NEWSLETTER SASPI

APRIL-MAY, 2025

SOCIETY OF ANTIMICROBIAL STEWARDSHIP PRACTICES , INDIA

Contents

In collaboration with

ALL India Institute of Medical Sciences, (AIIMS), Kalyani

As one of the newer AIIMS institutions, AIIMS Kalyani has embraced its role in advancing antimicrobial stewardship with commitment and clarity of purpose. This newsletter highlights the collaborative efforts of the Departments of Pharmacology, Microbiology, and Community & Family Medicine (CMFM), who are working hand in hand to build a sustainable AMSP program rooted in evidence, education, and accountability. Despite its young foundation, the institute has taken confident strides in both hospital-based and community-facing initiatives, contributing meaningfully to the SASPI network and the national AMR response.

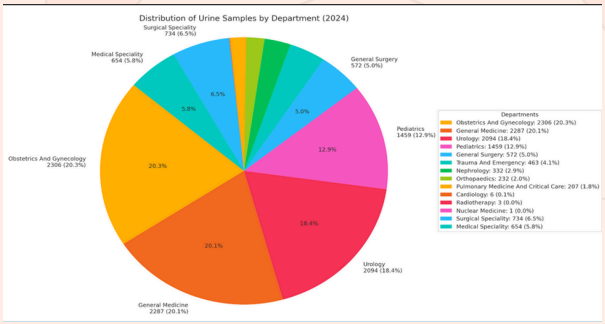
MEET THE TEAM...

- Prof. Dr. Ujjala Ghoshal, HOD, Dept of Microbiology – Chairperson
- Prof. Dr. Subrat Panda, HOD, Dept of Obs & Gynaecology – Member
- Dr. Anjum Naz, Additional Professor, Anaesthesiology – Member
- Dr. Nihar Ranjan Mishra, Additional Professor, Paediatrics – Member
- Dr. Mallika Sengupta, Associate Professor, Microbiology – Member
- Dr. Saikat Mondal, Associate Professor, General Medicine – Member
- Dr. Anindya Halder, Associate Professor, General Surgery – Member
- Dr. Mahesh R Jansari, Associate Professor, Pulmonary Medicine – Member
- Dr. Amit Kumar, Associate Professor, Orthopaedics – Member
- Dr. Arkapal Bandyopadhyay, Assistant Professor, Pharmacology – Member
- Dr. Sayantan Banerjee, Associate Professor, Microbiology – Member Secretary
- Dr. Mugunthan M, Assistant Professor, Microbiology – Asst. Member Secretary

COMMON URINARY PATHOGENS & ANTIMICROBIAL SUSCEPTIBILITY AT AIIMS KALYANI (2024)

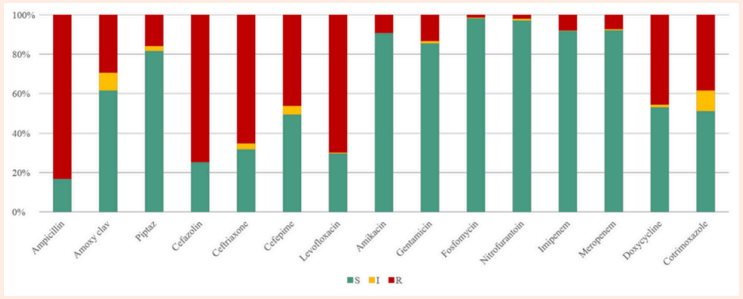
MALLIKA SENGUPTA, ASSOCIATE PROFESSOR, MICROBIOLOGY, AIIMS KALYANI

The total number of urine cultures conducted was 11,350. Of these, 1,865 cultures (17.48%) showed significant bacterial growth. 8,291 cultures (73.04%) showed no growth. 123 cultures (1.08%) showed insignificant growth. 1,071 cultures (9.43%) showed a mixture of organisms.

