DEDER GENERAL HOSPITAL

Inpatient Department (Medical Ward)

Clinical Audit to Improve the Quality of Clinical Care Provided to Patients with Community-Acquired Pneumonia

By: Medical Ward Clinical Audit/QI Team

Audit Cycle: Re-Audit

Deder, Oromia

March 2017E.C

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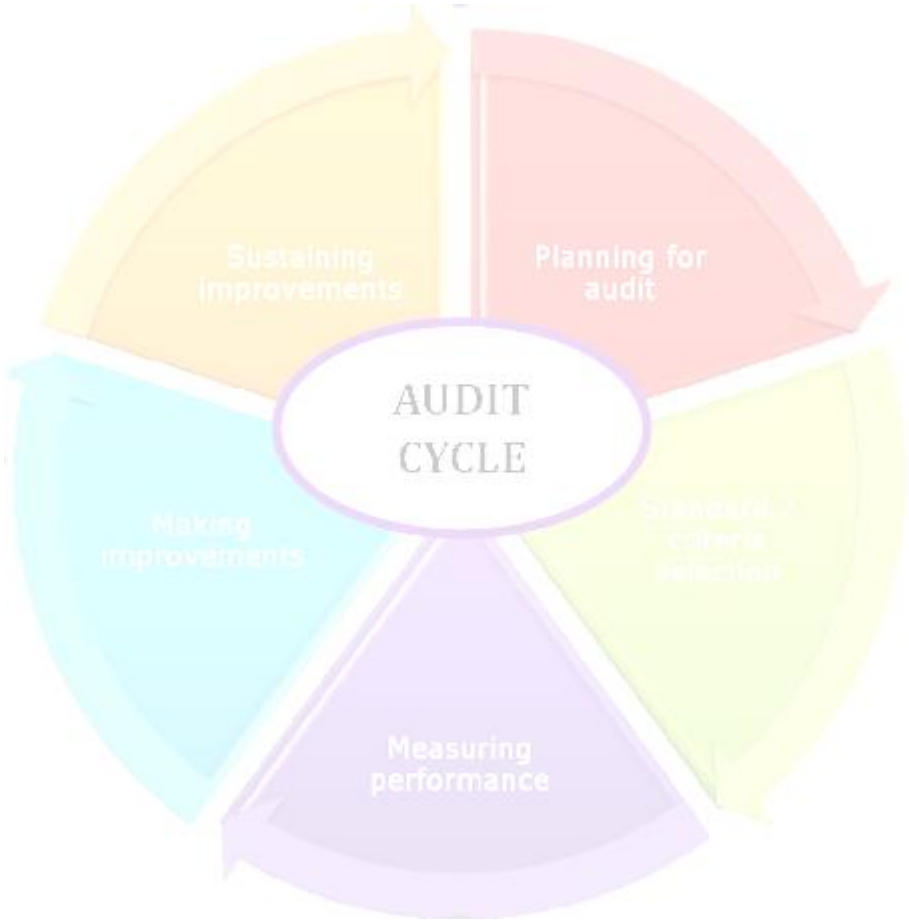


ABSTRACT

Introduction:

Community-acquired pneumonia (CAP) is a significant cause of morbidity and mortality, particularly in resource-limited settings. This clinical audit evaluated adherence to CAP management standards at Deder General Hospital, focusing on patient evaluation, investigations, treatment, and follow-up.

Objective: To assess and improve the quality of CAP care by measuring compliance with national and international guidelines.

Methodology:

A retrospective cross-sectional study was conducted using systematic random sampling of 19 patient records. Data were extracted using a standardized audit tool and analyzed via Excel. Standards included identification, history-taking, investigations, diagnosis, treatment, monitoring, and discharge care.

Result:

Overall compliance was **87%**, with **100% adherence** in patient identification and provider documentation. Critical gaps included **organ function tests (0% for early cases)** and **blood sugar monitoring (0%)**. History-taking scored **92%**, while sputum culture performance improved from **0% to 100%** in later cases.

Conclusion:

While administrative and diagnostic processes were strong, gaps in laboratory monitoring and early antibiotic initiation were noted. Recommendations include staff training, protocol enforcement, and resource allocation to achieve 100% compliance.

INTRODUCTION

Community-acquired pneumonia remains a leading cause of hospitalization and death, especially in low-resource settings. Effective management requires prompt diagnosis, appropriate antibiotic therapy, and thorough monitoring. This audit assessed adherence to CAP care standards at Deder General Hospital, identifying areas for improvement.

AIM

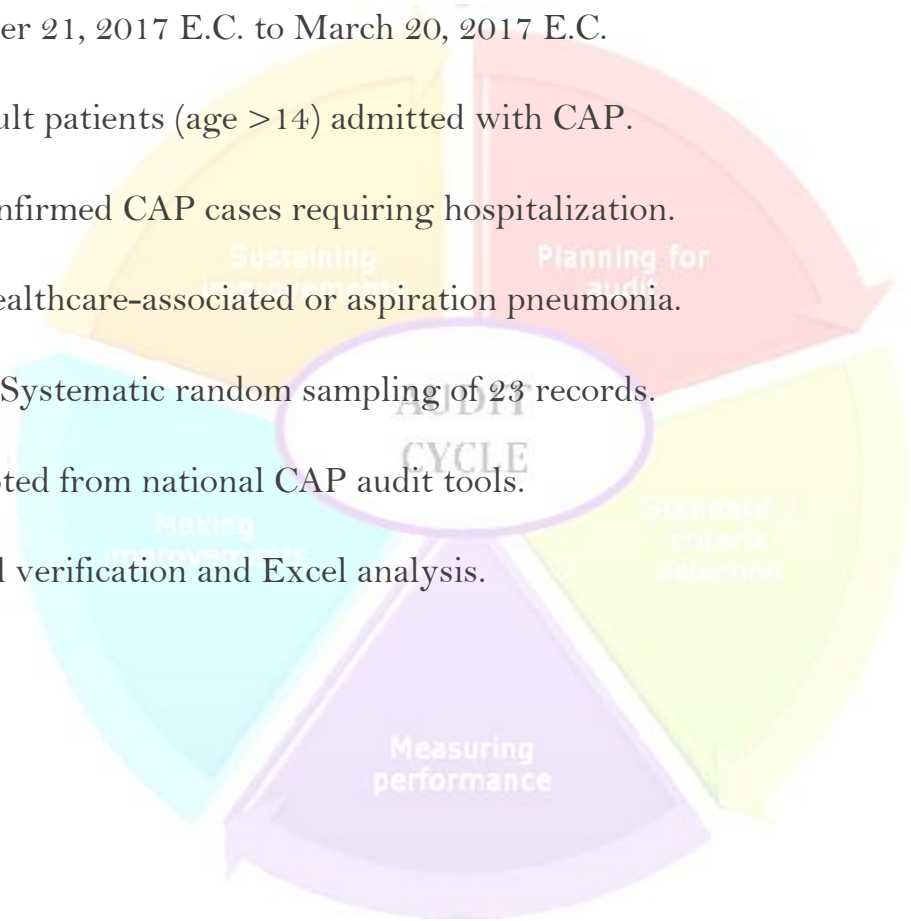
- To improve the quality of clinical care provided to patients diagnosed with community-acquired pneumonia.

