CLINICAL AUDIT:

ADHERENCE TO DE-ESCALATION OF ANTIBIOTICS BASED ON SENSITIVITY TO THE STRAIN OF BACTERIA

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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.

AIM & PURPOSE

Aim: Assess and improve adherence to antibiotic de-escalation based on culture sensitivity results.

Purpose: Promote rational antibiotic use and reduce antimicrobial resistance by ensuring prescribing aligns with clinical guidelines and stewardship principles.

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.

METHODOLOGY

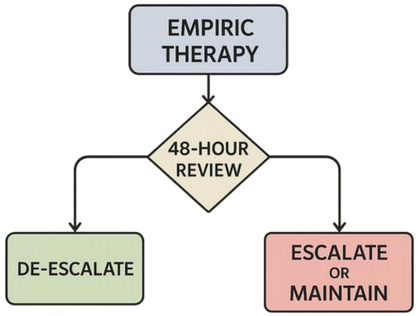
Design: Retrospective review of 50 patien records.

Inclusion:

- Hospitalized patients on empirical antibiotics
- Culture & sensitivity report available
- Antibiotics continued >48 hours post-culture

Exclusion:

- Prophylactic antibiotics
- Polymicrobial infections
- Early discharge before culture result



FLOWCHART DIAGRAM FOR ANTIBIOTIC THERAPY DECISION PROCESS BASED ON 48-HOUR CULTURE REVIEW

KEY METRICS TO CALCULATE

Metric	Formula	Standard
De-escalation Rate	(De-escalated Cases / Total Eligible Cases)× 100	≥80%
Escalation Rate	(Escalated Cases / Total Eligible Cases) × 100	Not specified
Maintenance Rate	(No-Change Cases / Total Eligible Cases) × 100	Minimize
Justification Adherence	(Non-De-escalations with Valid Justification / Total Non-De-escalations) × 100	100% documentation
Time to De-escalation	Average hours from culture result to adjustment	≥48 hours
Documentation Compliance	Cases with Documentation / Total Cases × 100	100%
Specimen Sent Rate	Total PatientsNumber of "YES"×100	100%

DATA COLLECTION

- Data sourced from electronic health records.
- Standardized tool included:
- Patient demographics
- Empirical therapy and changes (up to 6 choices)
- Dates of therapy and culture results
- Escalation/De-escalation/Maintenance decisions
- Justifications and documentation
- Tool- checklist

- PATIENT NAME
- UHID
- SEX
- DATE OF ADMISSION
- BED NO
- DAIGNOSIS
- EMPERICAL THERAPHY
- START DATE
- END DATE
- SPECIMEN SENT(Y/N)
- RESULT OF CULTURE

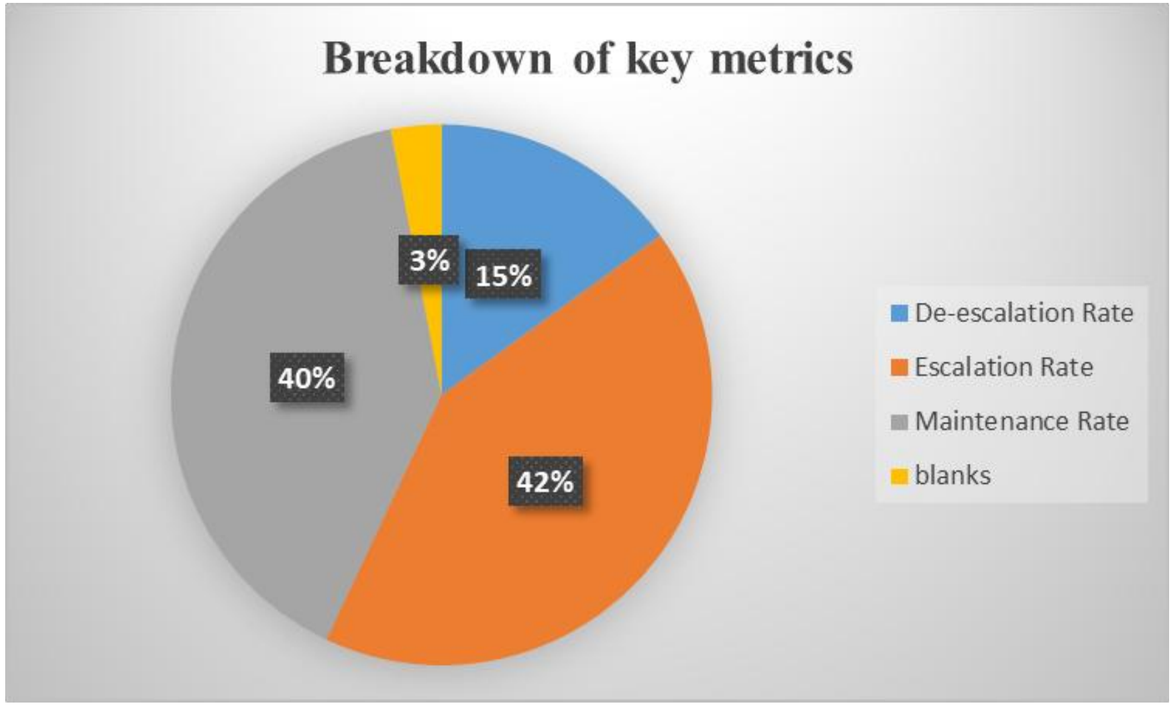
- ESCALATION/ DE- ESCALATION/ MAINTAINANCE
- JUSTIFICATION
- 2ND CHOICE OF ANTIBIOTIC
- START DATE

