N.Sepsis STG-June 2017 NICU.pdf

PNA STG-June_2017.pdf

DEDER GENERAL HOSPITAL

NEONATAL INTENSIVE CARE UNIT (NICU)

STG UTILIZATION MONITORING REPORT

Neonatal Sepsis Management

By: Dr. Dawit Seifu (MD)-IPD Director

Date: 30/10/2017E.C

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Purpose

Since EBC was launched in 2014 it was mentioned that monitoring Utilization to STG was necessitated as mentioned in EBC document to make sure that clients was treated as per the protocol and there is uniformity of the care provided for the all clients. Deder General Hospital has also followed this and conducting the Monitoring of STG adherence.

Introduction

Neonatal sepsis remains a leading cause of morbidity and mortality in newborns, particularly in resource-limited settings. Prompt diagnosis, evidence-based management, and consistent documentation are critical to improving outcomes. This report evaluates compliance with neonatal sepsis management protocols at the **Deder General hospital** to identify strengths and gaps in care delivery.

AIM

- To ensure that DGH NICU teams have working knowledge and Utilization to Neonatal Treatment Guideline.

Objective

- To assess the level of compliance with neonatalsepsis management protocols
- To identify areas requiring quality improvement
- To enhance patient outcomes and adherence to standards of care.

Methodology

- **Data Collection**: Retrospective review of 10 medical records (MRNs) of neonates diagnosed with sepsis during the period of **June 01-30, 2017E**.C
- **Criteria Assessed**: Compliance with 13 key indicators for neonatal sepsis management, including timely diagnosis, laboratory tests, initiation of antibiotics, and caregiver follow-up documentation.
- **Analysis**: Compliance rates were calculated for each indicator, and gaps were identified to inform actionable recommendations.

Table 1:CRITEREA AND STANDARDS

S.No	Standards
1.	Diagnosis documented within 24 hours of suspicion.
2.	Maternal/neonatal risk factors noted in records.
3.	Blood culture collected before antibiotics.
4.	CRP, CBC, or lumbar puncture performed if indicated.
5.	Empirical antibiotics started within 1 hour.
6.	Antibiotics aligned with standard guidelines.
7.	IV fluids documented as per protocol.
8.	Nutritional support provided when indicated.
9.	Oxygen or respiratory support when indicated.
10.	Vital signs recorded consistently.
11.	Family counseling documented.
12.	Neonate discharged only after stability.
13.	Follow-up plan documented for caregivers.

Result

The unit demonstrated **exceptionally high compliance** with neonatal sepsis management standards during the reporting period, achieving an **overall compliance rate of 96%** (115 out of 120 applicable criteria met) **(figure 1).** This indicates a strong adherence to established protocols across nearly all measured aspects of care. Eleven out of the twelve individual standards achieved perfect 100% compliance, reflecting consistent application of critical practices like timely diagnosis, antibiotic administration, fluid management, vital sign monitoring, discharge criteria, and family communication.

Despite the strong overall performance, a **significant gap** was identified in **Standard 3: Performing indicated tests like CRP & CBC**. This standard had only a **50% compliance rate** (5 compliant, 5 non-compliant), making it the sole major outlier. This indicates that in half of the relevant cases, essential diagnostic tests were not performed when clinically indicated. Given the critical role of CRP and CBC in diagnosing, monitoring, and guiding treatment for neonatal sepsis, this represents a crucial area requiring immediate investigation and intervention to improve diagnostic completeness.

The data highlights remarkable consistency in nearly all other facets of care. Standards related to timeliness (diagnosis within 24 hours, antibiotics within 1 hour), treatment appropriateness (antibiotic alignment, IV fluids, nutritional/respiratory support), monitoring (vital signs), and discharge/follow-up processes (stability before discharge, documented follow-up plan, family counselling) all achieved 100% compliance. This widespread excellence underscores a robust system for managing neonatal sepsis according to guidelines, with the critical exception of diagnostic testing completeness which needs targeted focus (Table 3).