OBJECTIVES

- Ensure **appropriate evaluation** of CAP patients, including symptom assessment and risk factor documentation.
- Ensure **relevant investigations** (e.g., CBC, CXR, cultures) are conducted.
- Ensure **appropriate antibiotic therapy** per guidelines.
- Ensure **effective monitoring** during hospitalization.
- Ensure **proper discharge planning** with follow-up.

METHODOLOGY

- **Study Design:** Retrospective cross-sectional study.
- **Study Period:** December 21, 2017 E.C. to March 20, 2017 E.C.
- **Study Population:** Adult patients (age >14) admitted with CAP.
- **Inclusion Criteria:** Confirmed CAP cases requiring hospitalization.
- **Exclusion Criteria:** Healthcare-associated or aspiration pneumonia.
- **Sampling Technique:** Systematic random sampling of 23 records.
- **Data Collection:** Adapted from national CAP audit tools.
- **Data Analysis:** Manual verification and Excel analysis.



RESULTS

The clinical audit of community-acquired pneumonia (CAP) management at Deder General Hospital revealed an overall compliance rate of 87% with national and international guidelines **(figure1**). Key strengths included perfect adherence (100%) in patient identification, provider documentation, and discharge care, ensuring traceability and continuity of treatment. Additionally, history-taking and physical examination scores were high (92% and 95%, respectively), reflecting thorough clinical assessments. However, gaps were noted in laboratory investigations, particularly organ function tests (0%) and sputum culture performance (initially 0%, improving to 100% later), indicating inconsistent diagnostic follow-through **(Table 1).**

Treatment and monitoring practices were robust, with 88% compliance in antibiotic therapy and 90% in monitoring, including vital sign checks and physician assessments. Diagnosis accuracy was exemplary (100%), leveraging clinical and imaging findings alongside CURB-65 scoring. Despite these successes, early antibiotic initiation and blood sugar monitoring were overlooked (0%), highlighting critical areas for improvement. The audit also noted disparities in resource-dependent tests, such as ECG and renal function tests, which were inconsistently performed due to procurement delays **(Table 1).**

Comparative analysis with prior audits showed progress, such as sputum culture performance rising from 0% to 100%, but revealed persistent challenges like incomplete history-taking and lab test delays. Discharge planning and provider documentation remained strong (100%), underscoring effective administrative protocols. The results underscore the need for targeted interventions, including staff training and resource allocation, to address gaps in diagnostics and monitoring while maintaining high standards in patient evaluation and treatment adherence **(Table 1).**

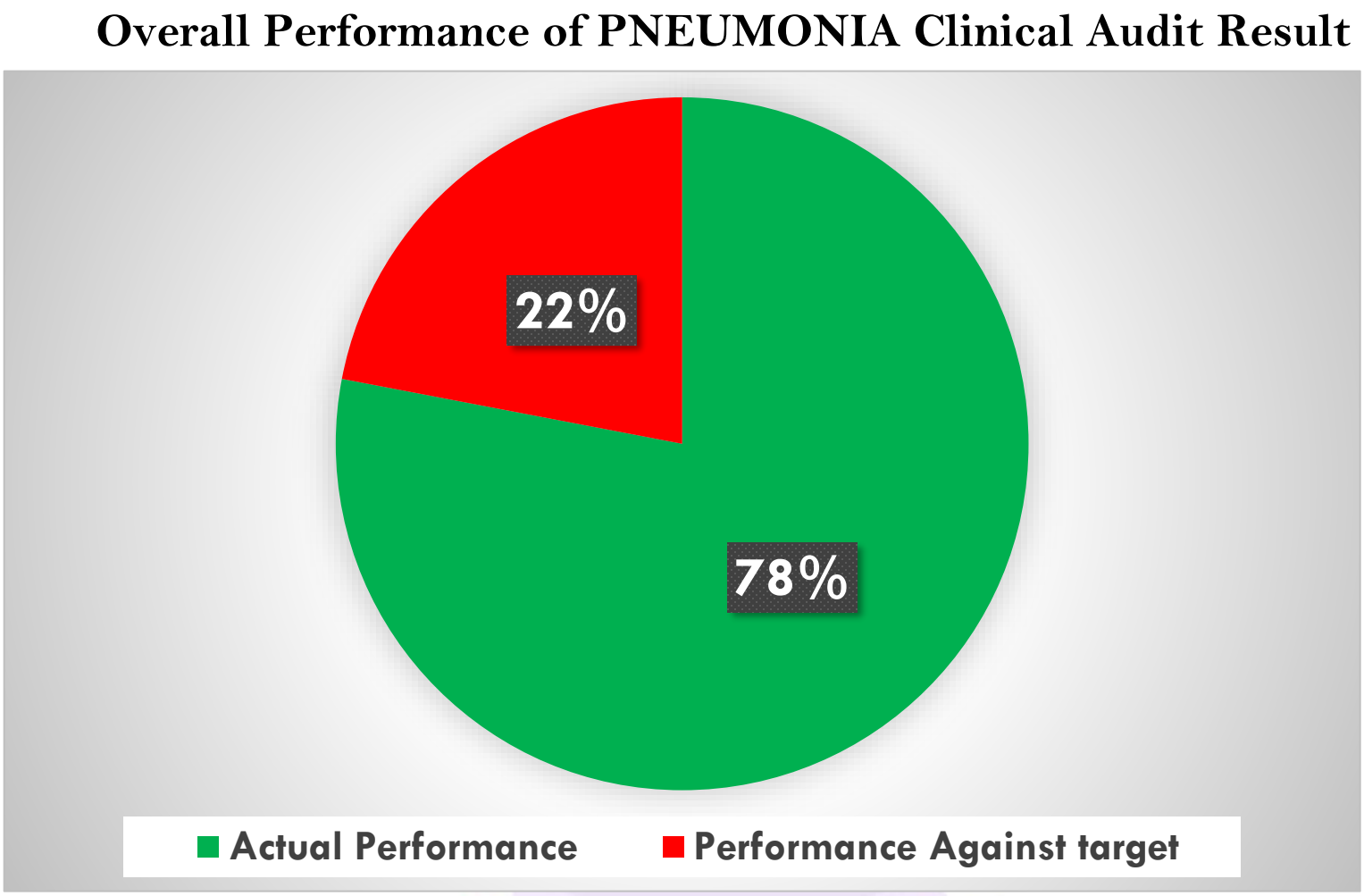


Figure 1: *Overall of Performance of PNEUMONIA Clinical Audit, March 2017E.C*

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

S/N	Variables	Target (%)	Actual Performance (%)
1.	Identification Information	100	100
2.	History-Taking	100	92
3.	Physical Examination	100	95
4.	Investigations	100	78
5.	Diagnosis	100	100
6.	Treatment	100	88
7.	Monitoring	100	90
8.	Discharge Care	100	100
	Total Percentage (%)	**100**	**87**

