SASPI

NEWSLETTER

MONDAY MARCH 2026

FROM EVIDENCE TO ACTION IN ANTIMICROBIAL STEWARDSHIP

SPECIAL COLLABORATION

SASPI with AIIMS Nagpur

Expert perspectives on antimicrobial resistance, stewardship, rapid diagnostics, and rational antibiotic use from leading clinicians and microbiologists at AIIMS Nagpur.

Society of Antimicrobial Stewardship Practices (SASPI)

Empowering healthcare professionals through education, collaboration, and evidence-based antimicrobial stewardship.

All India Institute of Medical Sciences, Nagpur

Collaborating with SASPI to advance antimicrobial stewardship, combat antimicrobial resistance, and promote rational antibiotic use across healthcare settings

> “Antimicrobial resistance is not a future threat—
> it is a present challenge demanding collective action,
> responsible prescribing,
> and strong stewardship.”

FEATURED ARTICLES

- When Medicine Stops Working: The AMR Crisis
- Speed Without Strategy? AMSP Is the Missing Link
- New Oral Antibacterials for uUTI: Stewardship Perspective

FOCUS AREAS

- Antimicrobial Resistance
- Diagnostic & Antimicrobial Stewardship
- Infection Prevention & Control
- Rational Antibiotic Use in India

Editor's Note

Dr Bhawna Sharma
Editor, Newsletter SASPI
Assistant Professor
Department of Microbiology
AIIMS Bathinda

Advancing Structured Stewardship Across Institutions

It is my privilege to present this special issue of the Society of Antimicrobial Stewardship Practices in India Newsletter in collaboration with All India Institute of Medical Sciences Nagpur. This edition is not merely a compilation of articles—it is a reflection of structured governance, multidisciplinary teamwork, and measurable action in antimicrobial stewardship. Our objective remains consistent: to provide a professional, evidence-based platform that enables institutions to share stewardship models that are practical, scalable, and impactful.

From Policy to Practice: The AIIMS Nagpur Experience

What makes this collaboration particularly significant is the operational depth demonstrated by AIIMS Nagpur. Their Antimicrobial Stewardship Programme (AMSP) reflects structured institutional commitment—documented antimicrobial indications, antibiotic "time-outs," prospective audit and feedback, AWaRe-aligned monitoring, and surgical prophylaxis optimization.

Equally commendable is the strong integration of Infection Prevention and Control (IPC) with stewardship activities. The data-driven monitoring of CAUTI and CLABSI rates, Root Cause Analysis of healthcare-associated infections, WHONET-supported antibiograms, and NABH-aligned policies illustrate how stewardship thrives when supported by surveillance and accountability mechanisms.

This edition also highlights microbiology-driven stewardship—rapid diagnostics, MALDI-TOF identification, molecular platforms, and accelerated antimicrobial susceptibility testing—ensuring that prescribing decisions are evidence-based and time-sensitive.

Academic Leadership and Innovation

As an Institute of National Importance, AIIMS Nagpur demonstrates how stewardship must extend beyond hospital corridors into academic training and research. The 5Ts framework study, postgraduate IPC training initiatives, and ongoing point-prevalence surveys reinforce that stewardship is both a clinical and scholarly responsibility.

The pharmacology updates on newly approved oral antibacterials for uncomplicated UTI remind us that therapeutic innovation must always be accompanied by stewardship safeguards. Access agents must be preserved, Watch agents rationalized, and Reserve agents protected through strict governance.

Building a National Stewardship Network

Through this collaboration, SASPI reiterates its commitment to fostering institutional partnerships across India. By documenting successful models, sharing audit frameworks, and encouraging resident participation, we aim to build a nationwide culture of rational antimicrobial use.

As Editor, I encourage clinicians, microbiologists, pharmacologists, residents, and policymakers to engage actively with SASPI—through contributions, constructive dialogue, and collaborative research. Let this newsletter not merely inform but inspire measurable change in prescribing behavior and infection control practices.

Together, through structured governance, academic excellence, and shared accountability, we can protect antimicrobial effectiveness for future generations.

The fight against AMR begins with awareness, responsibility, and action—today.

EXECUTIVE DIRECTOR'S MESSAGE

DR PRASHANT P JOSHI

Hon'ble Executive Director
AIIMS, Nagpur

AIIMS Nagpur is committed to addressing antimicrobial resistance as a critical national and global public health priority. In line with this objective, the institute has initiated a comprehensive, multidisciplinary Antimicrobial Stewardship Program (ASP) designed to strengthen evidence-based antimicrobial use across clinical services.

Several components of Integrated Antimicrobial Stewardship (IAS) are currently operational, implemented through coordinated efforts of the Departments of Microbiology, Pharmacology, Hospital administration and Clinical departments. These structured interventions have contributed to a reduction in inappropriate broad-spectrum antibiotic utilization, a decline in hospital-acquired infections, and improved overall clinical outcomes.

The institute recognizes the importance of knowledge sharing and capacity building in advancing stewardship practices. Dissemination of these structured initiatives via the SASPI platform is expected to facilitate the adoption of context-appropriate stewardship models by other healthcare institutions, supporting national efforts to optimize antimicrobial use and enhance patient safety.