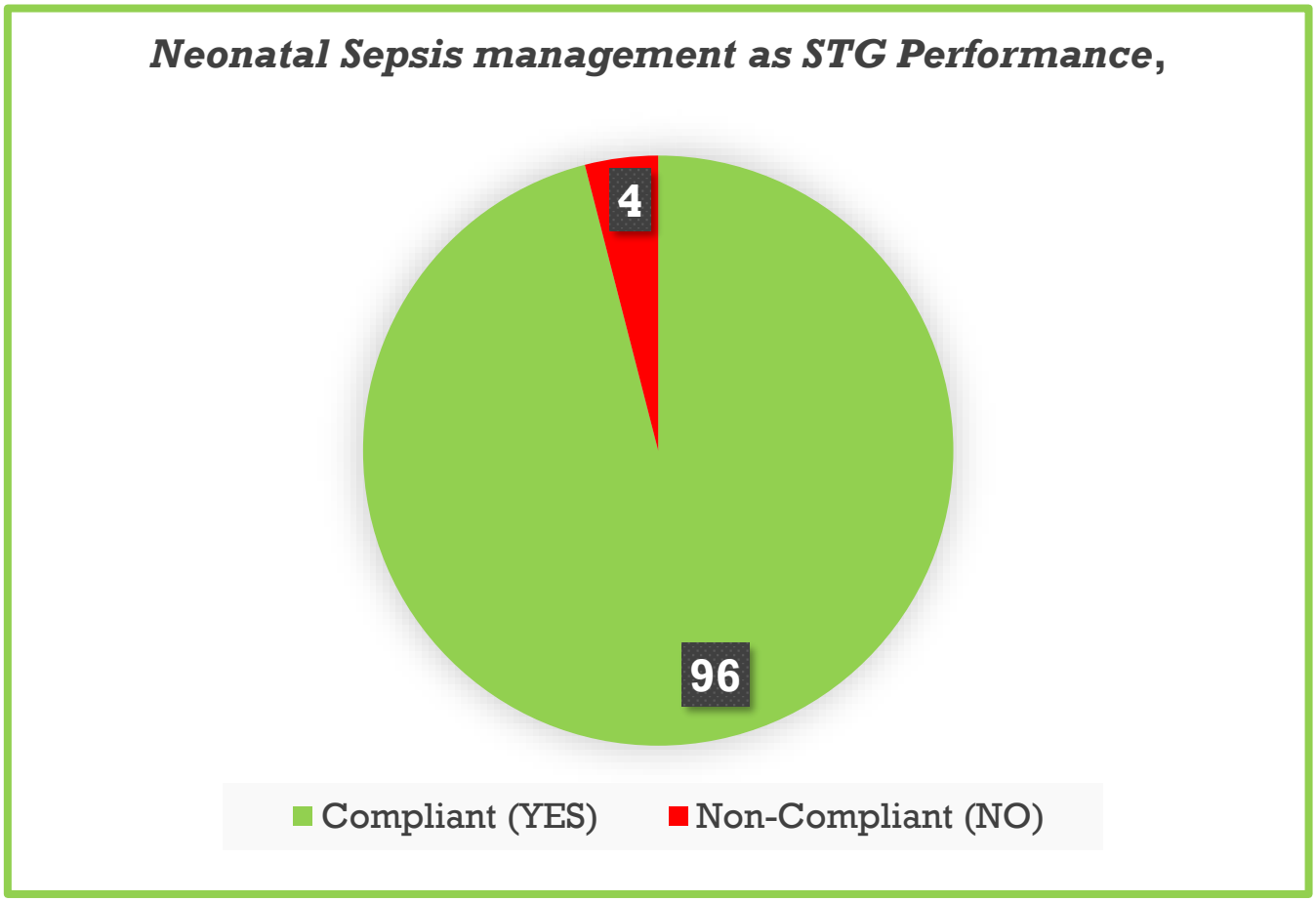

Figure 1: Neonatal Sepsis management as STG Performance, June 2017E.C

Table 2: Neonatal Sepsis management as STG Performance, June 2017E.C

S.N	Standards	Compliant	Non-Compli	Compliance Rate
1.	Diagnosis documented within 24 hours of suspicion.	10	0	100
2.	Maternal/neonatal risk factors noted in records.	10	0	100
3.	Test like CRP & CBC performed (if indicated)	5	5	50
4.	Empirical antibiotics started within 1	10	0	100
5.	Antibiotics aligned with standard guidelines	10	0	100
6.	IV fluids documented as per protocol.	10	0	100
7.	Nutritional support provided when indicated.	10	0	100
8.	Oxygen or respiratory support when indicated.	10	0	100
9.	Vital signs recorded consistently.	10	0	100
10.	Family counselling documented.	10	0	100
11.	Neonate discharged only after stability.	10	0	100
12.	Follow-up plan documented for caregivers.	10	0	100
	OVERALL	115/120	5/120	**96%**

Discussion

The neonatal unit demonstrated **highly commendable overall performance** in managing neonatal sepsis during June 2017 E.C., achieving an **impressive 96% compliance rate** (115/120) against the measured standards. This near-perfect execution across the vast majority of criteria (11 out of 12 standards at 100%) reflects a **strong, well-established system** for timely intervention, appropriate treatment, supportive care, monitoring, and discharge planning. Key life-saving interventions, such as initiating empirical antibiotics within one hour and ensuring antibiotic choice aligned with guidelines, were consistently performed, alongside meticulous documentation of risk factors, vital signs, fluid management, nutritional/respiratory support, and family communication. This level of widespread adherence suggests effective protocols, staff training, and a culture prioritizing critical aspects of sepsis management.