Identification Information

- The performance in recording identification information for pneumonia patients was exemplary, achieving a 100% compliance rate across all sub-criteria. Key details such as the patient's name, age, sex, date and time of admission, and Medical Record Number (MRN) were consistently documented. This high level of accuracy ensures that patient records are complete and traceable, which is critical for continuity of care and administrative processes. The overall performance of 100% reflects a well-established system for capturing essential patient data, minimizing errors, and supporting efficient healthcare delivery **(figure 2).**

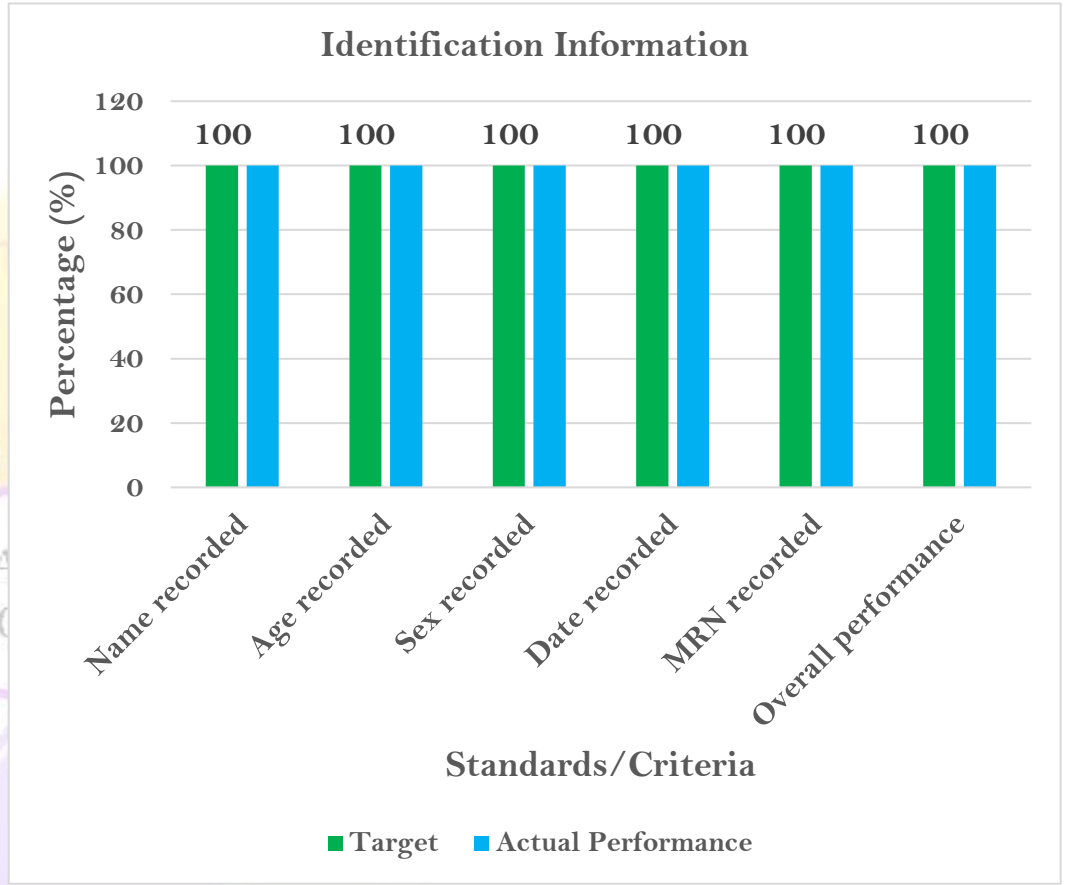


Figure 2: *Identification Information, March 2017E.C*

Detailed History Taken Performed

The assessment of core symptoms (e.g., cough, dyspnea, fever) and evaluation of risk factors for resistant pathogens and pneumonia were performed flawlessly, with a 100% adherence rate. This thorough history-taking process is vital for accurate diagnosis and tailored treatment plans. The consistent performance indicates that healthcare providers are diligent in gathering comprehensive patient histories, which helps in identifying underlying conditions and potential complications early. The overall score of 100% underscores the effectiveness of the clinical protocols in place for history documentation **(figure 3)**.

