/publications/i/item/9789241506328
4. UNICEF, WHO, & World Bank Group. (2021). *Levels and trends in child malnutrition: Key findings of the 2021 edition*. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. https://www.who.int/publications/i/item/9789240025257
5. Collins, S., Dent, N., Binns, P., Bahwere, P., Sadler, K., & Hallam, A. (2006). Management of severe acute malnutrition in children. *The Lancet, 368*(9551), 1992-2000. https://doi.org/10.1016/S0140-6736(06)69443-9
6. Ethiopian Federal Ministry of Health (FMOH). (2016). *National guideline for the management of acute malnutrition*. Addis Ababa: FMOH.
7. Bhutta, Z. A., Das, J. K., Rizvi, A., Gaffey, M. F., Walker, N., Horton, S., ... & Black, R. E. (2013). Evidence-based interventions for improvement of maternal and child nutrition: What can be done and at what cost? *The Lancet, 382*(9890), 452-477. https://doi.org/10.1016/S0140-6736(13)60996-4
8. Save the Children. (2017). *Severe acute malnutrition: An unfinished agenda in East and Southern Africa*. London: Save the Children UK.
9. Oromia Regional Health Bureau. (2017). *Annual health sector performance report*. Addis Ababa: Oromia RHB.
10. Ashworth, A., Khanum, S., Jackson, A., & Schofield, C. (2003). *Guidelines for the inpatient treatment of severely malnourished children*. Geneva: World Health Organizatio


Planning for audit
Measuring performance
Making improvements
Sustaining improvements
AUDIT CYCLE

Guyyaa/ቀን/Date: _____/_____/_____

- **Garee tajaajila Pediatric ward irraa**
- **Garee Qulquullina Tajaajila Fayyaatiif**

Dhimmi: waa'ee Gabaasa CLINICAL AUDIT galchuu ilaallata

Akkuma mata Dureerrattii ibsamuuf yaalameettii clinical audit" **SAM**" jedhamu kan **kurmaana 4ffaa** bara **2017** xalayaa Fuula **24** qabuu gaggeessituu kana waliin walqabsiifnee isiiniif eerguu keenya kabajaan isiniif beeksiifnaa.

Nagaya wajjiin!!