The Pervasive Weakness in Diagnostic Testing: However, the data reveals **one significant and concerning outlier: Standard 3 (Performing indicated tests like CRP & CBC)** languished at only **50% compliance**. This stark contrast to the otherwise flawless performance indicates a **systemic failure or barrier** specifically related to completing essential diagnostic investigations. The failure to perform CBC and CRP in half of the indicated cases represents a **major clinical risk**. These tests are fundamental for confirming sepsis diagnosis, assessing severity, monitoring response to therapy, and guiding decisions on antibiotic duration or escalation. Non-compliance here undermines the evidence base for treatment, potentially leading to missed diagnoses, delayed recognition of treatment failure, unnecessary prolonged antibiotic exposure, or failure to identify worsening conditions. This gap is particularly alarming given the unit's otherwise excellent performance in *initiating* antibiotics appropriately; the missing piece is confirming *why* they are needed and *how well* they are working.

RECOMMENDATIONS

1. Avail & Ensure CRP/CBC tests are performed promptly

Table 3: Performance improvement plan, June 2017E.C

Area of Improvement	Action Steps	Responsible body	Timeline
CRP/CBC/ availability	Ensure lab availability for urgent tests.	Laboratory Head, NICU Unit Head, pharmacy head	1 month

Table 4: *Implementation Status of previous performance improvement plan, June 2017E.C*

No.	Area of Improvement	Action Taken	Responsible body	Status	Remarks
1.	**Antibiotic Guideline Adherence**	Avail STG protocols	NICU head, Pharmacy	Completed	Printed STG protocols distributed to NICU/pharmacy. Digital copies shared via hospital portal. Antibiotic charts updated per guidelines.
2.	**Cross-Cutting Improvements**	Monthly interdisciplinary review meetings	NICU head	**Ongoing**	Meetings initiated in June 2017 E.C. Cases reviewed: 12. Attendance: 90% (NICU, Lab, Pharmacy).
3.	CRP/CBC/ availability	- Procured reagents for CBC	Laboratory Head, NICU Unit Head	**Pending**	There has been a national shortage of reagents.