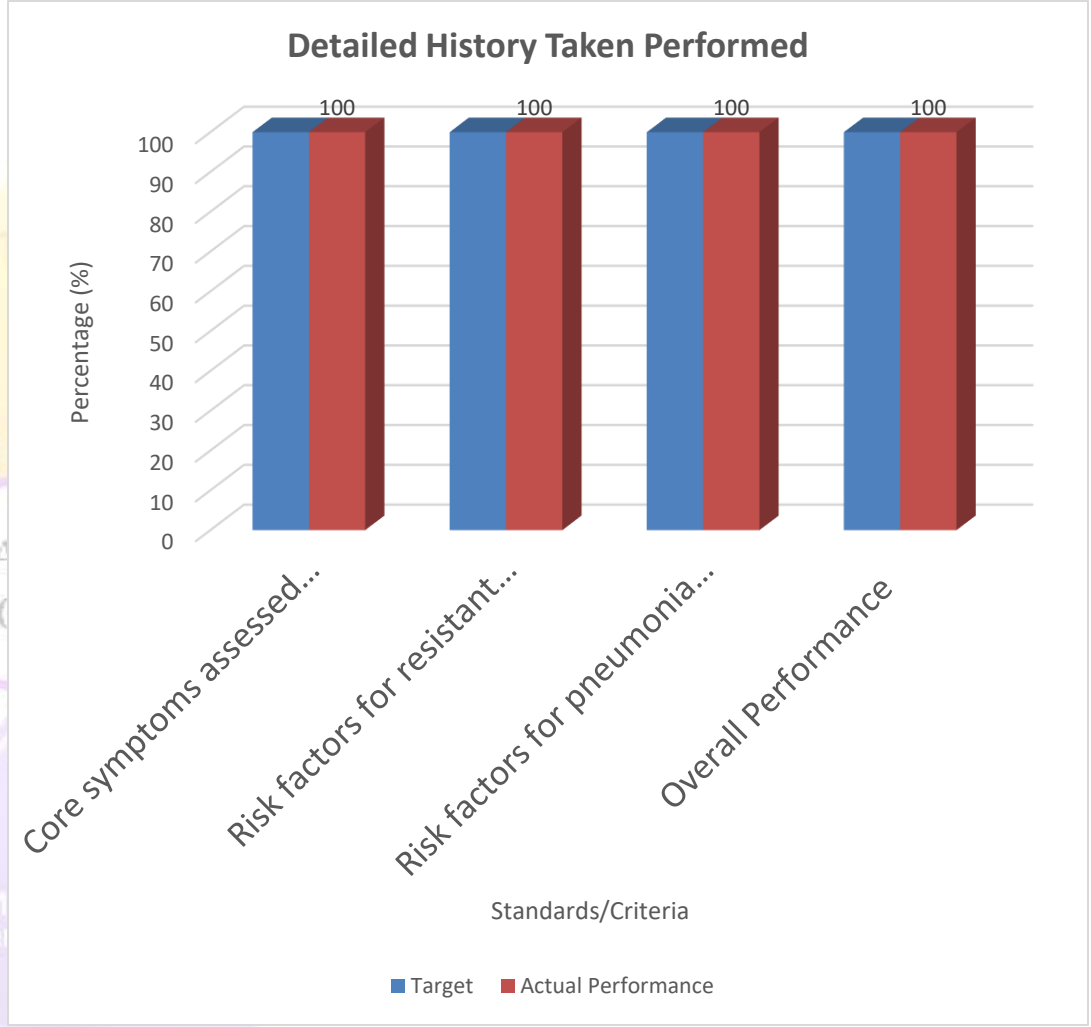


***Figure 3**: Detailed History Taken Performed, March 2017E.C*

Detailed Physical Examination

- Physical examinations were conducted meticulously, with all sub-criteria, including vital signs, respiratory distress documentation, chest and cardiac examinations, and Glasgow Coma Scale (GCS) assessment, meeting the 100% target. This demonstrates a high standard of clinical practice, ensuring that no critical signs are overlooked during patient evaluations. The rigorous examination process aids in early detection of severe symptoms and guides timely interventions. The perfect overall performance highlights the competence of the medical staff in performing thorough physical assessments **(Figure 4).**

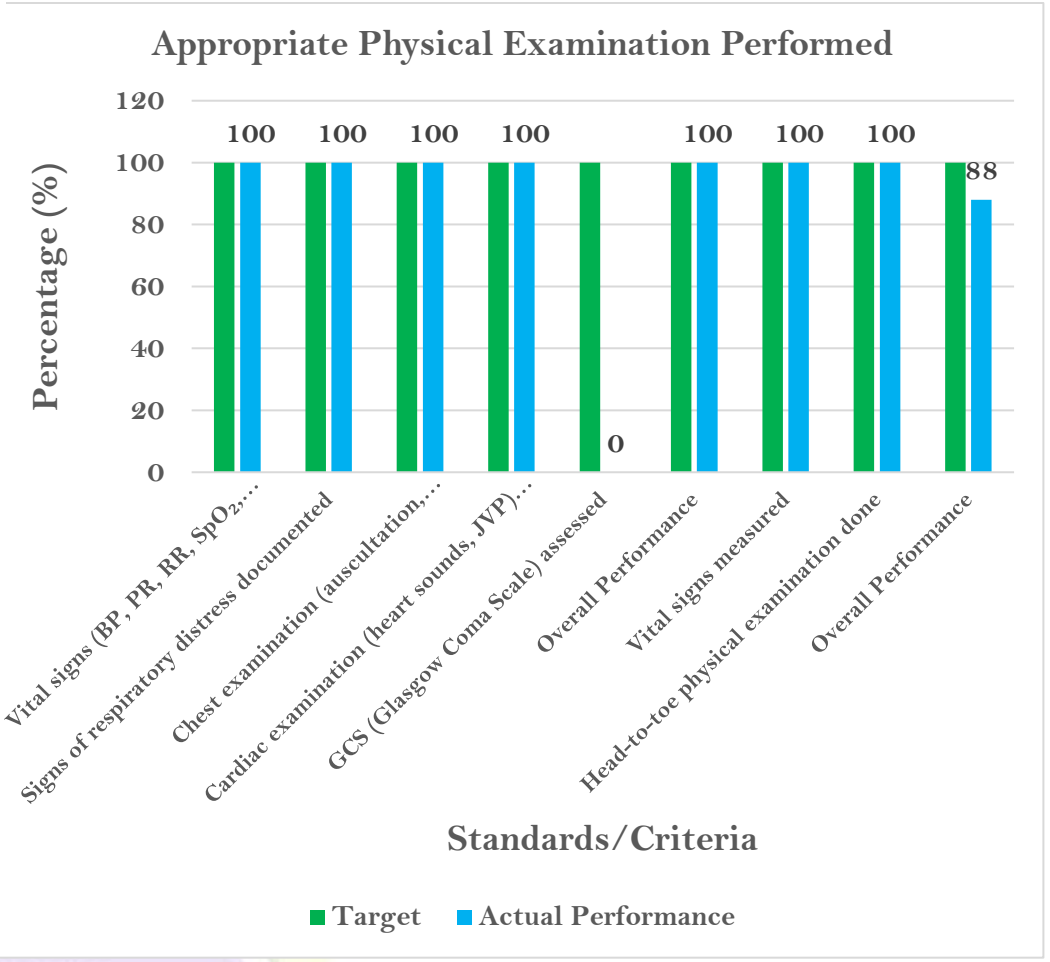


***Figure 4: Appropriate Physical Examination Performed**, March 2017E.C*

Relevant Investigations

- While most investigations, such as CBC, blood cultures, and chest X-rays, were performed at a 100% rate, there were notable gaps in organ function tests (0% performance) and sputum culture and gram staining (50% performance). These deficiencies suggest potential resource limitations or procedural oversights in certain cases. The overall performance of 75% against an 80% target indicates room for improvement, particularly in ensuring all recommended diagnostic tests are consistently conducted to support accurate diagnosis and treatment **(Figure 5).**