AIIMS Nagpur remains dedicated to strengthening institutional systems and collaborative partnerships to meaningfully contribute to safeguarding antimicrobial effectiveness and improving public health outcomes.

ANTIMICROBIAL STEWARDSHIP CORE-COMMITTEE, AIIMS, NAGPUR :

Name	Designation	Role
Dr. Nilesh Nagdeve	Medical Superintendent	Chairperson
Dr. Ganesh Dakhale	Professor and Head, Dept. of Pharmacology	Co-chairperson
Dr. Meena Mishra	Professor and Head, Dept. of Clinical Microbiology	Co-chairperson
Dr. Anant Khot	Additional Professor, Pharmacology	Member Secretary
Dr. Neeta Gade	Additional Professor, Clinical Microbiology	Member
Dr. Divish Saxena	Associate Professor, Dept. of Surgery	Member
Dr. Udit Narang	Associate Professor, Dept. of Medicine	Member
Dr. Alok Umredkar	Associate Professor, Dept. of Neurosurgery	Member
Dr. Nitin Marathe	Associate Professor, Hospital Administration	Member
Dr. Abhijit Chaudhary	Associate Professor, Dept. of Pediatrics	Member
Dr. Saurabh Shah	Associate Professor, Dept. of Orthopedics	Member
Dr. NK Joshi	Assistant Professor, Dept. of Anesthesiology	Member
Dr. Khushboo Bisht	Assistant Professor, Dept. of Pharmacology	Alternate Member Secretary
Dr. Latika Bajaj	Nursing Superintendent	Member
Ms Shilpa	Senior Infection control Nurse	Member
Ms Tejswini Sabale	Infection control Nurse	Member

Integrated Antimicrobial Stewardship (IAS) Practice Statements -Being followed at AIIMS, Nagpur

1. The hospital should have a policy that requires prescribers to document in the medical record or during order entry - dose (including loading dose), creatinine clearance, route, duration, stop date, and indication for all antimicrobial prescriptions. (Proof-Attached as an annexure-1)
2. The hospital should set various methods of monitoring by the pharmacologist or pharmacist for ensuring rational antimicrobial use.
3. The hospital should have a policy that specifies antimicrobials timeout practices: Hospital is following the antimicrobial timeout of 48-72 hrs as per the standards. The audit of the same need to be done

ANTIMICROBIAL STEWARDSHIP PROGRAMME (AMSP) AT AIIMS NAGPUR

Dr Anant Khot & Dr. Khushboo Bisht
Department of Pharmacology,
All India Institute of Medical Sciences, Nagpur

PRACTICAL STEWARDSHIP FOR SAFER OUTCOMES, SMARTER ANTIBIOTIC USE, AND RESISTANCE CONTAINMENT

Antimicrobial resistance (AMR) is a daily clinical constraint that increases morbidity, prolongs hospitalization, raises costs, and narrows effective therapeutic options. In tertiary care where critical illness, invasive devices, and broad-spectrum exposure are common stewardship is a core patient-safety function. AIIMS Nagpur is strengthening its Antimicrobial Stewardship Programme (AMSP) as a structured, clinician-supportive initiative to ensure the right antibiotic, at the right dose, by the right route, for the right duration, with timely de-escalation wherever feasible.

DR ANANT KHOT

AMSP in clinical practice: what it aims to change

AMSP supports bedside prescribing to minimize avoidable exposure and collateral harm, improve early response through optimized empiric therapy and dosing, prevent toxicity in vulnerable patients, and reduce resistance selection through rational, review-based antimicrobial use.

Key AMSP practices at AIIMS Nagpur

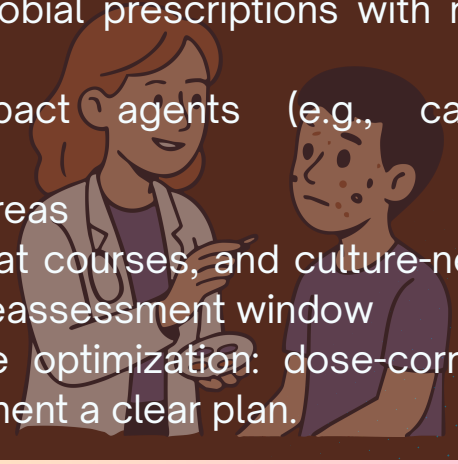
1- Evidence-based institutional guidance (syndrome-based, locally relevant) – led by the AMSP Committee

AMSP promotes standardized, indication-driven antibiotic selection aligned with accepted guidance and local susceptibility patterns, emphasizing empiric pathways, escalation/de-escalation triggers, and recommended durations while preserving clinician autonomy for patient-specific needs.

2- Prospective Audit and Feedback (PAF): stewardship at the point of care – led by Clinical Pharmacology

Targeted review of antimicrobial prescriptions with rapid, collegial feedback prioritizes:

- Broad-spectrum/high-impact agents (e.g., carbapenems, anti-MRSA agents, polymyxins)
- ICU and other high-risk areas
- prolonged therapy, repeat courses, and culture-negative sepsis continued beyond an appropriate reassessment window
- The focus is actionable optimization: dose-correct, narrow, stop when inappropriate, and document a clear plan.