References

1. World Health Organization (WHO). *Managing Possible Serious Bacterial Infection in Young Infants When Referral Is Not Feasible: Guidelines and Procedures*. Geneva: WHO; 2015.
2. Ministry of Health, Ethiopia. *Neonatal Intensive Care Unit (NICU) Clinical Guidelines*. Addis Ababa: Ministry of Health; 2020.
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4. American Academy of Pediatrics (AAP). *Guidelines for Management of Neonatal Sepsis*. Pediatrics. 2018;142(6):e20182896.
5. Ethiopian Public Health Institute (EPHI). *Ethiopian Emergency and Essential Clinical Guidelines for Newborns*. Addis Ababa: EPHI; 2021.
6. UNICEF. *Strengthening Quality of Newborn Care: Strategies and Tools*. New York: UNICEF; 2019.

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- **Garee tajaajila NICU irraa**
- **Garee Qulquullina Tajaajila Fayyaatiif**

Dhimmi: **waa'ee Gabaasa STG protocol mon erguu ilaala**

Akkuma mata Dureerrattii ibsamuuf yaalameettii **STG protocol mon "NEONATAL SEPSIS"** Jedhamu kan **ji'a 1Offaa** bara **2017** xalayaa **Fuula 11** qabuu gaggeessituu kana waliin walqabsiifnee isiiniif eerguu keenya kabajaan isiniif beeksiifnaa.

Nagaya wajjiin!!

DEDER GENERAL HOSPITAL

NEONATAL INTENSIVE CARE UNIT (NICU)

STG UTILIZATION MONITORING REPORT

Perinatal Asphyxia Management

By: Dr. Dawit Seifu (MD)-IPD Director

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PURPOSE

Since EBC was launched in 2014 it was mentioned that monitoring Utilization to STG was necessitated as mentioned in EBC document to make sure that clients was treated as per the protocol and there is uniformity of the care provided for the all clients. Deder General Hospital has also followed this and conducting the Monitoring of STG adherence.

INTRODUCTION

Perinatal asphyxia (PNA) is a major cause of neonatal morbidity and mortality. Effective management, including prompt diagnosis, resuscitation, and post-resuscitation care, is essential to minimize complications and improve survival. This report evaluates compliance with PNA management protocols at the **Deder General hospital** to identify strengths and areas requiring improvement.

AIM

- To ensure that DGH NICU teams have working knowledge and Utilization to Neonatal Treatment Guideline.

Objective

- To assess compliance with PNA management protocols
- To identify areas requiring quality improvement
- To enhance patient outcomes and adherence to standards of care.

Methodology

- **Data Collection**: Retrospective review of 6 medical records (MRNs) of neonates diagnosed with PNA during the period of **June 1-30, 2017**.
- **Criteria Assessed**: Compliance with 10 key indicators for PNA management, including resuscitation, oxygen therapy, and caregiver counselling.
- **Analysis**: Compliance rates were calculated for each indicator to identify gaps in adherence.

Table 1: CRITEREA AND STANDARDS

S.No	Standards
1.	Diagnosis (Apgar ≤6, poor cry, or no respiratory effort).
2.	Resuscitation initiated promptly (airway, breathing, circulation).
3.	Oxygen therapy administered as per protocol.
4.	Hypoglycaemia prevention and treatment performed.
5.	Therapeutic hypothermia applied when criteria met.
6.	Seizure management conducted per STG (anti-seizure drugs given).
7.	Electrolytes monitored and corrected as indicated.
8.	Neurological status assessment documented.
9.	Infection prevention measures implemented.
10.	Discharge plan and caregiver counselling conducted.

RESULT

The overall compliance rate for PNA (Perinatal Asphyxia) management standards in June 2017 E.C. was **86%,** indicating generally strong adherence to the established protocols. This high rate reflects successful implementation across most critical areas of newborn care following potential asphyxia. Key life-saving interventions demonstrated exceptional compliance, achieving perfect 100% rates in diagnosis based on Apgar/presentation, prompt resuscitation initiation, appropriate oxygen therapy, therapeutic hypothermia application, seizure management, infection prevention, and discharge planning/counselling (**Table 2**).