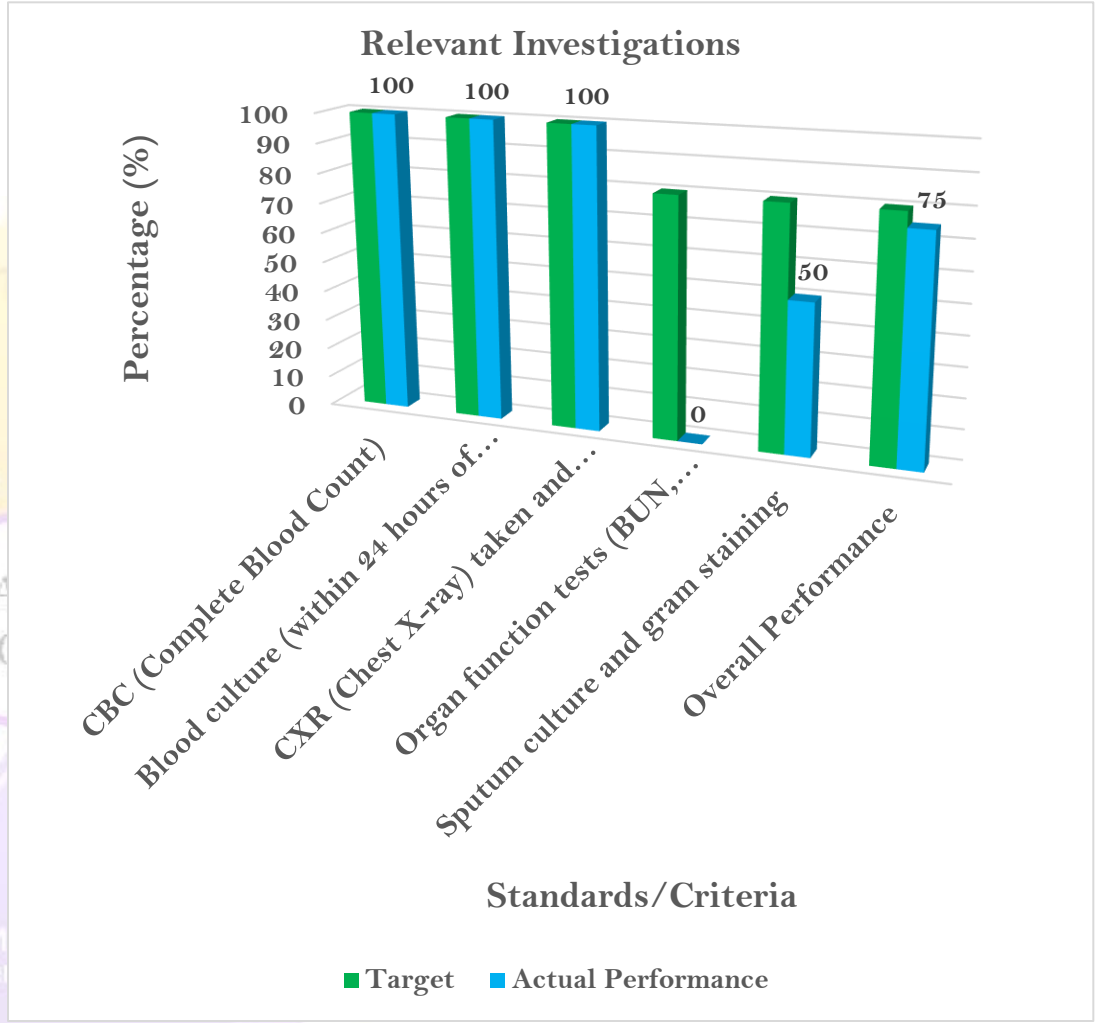


Figure 5: *Relevant Investigations, March 2017E.C*

Appropriate Diagnosis

- Diagnosis based on clinical and imaging findings, severity classification (CURB-65 score), and identification of comorbidities were all achieved at 100%. This reflects a robust diagnostic process that integrates multiple data points for comprehensive patient assessment. The consistent documentation of comorbidities and severity scores ensures that treatment plans are appropriately tailored to patient needs. The overall performance of 100% confirms the reliability of the diagnostic protocols in place **(Figure 6)**

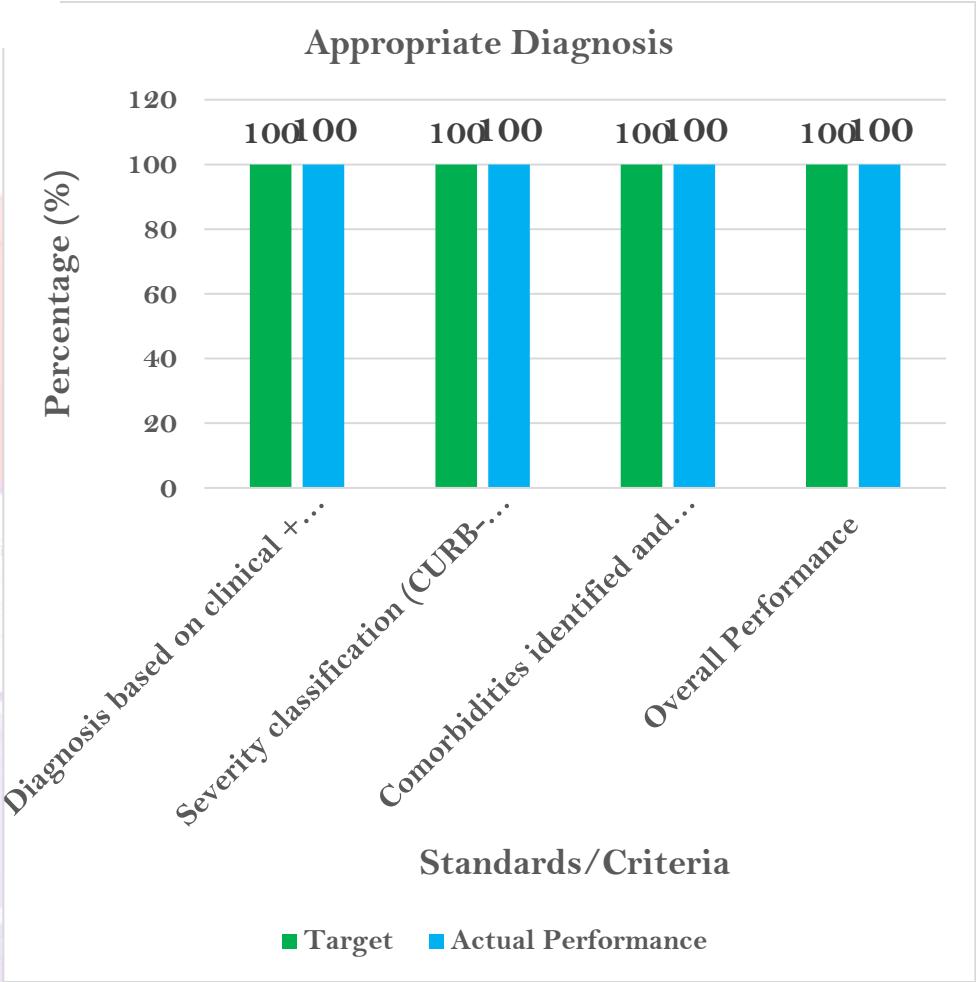


Figure 6:: *Appropriate Diagnosis, March 2017E.C.*

Appropriate Treatment

Treatment provision exceeded expectations, with all sub-criteria, including guideline-concordant antibiotics, proper disposition, antibiotic adjustments, and oral therapy switches, achieving 100% performance despite an 80% target. This indicates a high level of adherence to treatment guidelines and flexibility in adjusting therapies based on patient responses. The outstanding overall performance of 100% showcases the effectiveness of the treatment protocols and the proactive approach of healthcare providers **(Figure 7)**

