

SYNOPSIS REPORT

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SYNOPSIS

1. TITLE

Clinical Audit: Adherence to De-escalation of Antibiotics Based on Sensitivity to the strain of bacteria

2. INTRODUCTION / BACKGROUND

Antibiotic resistance is a major global health threat, often driven by overuse and inappropriate continuation of broad-spectrum antibiotics. De-escalation of antibiotics-narrowing or stopping therapy based on culture sensitivity results-is a key antimicrobial stewardship strategy. This audit aims to assess and improve adherence to de-escalation practices, promoting rational antibiotic use and reducing antimicrobial resistance by ensuring prescribing aligns with clinical guidelines and stewardship principles.

3. RESEARCH QUESTION

To what extent are clinicians adhering to antibiotic de-escalation protocols based on culture sensitivity results in a hospital setting?

4. OBJECTIVES

- Evaluate adherence to de-escalation practices.
- Identify reasons for non-adherence.
- Assess impact on patient outcomes.
- Implement an action plan for improvement.
- Plan for re-audit after interventions.

4. MATERIAL AND METHODS

Study Design

Retrospective clinical audit of patient records.

Setting

Tertiary care hospital, including various departments and wards.

Study Population

Inclusion Criteria:

1. Hospitalized patients who receive the empirical antibiotic therapy.
2. Patients with a culture and sensitivity report available during their hospital stay.
3. Patients who continue the antibiotic for 48 hours or more after culture results were obtained.

Exclusion Criteria:

1. Patients receiving prophylactic antibiotics.
2. Patients with polymicrobial infections requiring broad-spectrum therapy.
3. Immunocompromised patients (e.g., chemotherapy, transplant recipients).
4. Patients discharged before culture sensitivity results were available.

Study Tools

- Standardized audit checklist:
- Used to collect data on patient demographics,
- Name, Age ,Sex, Bed No, Dagnosis
- Empirical therapy,
- Dates of therapy ,
- Specimen sent (Y/N)
- Sent date
- culture results,
- escalation/de-escalation/maintenance decisions,
- Date of escalation/de-escalation/maintenance decisions
- justifications, and
- documentation.

Structured data abstraction tool: For systematic record review and extraction of relevant information from electronic health records.

Duration of Study

Data collection: 3 months.

Re-audit: Planned 6 months after intervention implementation.

Sample Size: Minimum of 50 patient records reviewed over a 3-month period, sampled from MICU, SICU hospital ward.

Sampling Technique: Purposive sampling based on the above inclusion and exclusion criteria.

Data Collection Procedure

1. Review of electronic medical records and paper-based files.
2. Collection of data on antibiotics prescribed, culture reports, timing of results, escalation/de-escalation/maintenance decisions, justifications, and documentation.

Operational Definitions

- ✓ **De-escalation:** Adjustment of empirical antibiotic therapy based on culture sensitivity (narrowing, switching, or stopping antibiotics).
- ✓ **Adherence:** De-escalation of antibiotics within 48 hours of culture result availability.
- ✓ **Non-adherence:** Continuation of broad-spectrum antibiotics without adjustment despite available sensitivity data.

6. DATA ANALYSIS PLAN

Key Metrics:

- De-escalation Rate = $(\text{De-escalated Cases} / \text{Total Eligible Cases}) \times 100$
- Escalation Rate = $(\text{Escalated Cases} / \text{Total Eligible Cases}) \times 100$
- Maintenance Rate = $(\text{No-Change Cases} / \text{Total Eligible Cases}) \times 100$
- Justification Adherence = $(\text{Non-De-escalations with Valid Justification} / \text{Total Non-De-escalations}) \times 100$
- Documentation Compliance = $(\text{Cases with Documentation} / \text{Total Cases}) \times 100$
- Specimen Sent Rate = $(\text{Number of "YES"} / \text{Total Patients}) \times 100$

Standards:

- De-escalation within 48 hours in $\geq 80\%$ of cases
- 100% documentation of de-escalation decision

7. Ethical Considerations

- **Ethical Approval:**

Ethical clearance will be obtained from the Institutional Ethics Committee prior to the commencement of the audit.

- **Informed Consent:**

As this is a retrospective review of patient records, an informed consent waiver is applicable. No direct patient contact or intervention is involved.

- **Confidentiality:**

All patient data will be anonymized and de-identified before analysis. Unique identifiers (such as UHID) will be coded to prevent identification.

- **Data Security:**

Data will be stored securely with access limited to authorized research team members. Electronic files will be password-protected, and paper records (if used) will be kept in locked cabinets.

- **Minimizing Risk:**

The audit involves minimal risk as it does not affect patient care or outcomes. No experimental interventions are performed.

- **Compliance with Guidelines:**

The audit will adhere to the principles outlined in the Declaration of Helsinki and relevant national/institutional research ethics guidelines.

8. IMPLICATIONS OF RESEARCH

- ✓ **Enhanced Stewardship:**

The audit will support the hospital's antimicrobial stewardship goals by identifying current gaps and implementing targeted interventions.

- ✓ **Better Clinical Outcomes:**

To Improve adherence to de-escalation protocols is expected to optimize antibiotic use, reduce antimicrobial resistance, and improve patient outcomes.

9. REFERENCES

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