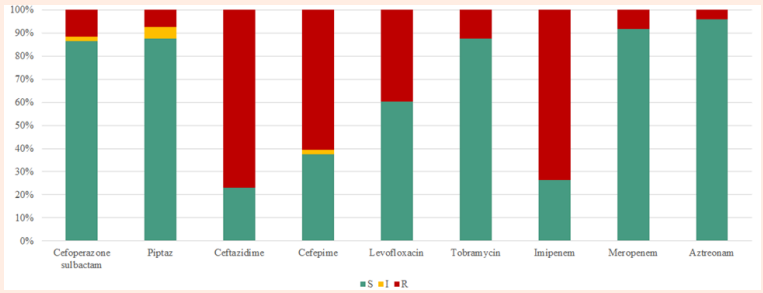


Identification of isolates and AST

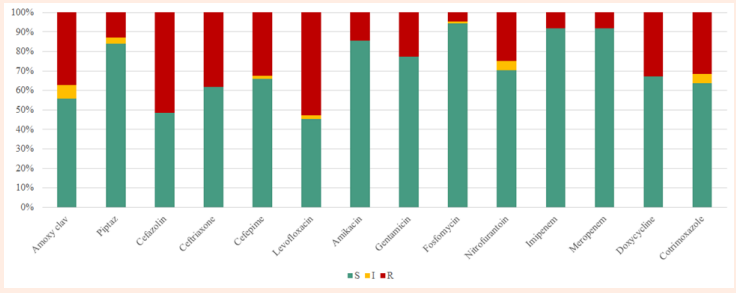
Commonly isolated organisms are as follows:



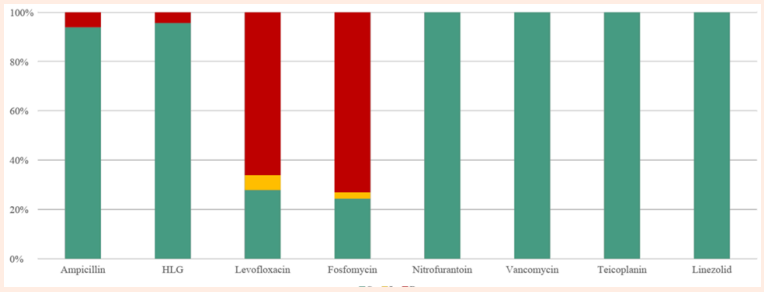
AST of E coli at AIIMS Kalyani (n=1068)



AST of Pseudomonas at AIIMS Kalyani (n=96)



AST of Klebsiella at AIIMS Kalyani (n=256)



AST of Enterococcus at AIIMS Kalyani (n=115)

Some important highlights:

- Carbapenem resistant Enterobacterales = 8.1%
- Polymyxin resistance = 0 in urine (2 isolates till date - Acinetobacter baumannii)
- Vancomycin resistant Enterococcus faecium= 3 isolates
- Linezolid resistance – Only Staphylococcus haemolyticus

COMMUNITY AMSP ACTIVITY (WAAW 2024)

A community awareness programme on rational antibiotic use and antibiotic stewardship practices was conducted by the AMSP Committee as a part of WAAW 2024 at Urban Primary Health Centre, Kalyani, on November 24. Over 100 frontline healthcare workers (ASHA, ANM, CHO, etc) were trained on antibiotic use, antimicrobial resistance, and its impact on the community.

The AMSP Team and the Department of Pharmacology conducted an interactive academic session on the Principle of Antimicrobial Stewardship, where eminent Pharmacologist Prof. SP Dhaneria delivered an insightful talk. Faculty residents and undergraduate students of AIIMS Kalyani attended the programme

AMSP Team conducted a Poster and Slogan competition on WAAW 2024.

updates

NEWLY APPROVED ANTIMICROBIALS (2024–2025): A CONCISE OVERVIEW

Prasanjit Das, Bisweswar Ojha, Arkapal Bandyopadhyay, Pharmacology, AIIMS Kalyani

The continued evolution of antimicrobial resistance necessitates the development and approval of novel agents with improved efficacy, spectrum, and safety profiles. Between January 2024 and April 2025, the U.S. FDA approved seven new antimicrobial drugs addressing a range of infections, including skin, respiratory, urinary, and rare immunodeficiency-associated infections. This summary provides a concise account of the mechanisms of action (MoA), clinical indications, and key adverse drug reactions (ADRs) for these newly introduced therapies, offering healthcare professionals a quick yet comprehensive reference.