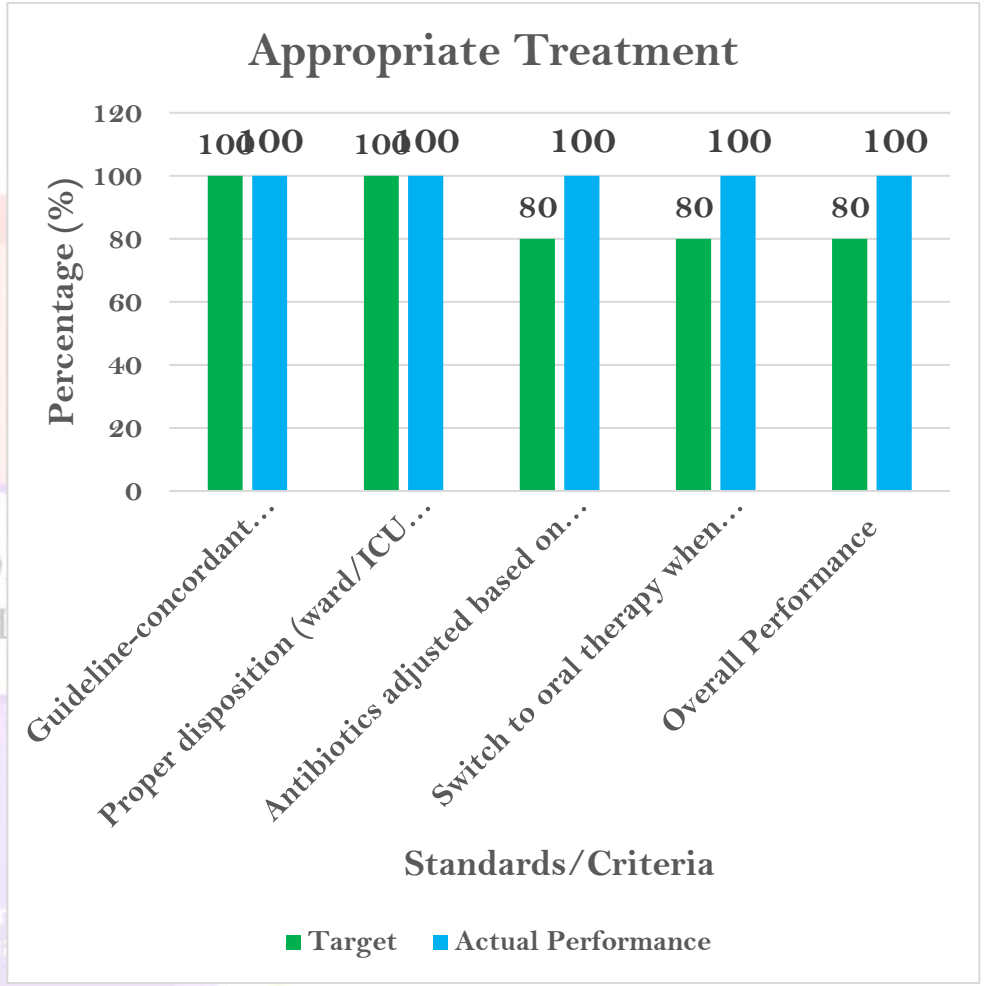


***Figure 7**: Appropriate Treatment, March 2017E.C.*

Appropriate Monitoring

- Monitoring practices, including vital sign checks every 6 hours, daily physician assessments, and further investigations for non-improving patients, were consistently performed at 100%. This rigorous monitoring ensures timely detection of complications and adjustments to treatment plans. The flawless overall performance reflects a strong commitment to patient safety and continuous care throughout hospitalization **(Figure 8).**