3- Antibiotic "time-out" (Day-3/Day-5 review) to reduce prolonged empiricism – implemented in NICU & PICU by the Paediatrics team

A structured reassessment at 48–72 hours (and again at day 5 when relevant) addresses four decisions: ongoing indication, de-escalation feasibility, stop decision, and planned total duration with a review date, improving documentation and reducing unnecessary broad-spectrum days.

4- AWaRe-aligned monitoring and rationalization – supported by Hospital Administration

Where feasible, antimicrobial use is reviewed using WHO AWaRe (Access/Watch/Reserve) to increase appropriate Access use, ensure documented justification and review points for Watch agents, and limit Reserve antibiotics to clearly recorded indications with stewardship oversight providing an audit-ready lens that balances timely effective therapy with resistance containment.

Surgical Antimicrobial Prophylaxis (SAP): Implementation Checklist (Policy → Practice)

OPERATIONAL FLOW: OT → ward pathway defined for each unit/service

TIMING: correct pre-incision window; intra-op re-dosing criteria defined (duration/blood loss)

CHOICE: procedure-appropriate agent selection as per Institute SAP Policy

DURATION: avoid unnecessary post-op continuation; stop per policy-defined endpoint

DOCUMENTATION: indication, agent, timing, dose, and stop/review point recorded

AUDIT & FEEDBACK: periodic SAP audits with structured feedback to teams

MICROBIOLOGY LINKAGE: antibiogram-informed updates and targeted refinements based on SSI trends

STEWARDSHIP IS A SHARED RESPONSIBILITY: These initiatives like AMSP Committee-led governance, AWaRe-aligned monitoring, NICU/PICU antibiotic time-outs, and SAP policy implementation strengthen patient safety today while protecting antimicrobial effectiveness for the future.

Pharmacology Pearls:

New Oral Antibacterials for Uncomplicated UTI: Pharmacology, Positioning, and Stewardship in the Indian Context

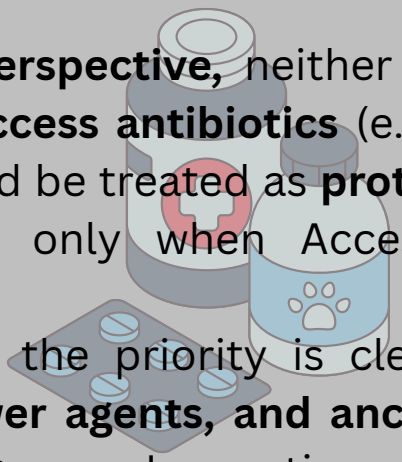
Dr Khushboo Bisht

Assistant Professor, Pharmacology, AIIMS, Nagpur

Uncomplicated urinary tract infection (uUTI) is one of the most common indications for antibiotic use in outpatient care and a major contributor to irrational prescribing in India. Against this background, recent USFDA approvals of Orlynvah® (sulopenem etzadroxil + probenecid) and Blujepa® (gepotidacin) represent important pharmacological advances. However, their clinical value will depend on how judiciously they are positioned within Antimicrobial Stewardship Programs (AMSPs).

Orlynvah is an oral penem prodrug administered with **probenecid,** which inhibits renal tubular secretion and enhances systemic sulopenem exposure. It is approved for **adult women with uUTI who have limited or no alternative oral options.** Phase 3 trials demonstrated clinical efficacy comparable to fluoroquinolones; however, concerns remain regarding post-treatment bacteriuria and the broader ecological impact of an oral β-lactam closely related to carbapenems. In the Indian setting—where carbapenem resistance among Enterobacterales is already high—unrestricted use could undermine carbapenem-sparing strategies.

Blujepa (gepotidacin) is a first-in-class inhibitor of bacterial DNA gyrase and topoisomerase IV, mechanistically distinct from fluoroquinolones. Approved for female adults and adolescents, it has shown non-inferiority to nitrofurantoin in randomized trials. While its novel mechanism is attractive, early overuse risks rapid resistance emergence, particularly in high-volume syndromes such as uUTI.



From an **AWaRe perspective,** neither agent should be viewed as a replacement for **Access antibiotics** (e.g., nitrofurantoin, fosfomycin). Instead, they should be treated as **protected, stewardship-controlled options,** deployed only when Access agents are unsuitable or ineffective.

For Indian AMSPs, the priority is clear: **preserve first-line Access drugs, restrict newer agents, and anchor decisions in microbiology and local antibiograms.** Innovation without stewardship will only accelerate resistance.