The facility excelled in several fundamental and high-impact aspects of PNA management. Standards related to immediate life support and targeted interventions (Resuscitation, Oxygen Therapy, Therapeutic Hypothermia, Seizure Management) all achieved 100% compliance. Furthermore, critical preventative measures (Infection Prevention) and essential post-acute care processes (Discharge Planning/Counselling) also showed flawless adherence. Hypoglycemia prevention and treatment was also relatively strong at 80% compliance (**Table 2**).

Despite the high overall compliance, two specific standards showed significant deficits requiring urgent attention. Electrolyte monitoring and correction was severely lacking, with only 30% compliance (3 Yes, 7 No). Neurological status assessment also fell short of the target, achieving only 50% compliance (5 Yes, 5 No). These gaps represent critical vulnerabilities in the comprehensive management of asphyxiated newborns, as both electrolyte stability and neurological monitoring are essential for detecting complications and guiding ongoing treatment. Addressing these deficiencies should be a primary focus for quality improvement initiatives (**Table 2**).

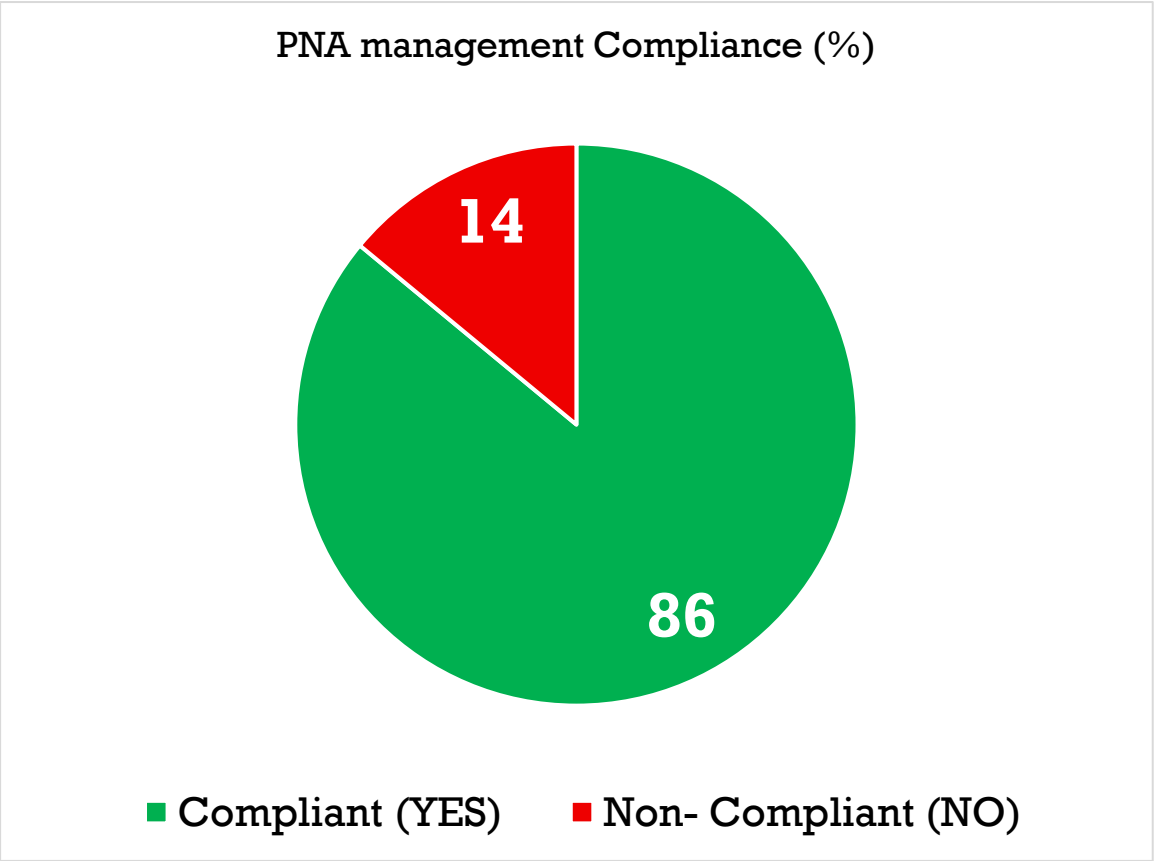

Figure 1: PNA management Compliance, June 2017E.C

Table 2: PNA management Compliance, June 2017E.C

S/N	Standards	Compliant (YES)	Non-Compliant (NO)	Percentage (%)
1.	Diagnosis (Apgar ≤6, poor cry, or no respiratory effort).	10	0	100
2.	Resuscitation initiated promptly (airway, breathing, circulation).	10	0	100
3.	Oxygen therapy administered as per protocol.	10	0	100
4.	Hypoglycemia prevention and treatment performed.	8	2	80
5.	Therapeutic hypothermia applied when criteria met.	10	0	100
6.	Seizure management conducted per STG (anti-seizure drugs given).	10	0	100
7.	Electrolytes monitored and corrected as indicated.	3	7	30
8.	Neurological status assessment	5	5	50
9.	Infection prevention measures	10	0	100
10.	Discharge plan and caregiver counselling conducted.	10	0	100
	Overall Compliance Rate	86/100	14/100	**86%**

DISCUSSION

The observed overall compliance rate of 86% for PNA management standards in June 2017 E.C. reflects a generally robust adherence to critical neonatal care protocols. This high performance is particularly commendable in life-sustaining interventions: perfect compliance (100%) was achieved in prompt diagnosis based on Apgar/criteria, immediate resuscitation, oxygen therapy, therapeutic hypothermia for eligible infants, seizure management, infection prevention, and discharge planning. These results indicate strong foundational practices in time-sensitive, high-acuity aspects of perinatal asphyxia care, likely contributing to reduced mortality and morbidity. The consistent 100% scores across seven standards demonstrate effective protocol implementation for core physiological stabilization and major complication management.