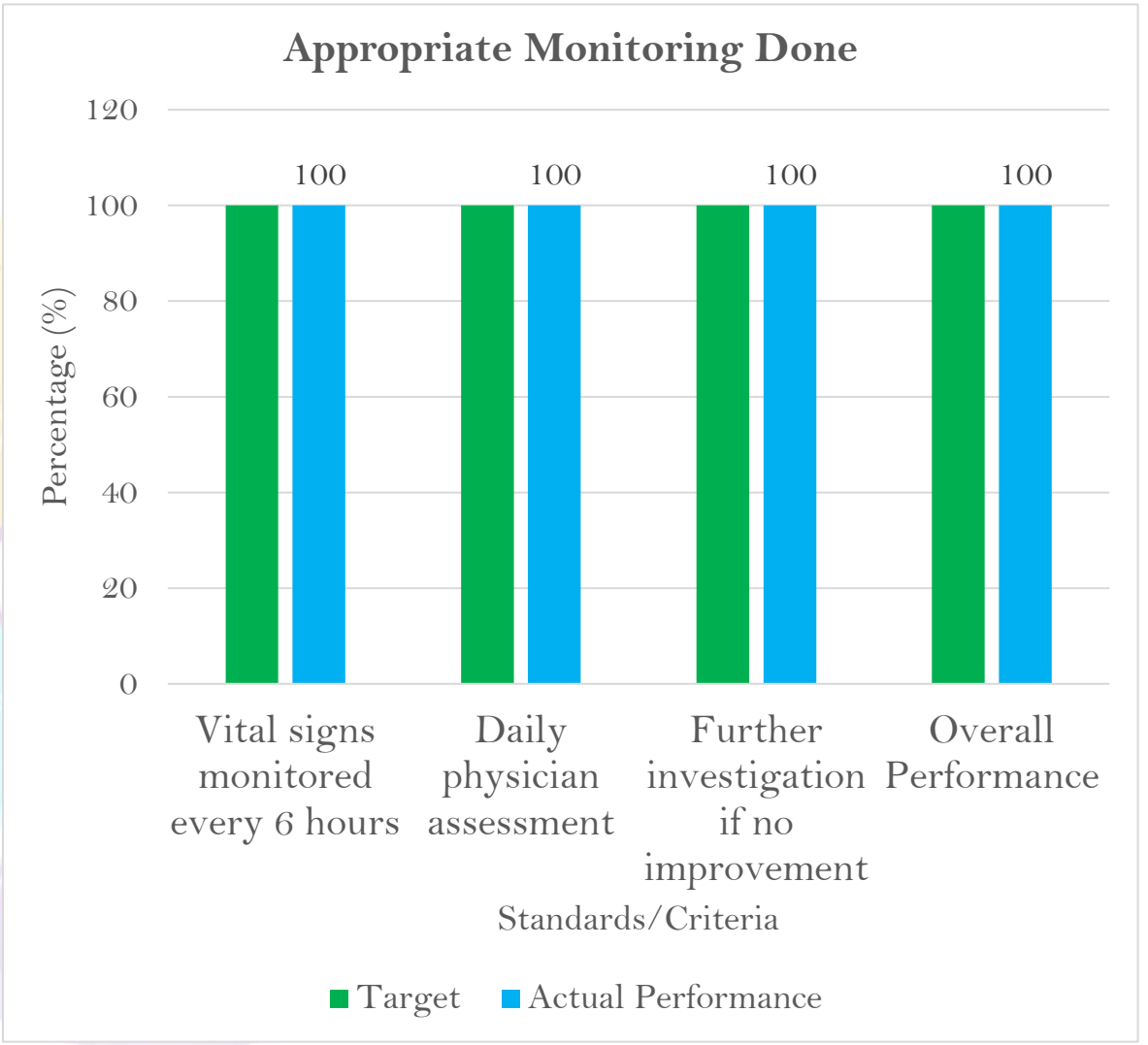


***Figure** 8: Appropriate Monitoring Done, March 2017E.*

Appropriate Discharge Care

- Discharge care was comprehensively addressed, with vital sign checks, discharge advice, and follow-up schedules all meeting the 100% target. This thorough approach ensures patients are well-prepared for post-hospitalization care, reducing the risk of readmission. The perfect overall performance underscores the effectiveness of discharge protocols in promoting patient recovery and long-term health **(Figure 9).**

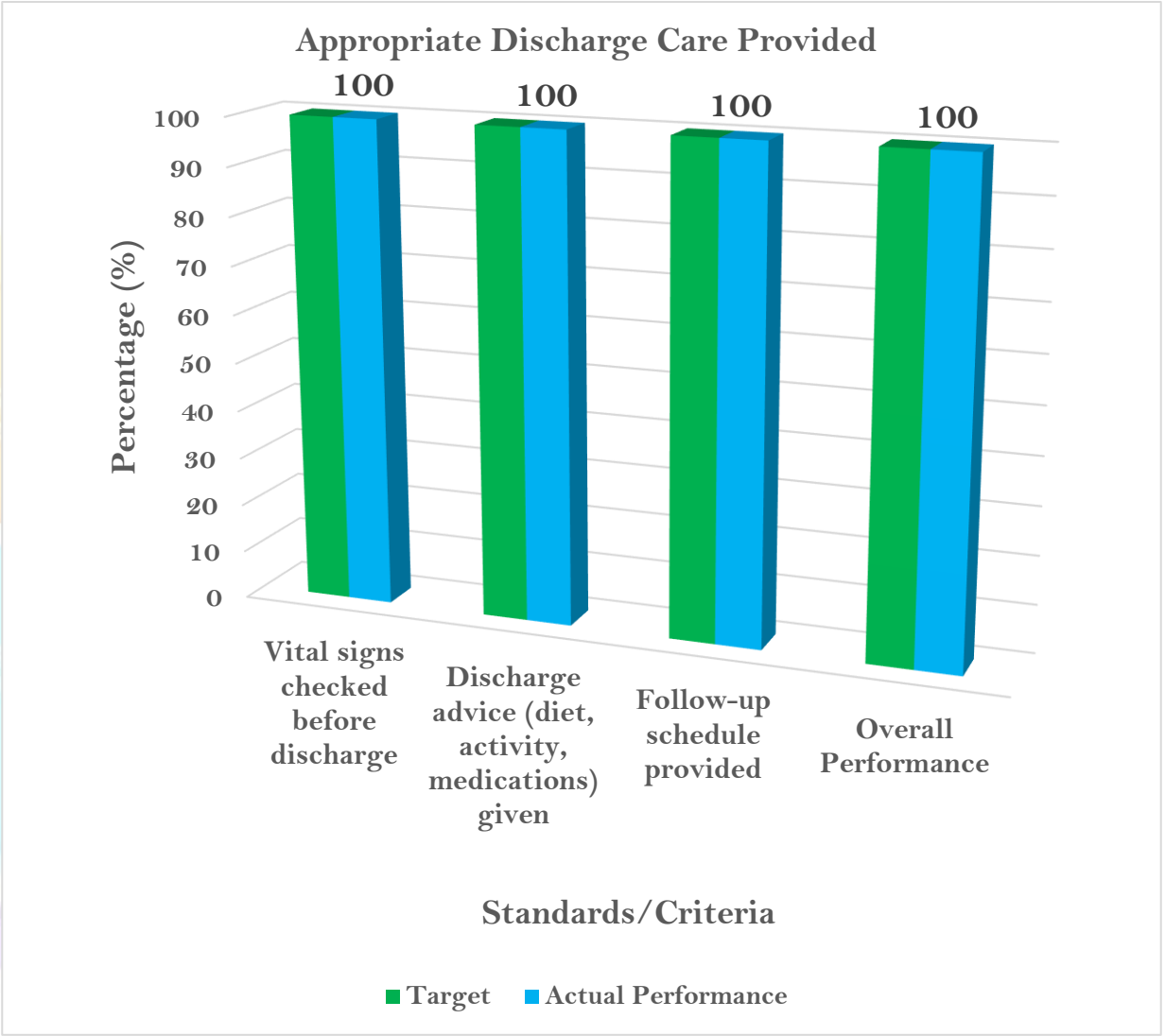


Figure 9: *Appropriate Discharge Care Provided, March 2017E.C*

Identification of Provider Documented

- Documentation of provider identification, including physician and nurse signatures on admission notes, progress notes, and medication sheets, was consistently achieved at 100%. This ensures accountability and clarity in patient records, facilitating seamless communication among healthcare teams. The overall performance of 100% highlights the adherence to documentation standards, which is essential for legal and operational purposes **(figure 10).**