Mechanism of Action:

a) Sulopenem: β-lactam (penem); inhibits bacterial cell wall synthesis

b) Gepotidacin: Novel topoisomerase II inhibitor (non-fluoroquinolone**)**

Feature	Sulopenem (Orlynvah)	Gepotidacin (Blujepa)
Class	Penem (Cell Wall Inhibitor)	Triazaacenaphthylene (DNA Inhibitor)
US Status	Launched (Aug 2025)	Launched (Late 2025)
Unique Benefit	First oral penem for uUTI	Avoids fluoroquinolone cross-resistance
AWaRe Category	**Watch / Reserve**	**Reserve**

Pharmacokinetics

- **Sulopenem:** Oral prodrug; exposure enhanced by probenecid. It is stable against many ESBLs and AmpC enzymes.
- **Gepotidacin:** Good oral bioavailability; distinct PK from fluoroquinolones. Gepotidacin is unique because it provides "well-balanced inhibition" of both DNA gyrase and Topoisomerase IV. This is a critical stewardship point: a single mutation in the bacteria is unlikely to cause resistance, unlike the rapid resistance seen with Fluoroquinolones (Ciprofloxacin).

Regulatory Status Update (January 2026)

- Orlynvah® (Sulopenem/Probenecid): It was FDA-approved on October 25, 2024, and commercially launched in the U.S. in August 2025.
- Blujepa® (Gepotidacin): As of early 2026, Blujepa is no longer just "recently approved" for uUTI; it has also received a supplemental FDA approval for uncomplicated urogenital gonorrhea (granted in December 2025).

Pricing & Market Dynamics

- **U.S. Pricing (Orlynvah):** Your "thousands of USD" figure is accurate for the list price. Currently, the average retail price is approximately $3,500 per course, though GoodRx and payer contracts can bring it down to roughly $2,800.
- **Indian Pricing (Orlynvah):** The mention of ₹25,000 per box on Tradeindia likely refers to unregulated gray-market imports or "named patient" sourcing rather than an official Indian retail launch price.
- Official Indian pricing from Iterum Therapeutics (or a local partner) is still pending regulatory clearance from the CDSCO. The Tradeindia price reflects import costs rather than local market MRP.

Stewardship Callout

- Do not displace Access agents
- Restrict to culture-supported or no-alternative scenarios
- Prevent off-label drift into complicated UTI
- In the Indian context, these agents should be reserved for cases where 'Access' drugs (Nitrofurantoin/Fosfomycin) show resistance, and 'Watch' drugs (Fluoroquinolones/Cephalosporins) are contraindicated or resisted, to prevent the rapid emergence of carbapenem-resistant Enterobacterales (CRE).
- In regions with high ESBL-producing E. coli prevalence (common in urban India), Orlynvah provides a much-needed oral "carbapenem-like" option. However, to prevent the "creeping" of Carbapenem-Resistant Enterobacterales (CRE) into the community, its use must be strictly gated behind culture-sensitivity reports showing resistance to Nitrofurantoin and Fosfomycin.

Summary Table

Feature	Nitrofurantoin (Standard)	Orlynvah® (Sulopenem)	Blujepa® (Gepotidacin)
Drug Class	Nitrofuran	Penem (β-lactam)	Triazaacenaphthylene
Dosing (uUTI)	100 mg BID x 5 days	1 tab (500/500mg) BID x 5 days	1500 mg BID x 5 days
Success Rate	~44–47%	~62% (vs Amox/Clav)	**~51–58%** (vs Nitrofurantoin)
Common ADRs	Nausea (4%)	Diarrhea (10%), Nausea	**Diarrhea (14–18%)**, Nausea
Key Advantage	High local experience; Cheap	Stability against **ESBL/AmpC**	**First-in-class**; No FQ cross-resistance
India Context	**Access** (First-line)	**Watch/Reserve**	**Reserve**

References

1. Dunne MW et al. Clin Infect Dis. 2023.
2. Wagenlehner F et al. Lancet Infect Dis. 2024.
3. USFDA Drug Approval Announcements (Orlynvah®, Blujepa®).
4. CenterWatch. USFDA Updates – Anti-infectives.

Infection Control and Stewardship

Dr Meena Mishra
Professor and Head
Department of Clinical Microbiology,
AIIMS, Nagpur

Data-Driven Infection Control

TEAM WORK

– Dr. Neeta Gade
Infection control officer
– Shilpa ICNO
– Tejaswini ICNO
– Harish ICNO
– Amandeep ICNO

AIIMS Nagpur has strengthened its leadership in patient safety and quality care by successfully completing the NABH accreditation assessment. This achievement highlights the institute's Infection Prevention and Control (IPC) framework as a model for excellence in patient safety and antimicrobial stewardship.

I. Clinical Excellence & Standardized Surveillance

IPC strategy is built on a data-driven approach to minimize hospital-associated risks:

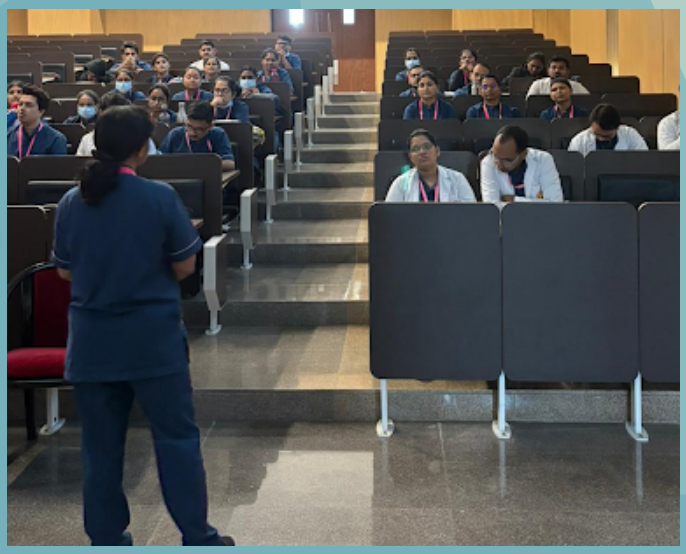
- ***Accredited Safety Standards:*** Comprehensive Institutional Infection Control Manual is maintained and is shared with all stakeholders. It is reviewed yearly to stay aligned with NABH requirements.
- ***Regular Audits:*** Continuous monitoring of Hand Hygiene compliance by direct observation and Bio-Medical Waste (BMW) segregation, injection safety ensures that biological safety is maintained at every point of care.
- ***Active Surveillance & RCA:*** Active daily surveillance for Healthcare-Associated Infections (HAIs) specifically targeting ICUs, transplant units and wards . This includes monitoring for Catheter-Associated Urinary Tract Infections (CAUTI), and Central Line-Associated Bloodstream Infections (CLABSI) , Ventilator-Associated Events (VAE), Surgical site infections. To keep infection rates below national benchmarks, Care Bundles are implemented and monitored. These are sets of proven, bedside practices that, when followed perfectly, act as a shield against infections Every time a healthcare-associated infection is identified, it undergoes a Root Cause Analysis (RCA) to identify gaps and prevent future incidents.
- ***Every Needle Stick Injury (NSI)*** is meticulously recorded and managed. Immediate post-exposure prophylaxis is provided when needed, while investigating the incident to improve sharp disposal protocols and bedside safety.

II. Regular HICC meetings :

Monthly HICC meetings are conducted to bridge the gap between data and action. These serve as a vital collaborative platform where clinical departments, nursing staff, and administration join to review institutional infection trends. Monthly rates of HAIs (like VAP or CLABSI) and antimicrobial consumption , Hand hygiene compliance are presented.

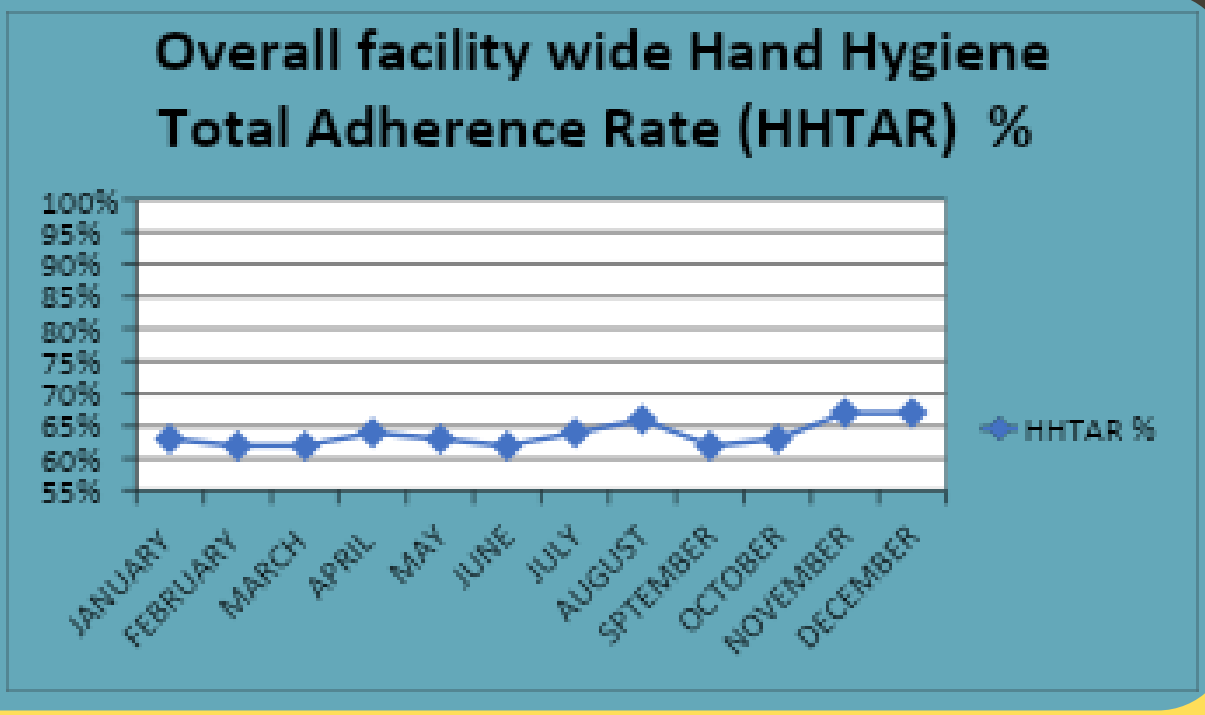
- ***Quality Indicators:*** Every month, the committee analyses critical performance indicators, including Healthcare-Associated Infections (HAIs) rates alongside antimicrobial consumption patterns and hand hygiene compliance rates.
- ***SSI Monitoring:*** Surgical Site Infections (SSI) surveillance with detailed analysis of causative pathogens and their AST patterns.
- ***Corrective Action:*** By discussing a Root Cause Analysis (RCA) on any increase in infection rates, the committee implements immediate corrective actions.
- ***Dynamic Policy Updates:*** This continuous oversight allows us to update institutional policies in real-time, maintaining the highest standards of patient care.