The 80% compliance in hypoglycemia prevention/treatment—while relatively strong—still warrants optimization given the profound neurodevelopmental risks of neonatal hypoglycemia in asphyxiated infants. Conversely, the exemplary compliance in therapeutic hypothermia (100%) suggests successful adoption of this complex, resource-intensive intervention. The contrast between high-performing standards and critical deficits implies that compliance challenges may stem less from resource limitations (given hypothermia success) and more from gaps in protocol reinforcement, staff awareness, or documentation systems for electrolyte/neuro-monitoring. Future efforts should prioritize: 1) Root-cause analysis of electrolyte management failures, 2) Standardized neurological assessment tools/training, and 3) Auditing hypoglycemia management processes. Sustaining strengths while targeting these specific deficiencies will enhance holistic PNA care quality.

RECOMMENDATIONS

- Perform Neurological assessment
- Perform Electrolyte test.

PERFORMANCE IMPROVEMENT PLAN

Area to improved	Actions to be taken	Responsible body	Timeline
Perform Neurological assessment	Write feedback to ward physicians.	Medical Director	2 weeks
Perform Electrolyte test	Write feedback to ward physicians.	Medical Director	2 weeks

REFERENCES

1. World Health Organization (WHO). (2023). Standards for Improving the Quality of Care for Small and Sick Newborns in Health Facilities. Geneva, Switzerland.
2. Ethiopian Ministry of Health. (2022). National Neonatal Care Guidelines. Addis Ababa, Ethiopia.
3. UNICEF. (2023). Guidelines for Strengthening Documentation and Monitoring in Neonatal Care Units.
4. Institute for Healthcare Improvement (IHI). (2021). Team-Based Care for Newborn Survival: Best Practices and Approaches.

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- **Garee tajaajila NICU irraa**
- **Garee Qulquullina Tajaajila Fayyaatiif**

Dhimmi: **waa'ee Gabaasa STG protocol mon erguu ilaala**

Akkuma mata Dureerrattii ibsamuuf yaalameettii **STG protocol mon "PNA"** Jedhamu kan **ji'a 1Offaa** bara **2017** xalayaa **Fuula 11** qabuu gaggeessituu kana waliin walqabsiifnee isiiniif eerguu keenya kabajaan isiniif beeksiifnaa.

Nagaya wajjiin!!