Drug	MoA	Indication	Key ADRs
Berdazi-mer	Nitric oxide releasing agent; exact mechanism not fully elucidated.	Topical treatment of molluscum contagiosum in patients ≥1 year.	Application site reactions such as burning (18.7%), erythema (11.7%), pruritus, exfoliation.
Cefepime/ Enmetazob-actam	Cefepime inhibits bacterial cell wall synthesis;Enmetazobactam inhibits beta-lactamases.	Complicated urinary tract infections (cUTI) including pyelonephritis in adults.	Elevated liver enzymes, bilirubin, headache, infusion site phlebitis.
Ceftobipr-ole/ Medocaril Sodium	Cephalosporin binding multiple PBPs including MRSA targets.	S. aureus bacteremia (SAB), acute bacterial skin and skin structure infections (ABSSSI), CAP	Nausea, vomiting, headache, injection site reactions.
Pivmecillinam	Prodrug converted to mecillinam, targeting PBP-2 in Gram-negative bacteria.	Uncomplicated UTIs in adult females.	Nausea, diarrhea.
Mavorixafor	CXCR4 antagonist enhancing leukocyte mobilization from bone marrow.	WHIM syndrome (warts,hypogamaglobulinemia, infections,myelokathexis) in patients ≥12 years.	Thrombocytopenia, rash, rhinitis, dizziness, vomiting. Teratogenic.
Sulopenem Etzadroxil /Probenecid	Sulopenem inhibits bacterial cell wall; Probenecid prolongs plasma levels.	Uncomplicated UTIs in adult women with limited oral options.	Diarrhea,nausea, vulvovaginal infections, headache. Avoid in uric acid kidney stones.
Gepotidacin	Inhibits bacterial DNA gyrase and topoisomerase IV.	Uncomplicated UTIs in females ≥12 years, ≥40 kg.	GI upset (diarrhea, nausea), headache, vulvovaginal candidiasis. Avoid in severe hepatic/renal dysfunction.

UPCOMING ANTIMICROBIALS IN PIPELINE

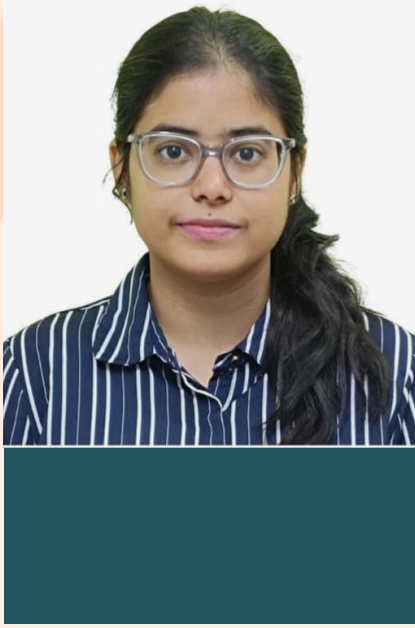
Krishnasish Das, Bisweswar Ojha, Arkapal Bandyopadhyay, Pharmacology, AIIMS Kalyani

With rising antimicrobial resistance (AMR), several novel agents in Phase-3 trials are offering hope across bacterial, viral, and fungal infections by targeting resistant mechanisms and previously untreatable pathogens.These novel antimicrobials, by targeting critical bacterial enzymes, viral replication machinery, and fungal biosynthesis pathways, represent a vital shift in tackling AMR and severe infections where conventional treatments are failing.

Name	Type	MoA	Proposed Indications
Cefepime/zidebactam	Antibiotic	4th-gen cephalosporin + DBO β-lactamase inhibitor; inhibits PBPs	Complicated urinary tract infections
Imipenem/cilastatin/funobactam	Antibiotic	Carbapenem + serine β-lactamase inhibitor	cUTI, hospital-acquired pneumonia (HAP), Ventilator associated Pneumonia (VAP)
Meropenem/nacubactam	Antibiotic	Carbapenem +DBO; targets PBP2 & β-lactamases	ESBL-, KPC-, MBL-, AmpC-, OXA-48-producing strains
Zoliflodacin	Antibiotic	Inhibits bacterial DNA gyrase	Uncomplicated gonorrhea
Sudapyridine	Antibiotic	Inhibits mycobacterial ATP synthase	MDR tuberculosis
Pimodivir	Antiviral	PB2 cap-binding domain inhibitor	Influenza A infection
Sisunatovir	Antiviral	RSV fusion inhibitor	RSV infection
Ibuzatrelvir	Antiviral	SARS-CoV-2 3CL protease inhibitor	COVID-19
Fosmanogepix	Antifungal	Inhibits Gwt1(GPI-anchor biosynthesis)	Candidemia, aspergillosis,cocci-dioidomycosis
Olorofim	Antifungal	Inhibits DHODH	Azole-resistant aspergillosis, rare IFDs

Resident's corner.....