DATA COLLECTION PROCESS FLOW

DATA ANALYSIS

METRICS	COMPLIANCE	STANDARD	GAP
De-escalation Rate	15%	≥80%	-65%
Escalation Rate	42%	Minimize	High
Maintenance Rate	40%	Minimize	High
Justification Adherence	94%	100%	-6 %
Avg Time to De-escalation	110.4 hrs 15%	≥48 hrs	+62.4 hrs 85%
Documentation Compliance	89 %	100%	-11%
Specimen Sent Rate	100%	100%	0 %

KEY RESULT



NOTE: CALCULATED AS (NUMBER OF CASES IN EACH CATEGORY / TOTAL CASES) × 100.
BLANKS INCLUDE FILE NOT PRESENT IN BETWEEN TRACKING LIKE ECHO, CATH LAB, DISCHARGED PATIENT, DAMA

FINDINGS

CRITICAL COMPLIANCE GAPS:

DE- ESCALATION PERCENTAGE GAP-65%

- Clinical instability-12 CASES - 37%
- Suspected Microbial Infection-8 CASES -25%
- Awaiting further diagnostic results-6 CASES-19%
- No clear Justification / Documentations -6 CASES-19%

ESCALATION RATE GAP-58%

- Clinical stability -22%
- Patient improved or stable on current therapy
- Suspected microbial infection-15%(Gramstain,complex infection scenario)
- Pending cultures or imaging results -10%
- No clear justification/documentation-11%

MAINTENANCE RATE GAP -60%

- Culture showed sensitivity to narrower agent) -23%
- Clinical deterioration/resistant organism-18%
- Antibiotic cycling without clinical justification-8%
- No clear documentation/justification-12%

JUSTIFICATION ADHERENCE GAP :-6%

- No justification documented-4%
- Incomplete or vague justification-2%
- Documentation error/omission-0.25%

AVG TIME TO DE-ESCALATION:-85%

- Delay in reviewing culture results- 30%
- Ongoing sepsis-22%
- Awaiting further diagnostic clarification-15%
- Lack of stewardship prompts/reminders-10%
- No clear documentation/justification-8%

DOCUMENTATION ISSUES:-11%

- 3% non-de-escalation cases lacked justification
- 8% cases had incomplete therapy dates

NOTE: THE GAP ARE IN PERCENTAGE OF 100 %

CONCLUSION

STRENGTHS:

High rate of justification and documentation.

1.Gaps:
Low de-escalation rates and significant delays.

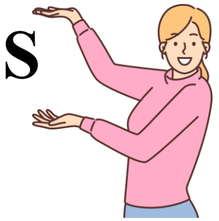
2.Escalation and maintenance of broad-spectrum antibiotics are frequent.

3. 100% Cultural sensitivity adherence

IMPLICATION:

Need for improved stewardship and timely review.

RECOMMENDATIONS



✅ Set Up EHR Alerts

- Trigger automatic alerts in the hospital's system to remind doctors to review culture results and adjust antibiotics accordingly.

✅ Monthly Stewardship Rounds

- Hold monthly multidisciplinary meetings (ID specialists, pharmacists, microbiologists) to review antibiotic decisions and promote best practices.

✅ Educate Prescribers

- Conduct targeted training sessions on de-escalation, resistance patterns, and updated guidelines using real case examples.

✅ Update Guidelines

- Revise and circulate updated antibiotic protocols across all departments with clear escalation/de-escalation criteria.

✅ Monitor & Feedback Quarterly

- Track key metrics (de-escalation rate, documentation) and share results every quarter to reinforce accountability and improvement.

RE-AUDIT & NEXT STEPS

1. RE-AUDIT PLANNED IN 6 MONTHS POST-INTERVENTION.

2. MEASURE IMPROVEMENTS IN:

- DE-ESCALATION RATES
- TIMELINESS OF THERAPY ADJUSTMENT
- DOCUMENTATION QUALITY CONTINUE CYCLE FOR SUSTAINED IMPROVEMENT.


Thank
you