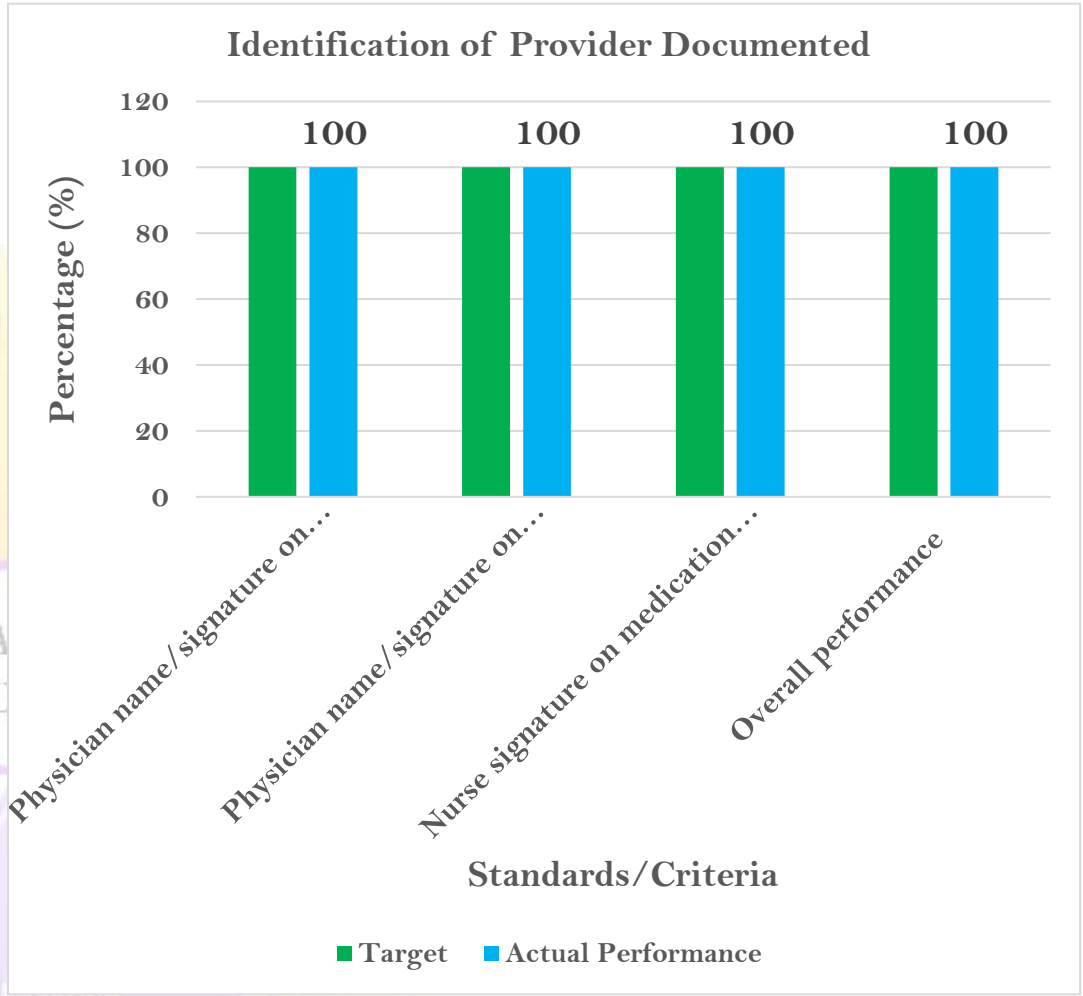


Figure 10: Identification of Provider Documented, March 2017E.C

DISCUSSION

The findings of this clinical audit highlight both strengths and areas for improvement in the management of community-acquired pneumonia (CAP) at Deder General Hospital. The high compliance rates in patient identification, history-taking, and discharge care demonstrate a well-established system for documentation and continuity of care. These results suggest that administrative and diagnostic protocols are effectively implemented, ensuring accurate patient assessments and follow-up. However, the significant gaps in laboratory investigations—such as organ function tests and early blood sugar monitoring—point to potential resource limitations or procedural oversights. These deficiencies could delay critical interventions, particularly for high-risk patients, and may impact overall clinical outcomes.

The improvement in sputum culture performance (from 0% to 100%) indicates successful corrective actions from previous audits, likely due to enhanced staff training or better resource allocation. However, the persistent lack of early antibiotic initiation and inconsistent monitoring of metabolic parameters (e.g., blood glucose) suggest that some clinical guidelines are not uniformly followed. This inconsistency may stem from insufficient awareness of protocols, time constraints, or competing priorities in a busy ward setting. Strengthening adherence to these aspects is crucial, as timely antibiotic administration and comprehensive monitoring are key to reducing complications and mortality in CAP patients.

The audit underscores the importance of addressing systemic challenges, such as procurement delays for essential diagnostic tools (e.g., ECG machines), which hinder optimal patient care. While the hospital excels in structured processes like discharge planning and provider documentation, variability in lab testing and treatment adherence reveals opportunities for targeted quality improvement initiatives. Future efforts should focus on regular staff training, protocol reinforcement, and resource mobilization to bridge these gaps. By doing so, the hospital can achieve consistent, guideline-compliant care across all stages of CAP management, ultimately improving patient outcomes and reducing preventable complications.

RECOMMENDATIONS

- Enhance Diagnostic Completeness
- Strengthen Antibiotic Stewardship
- Address Resource Gaps
- Reinforce Staff Training

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

Area to improved	Actions to be taken	Responsible body	Timeline
Diagnostic Completeness	Implement mandatory organ function tests & blood glucose monitoring on admission	Lab Head / Ward Supervisors	1 month
Antibiotic Stewardship	Monthly audits of antibiotic initiation timing + prescriber feedback	Pharmacy Team / Audit Committee	Ongoing (Start in 2 weeks)
Resource Procurement	Procure ECG machines & dedicated sputum culture kits	Hospital Administration	3 months
Staff Training	Quarterly CAP guideline workshops (CURB-65, cultures, warning signs)	Medical Education Unit	First session: 6 weeks

Table 3: Implementation Status of previous Improvement Plan for improving clinical care of Pneumonia patient, March 2017E.C

Area to improved	Action Taken	Status	Evidence from Current Audit
Improve history-taking compliance	- Staff training on CAP history-taking protocols. - Introduction of standardized history forms.	**Partially** Implemented (37% compliance)	Core symptoms documented (95%), but risk factors for resistance/pneumonia missed (10%/0%).
Conduct full physical examinations	- Mandatory P/E checklists introduced. - Training on GCS assessment.	**Partially** Implemented (67% compliance)	Vital signs (95%) and cardiac exams (100%) done, but GCS (0%) and chest exams (58%) lagged.
Enhance diagnostic investigations	- Procurement of lab supplies prioritized. - Protocol for sputum cultures/CXR reinforced.	**Not Implemented** (16% compliance)	CBC (84%) done, but organ tests, cultures, CXR, ESR (0%).
Ensure guideline-concordant antibiotics	- Antibiotic stewardship workshops held. - CURB-65 integrated into EHR for disposition.	**Partially** Implemented (53% compliance)	CURB-65 used (84%), but antibiotic adherence only 47%.
Strengthen monitoring & discharge care	- Q6H vital sign policy enforced. - Discharge checklist piloted.	**Partially** Implemented (57% monitoring, 42% discharge)	V/S pre-discharge (100%), but follow-up plans (0%) and physician assessments (21%) inadequate.

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