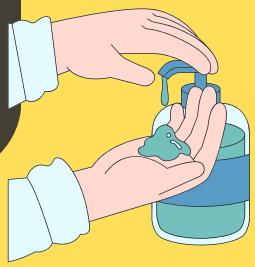
III. Human Resource Empowerment: Beyond mandatory induction, staff in high-risk areas like ICUs, wards, and OTs receive targeted refresher IPC training based on training needs assessment.



Link Nurse Training

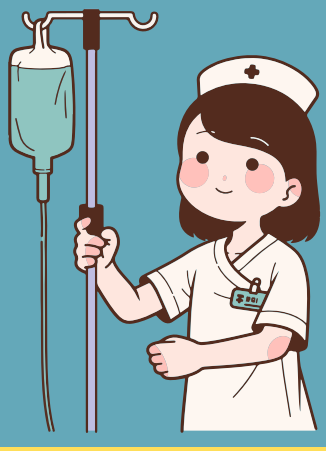
Training of Sanitary attendants





CAUTI Snapshot – 2025

- Total Catheter days: 52885
- Overall CAUTI rate: <1 per 1000 catheter days
- Benchmark: ≤ 3
- Benchmark achieved: Yes (all months)



CLABSI Snapshot – 2025

- Total central line days: 24,224
- Overall CLABSI rate: < 1 per 1000 CL line days
- Benchmark: ≤ 5
- Benchmark achieved: Yes (all months)

Academic Insights:

As an Institute of National Importance (INI), AIIMS Nagpur is committed to shaping the next generation of "Stewardship Leaders":

- **Integrated PG Training:** MD Microbiology residents rotate through clinical departments, linking diagnostic microbiology with bedside antibiotic use.

- **PDCC course :** PDCC course in Infection Prevention and Control (IPC) and Infectious Disease is designed with inclusion of advanced, comprehensive curriculum in Antimicrobial Stewardship Programs (AMSP). The program equips participants with the knowledge and skills to design, implement, and lead effective stewardship initiatives, addressing the growing challenge of multi-drug resistance.

- **Public Health Impact:** Regular observation of World Antimicrobial Awareness Week (WAAW), IPC week, Hand Hygiene Day through variety of activities like Nukkad Natak, poster competition for students and staff, ***"Go Blue"*** awareness campaign, Rotating Best ward /Critical area Award etc.

AIIMS NAGPUR: WAAW 2025 (18TH TO 24TH NOVEMBER)

POSTER COMPETITION ON WAAW 2025

GO BLUE CAMPAIGN – WAAW 2025

BEST WARD /CRITICAL AREA AWARD 2025

ROLE PLAY WAAW 2025

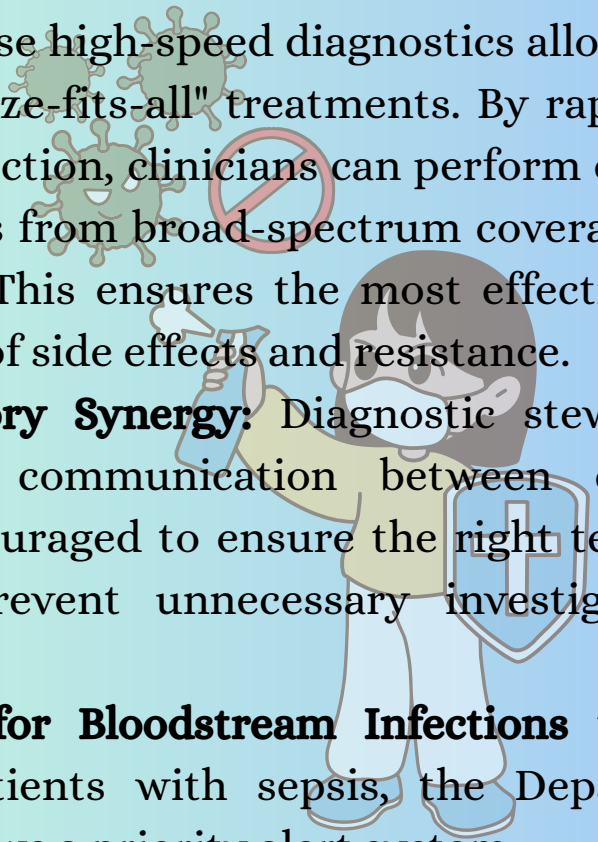
Microbiology driven AMS:

The **Department of Clinical Microbiology** serves as the backbone of our stewardship efforts, providing 24/7 laboratory support to ensure that every antimicrobial decision is is evidence-based.

1. Advanced Diagnostic Infrastructure: Clinical Microbiology NABL-accredited and is equipped with sate of art equipment for rapid and accurate results:

- Automated Systems: Blood culture, bacterial identification, and susceptibility testing.
- Cutting-Edge Tech: Utilizing MALDI-TOF Mass Spectrometry for instant pathogen identification and Nanopore Sequencing for deep genetic analysis.
- Rapid Molecular Testing: Availability of Platforms like FilmArray (BioFire), GeneXpert, and Real-time PCR help to detect resistance mechanisms in hours rather than days.

2. **Optimization:** These high-speed diagnostics allow clinicians to move away from "one-size-fits-all" treatments. By rapidly identifying the exact cause of infection, clinicians can perform early "de-escalation", switching patients from broad-spectrum coverage to more specific, safer antibiotics. This ensures the most effective treatment while reducing the risk of side effects and resistance.
3. **Clinician-Laboratory Synergy:** Diagnostic stewardship is a team effort. Constant communication between clinicians and the laboratory is encouraged to ensure the right test is ordered at the right time to prevent unnecessary investigations and reduce healthcare costs.
4. **Rapid Response for Bloodstream Infections** to ensure the best outcomes for patients with sepsis, the Department of Clinical Microbiology follows a priority alert system



- **Critical Alerts:** As soon as a blood culture flags positive, Gram stain findings are communicated on priority to the treating clinician via the critical alert system.
- **Accelerated Testing:** Rapid Antimicrobial Susceptibility Testing (AST) is immediately initiated upon pathogen detection. This is followed by confirmatory testing using the VITEK-2 system. MALDI-TOF mass spectrometry is used for rapid pathogen identification. This guarantees diagnostic accuracy while significantly reducing the time to start targeted treatment.
- **Targeted Therapy:** This streamlined approach enables prompt initiation of targeted antimicrobial therapy, minimizes empirical broad-spectrum antibiotic use, and reinforces institutional antimicrobial stewardship efforts, ultimately improving patient outcomes in bloodstream infections

5. **Collaborative Practice:** Through regular interdepartmental discussions, diagnostic practices are implemented to ensure they remain patient-cantered and clinically relevant.

6. **Guided Empirical Therapy:** Periodic institutional antibiograms, generated through WHONET-based surveillance, are regularly circulated among clinicians to guide empirical antimicrobial selection based on local resistance patterns.

Research project undertaken

Title: Impact of 5Ts- timing, infusion type, antibiotic appropriateness, de-escalation time, and diagnostic stewardship on clinical outcome in patients admitted in intensive care units (ICUs): a multicenter, record based cross sectional study.

Authors : *Dr Nandini A1, Dr Anant Khot1, Dr. Priyanka Sonwane2, Dr Ganesh Dakhale1*

1. Department of Pharmacology, AIIMS, Nagpur
2. Department of Pharmacology, N.K.P. Salve Institute of Medical Sciences and research centre, Nagpur,

Though initially planned for 3 centres, one centre did not contribute or participate in the study. The findings of the same is mentioned below

ABSTRACT

INTRODUCTION:

Antimicrobial resistance is a significant concern in intensive care units (ICUs), with inappropriate antimicrobial use reported in 30-60% of cases. This study builds on existing antimicrobial stewardship frameworks like the sepsis bundle, by evaluating the effect of the 5Ts (Timing, infusion Type, appropriaTeness, de-escalation Time, and Type of test [Diagnostic Stewardship]), on clinical outcomes in ICU patients.

METHODS

A cross-sectional study was conducted using medical records of 100 adult ICU patients across two tertiary care centres between March and August 2023. Parameters assessed included antimicrobial initiation time, infusion type, appropriateness (using antimicrobial spectral index, ASI), de-escalation time, inflammatory markers and culture results, on 28-day mortality. “Unknown prior antibiotic exposure” meant unclear or undocumented antimicrobial use before ICU admission.

RESULTS

Out of 100 records (age 52.95 ±17 years) in which 69 were of males and 31 were of females, the 28-day mortality was 52%. Higher ASI was associated with increased mortality (OR: 1.18; p=0.033). Unknown prior antibiotic exposure showed a strong association (OR: 27.3; p<0.001). Therapy guided by inflammatory markers was associated with lower mortality (OR: 0.27; p=0.072). No significant association was seen with time to initiation, de-escalation, or microbiological cultures. Multivariate analysis confirmed ASI and prior exposure as key predictors.

DISCUSSION

The 5Ts framework provides a structured approach to help guide decision-making in critical care settings. Selecting appropriate antimicrobials, documenting prior exposure and utilization of inflammatory markers may improve outcomes. Limitations include retrospective design, small sample size, missing data, and absence of continuous or extended infusions. Further validation in prospective cohorts is necessary.

The study findings were presented in a national conference in November 2025

On going study:

Point Prevalence Survey of Antimicrobial Use in Paediatric ward, Neonatal and Paediatric Intensive Care Units at a Tertiary Care Hospital

PI: Dr Anant Khot, Additional Professor, Department of Pharmacology, AIIMS, Nagpur

Co-PI: Dr Sanket Gaikwad, Senior resident, Department of Pharmacology, AIIMS, Nagpur

Dr Ganesh Dakhale, Professor & Head, Department of Pharmacology, AIIMS, Nagpur

Annexure 1:

अखिल भारतीय आयुर्विज्ञान संस्थान नागपुर
प्लॉट नं. 2, सेक्टर 20, मिहान, नागपुर - 441108
ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NAGPUR.
Plot No 2, Sector 20, MIHAN, Nagpur- 441108
Website:- www.aiimsnagpur.edu.in E-mail:- pharmacaiims@gmail.com
Department of Pharmacology

CLINICAL PHARMACOLOGY PATIENT SERVICES

Patient ID:	Date of first entry:	Consultant in-charge :
Age(Y/M/D):	Ward/ Unit:	Department:
Sex:	DOA:	UHID No.
Weight:	RESIDENCE:	Final Review DATE:
DIRECT/ EMERGENCY/ OPD Admission		Initial Review Date: ACTION: Escalate/De-escalate/ Stop/Switch
Previous Hospitalization History:		
Diagnosis:		
SURGICAL PROCEDURES:		
SEPSIS: Yes/ No Proven/ Probable Reason:		Source:
Comorbid Illness:		
H/O AMAs Use (Dose/ Frequency/ RoA/No. of doses) :		

AMAs PRESCRIPTION

NAME OF AMA	Type of therapy (E/P/L)	Start Date	Stop Date	Dose/Frequency/ RoA	Reason for starting	C/s sent before starting AMAs?	Rationality/ Indication

CULTURES

SPECIMEN	Date Sent/ Date Received	Sterile/ Organism	Sensitive to	Resistant to

Date	Hb	TLC	N	L	PLT	RBC	Bilirubin Total	Albumin	Globulin	Procal.	D-Dimer	CRP	Lactate	Create.	Urea	BUN	Na+	K+
DAY 1																		
DAY 3																		
DAY 5																		
DAY 7																		
DAY 10																		
DAY 14																		
DAY 28																		

Date	Temp.	No. of Devices	SpO2	RR	GCS	HR	RBS	BP	Inotropes	CXR	Other Investigations	Diagnosis Update	AMAs continuation post discharge?
DAY 1													
DAY 3													
DAY 5													
DAY 7													
DAY 10													
DAY 14													
DAY 28													

DEVICES:
1.Indwelling Urinary Catheter
2. Peripheral Vascular Catheter
3. Central Vascular Catheter
4. Non- Invasive Mechanical Intubation
5. Invasive Respiratory Endotracheal Intubation
6. Inserted Tubes and Drains

TICK WITH DATE:
- ☐ Discharged
- ☐ Transferred to:
- ☐ LAMA

7th Day Follow up after any one of the above:

28th Day Follow up after any one of the above:

Final Condition with Date:

If applicable, Reason of death as per the Death Certificate:

COMMENTS:

Annexure 2:

अखिलभारतीयआयुर्विज्ञानसंस्थान,नागपुर
ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NAGPUR
Plot no 2, Sector 20, MIHAN, Nagpur-441108

ANTIMICROBIAL DRUGS

Name of patient:		C.R. No.										
Age/Sex:	Ward:	ALT :	Serum Creatinine:									
To be filled by Physician **(IN CAPITAL LETTERS)**	**Drug administration records - To be filled by Nursing officer**											**STOP ORDERS**
LIST OF PRESCRIBED DRUGS (GENERIC NAMES) Date:	Date:		Date:		Date:		Date:		Date:			Dr's Name & Sign
	Time	Name & Sign	Time	Name & Sign	Time	Name Sign &	Time	Name & Sign	Time	Name & Sign		
Drug Name:	DAY :		DAY :		DAY :		DAY :		DAY :			
Indication:												
Loading Dose:												
Maintenance dose:												
Route: **Freq.:**												
Remarks:												
Doctor's name & sign:												
Drug Name:	DAY :		DAY :		DAY :		DAY :		DAY :			
Indication:												
Loading Dose:												
Maintenance dose:												
Route: **Freq.:**												
Remarks:												
Doctor's name & sign:												
Drug Name:	DAY :		DAY :		DAY :		DAY :		DAY :			
Indication:												
Maintenance dose:												
Route: **Freq.:**												
Remarks:												
Doctor's name & sign:												
Drug Name:	DAY :		DAY :		DAY :		DAY :		DAY :			
Indication:												
Maintenance dose:												
Route: **Freq.:**												
Remarks:												
Doctor's name & sign:												
Drug Name:												
Indication:												
Maintenance dose:												
Route: **Freq.:**												
Remarks:												
Doctor's name & sign:												

AIIMS NAGPUR/NABH/PTC/01/V.2

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MARK YOUR CALENDAR – ASPICON 2026!

8TH NATIONAL CONFERENCE OF THE SOCIETY OF ANTIMICROBIAL STEWARDSHIP PRACTICES IN INDIA

Theme:
Integrated Antimicrobial Stewardship: Protecting Care, Preserving Future

ASPICON 2026 | Bathinda, Punjab

📅 **Pre-Conference Workshop:** 8th October 2026
📅 **Main Conference:** 9th – 11th October 2026

Join national & international experts, engage in high-impact scientific sessions, interactive workshops, and collaborative learning to strengthen antimicrobial stewardship practices across India.