One Health Implementation and Anti-Antimicrobial Resistance Concern



Aditi Paul, Junior Resident (Academic), Department of CMFM, AIIMS Kalyani

One Health is a collaborative approach linking human, animal and environmental sectors across local, national and global levels to achieve optimum health outcomes. Interdependence across these fields is used to create new surveillance and disease control methods. It applies to a range of issues such as antimicrobial resistance; infectious zoonotic diseases like Ebola, rabies, spreading from animal to human; vector borne diseases such as dengue fever and malaria; foodborne diseases such as Salmonella, Listeria caused by contamination in the food supply chain and the effect of pollution and climate change on environmental health. Implementing the One Health approach requires multi-sectoral collaboration to integrate human, animal, and environmental health. In March 2022, the Quadripartite alliance—comprising FAO, UNEP, WHO, and WOAH—was formed to advance this policy. Progress includes wider adoption of the One Health Joint Plan of Action (OHJPA), stronger political advocacy, and integration of social sciences and economics to bolster scientific evidence. However, challenges remain, such as developing a unified surveillance model, preventing zoonotic disease spread, and establishing an international database for resource sharing.

Antimicrobial resistance (AMR) arises when microorganisms adapt to withstand treatments, often due to overuse and misuse of antimicrobials. This escalates health risks and complicates treatment. The Global Action Plan (GAP) addresses AMR through the One Health framework by promoting education, responsible antimicrobial use, and better hygiene. WHO's AWaRe classification aids in selecting appropriate antibiotics to optimize treatment and limit resistance.

PEARLS IN INVASIVE CANDIDIASIS

Debdut Dey, Shiv Sekhar Chatterjee, Department of Microbiology, AIIMS, Kalyani

Invasive Candidiasis (IC), as defined by the CDC, includes candidemia and deep-tissue infections caused by Candida species, posing serious threats especially in ICU patients—50% of cases occur in ICUs, with 25% hospital mortality. Increasing antifungal resistance, diagnostic delays, and rising healthcare burdens complicate treatment.

Key Challenges:

- Lack of standardized global epidemiological data.
- Delays in initiating effective antifungal therapy due to diagnostic limitations.
- High diagnostic and therapeutic costs in resource-poor settings.

Species Distribution:

Five main species (*C. albicans, C. glabrata, C. tropicalis, C. parapsilosis, C. krusei*) cause >90% of IC. Candida auris and fluconazole-resistant *C. parapsilosis* are emerging threats, with *C. auris* often misidentified and showing multi-drug resistance. Blood cultures detect <40% of cases; non-culture diagnostics (e.g., β-D-glucan, procalcitonin, MALDI-TOF, ITS sequencing) are critical.

Risk Factors:

- Iatrogenic: Broad-spectrum antibiotics, ICU stay, mechanical ventilation, catheters, dialysis, TPN, prosthetics, chemotherapy, etc.
- Immunosuppression-related: Neutropenia, transplants, corticosteroids, diabetes, age extremes, COVID-19, genetic predisposition.

Colonization increases IC risk by 3.3 times. Antifungal prophylaxis is advised when ICU incidence >10%.

Biofilm and Virulence:

Biofilms significantly increase mortality (70% vs. 38% with planktonic forms). *C. tropicalis, C. parapsilosis, C. glabrata, and C. auris* are notable biofilm producers.

Antifungal Resistance and Novel Therapies

Resistance to azoles is often due to SNPs, heteroresistance, and efflux mechanisms.
New antifungals: Ibrexafungerp, Rezafungin, Fosmanogepix.
C. glabrata and C. parapsilosis are increasingly resistant; C. auris remains MDR but rare in some regions.

Diagnosis and Management Guidelines:

Global guidelines by ECMM, ISHAM, ASM recommend:
First-line: Echinocandins.
Alternatives: Liposomal amphotericin B, voriconazole (if resistance suspected).
Conventional microscopy remains central; molecular and biomarker diagnostics need broader validation. Antifungal stewardship is essential to limit resistance.

BEYOND THE RESISTANCE: NEED FOR NEW FRONTIERS IN GLOBAL POLICY FOR AMR CONTROL

Sarika Palepu, Dept. of CMFM, AIIMS Kalyani

Antimicrobial resistance (AMR) is a process exacerbated by human actions, either by misuse or overuse of medications in humans, animals, or plants. It has long been established as a cause of global concern and has called for concerted multi-sectoral actions. Bacterial AMR alone accounted for 1.27 million deaths and contributed to 4.95 million deaths in 2019. (1) Literature review suggests that AMR also has huge financial implications, with resistant infection costing in the range of 2371.4 to 29289.1 US dollars, increased length of hospital stay, increased odds of mortality, and readmission. (2)

Despite global efforts like the AMR action plan, One Health approach, and the quadripartite strategy, antimicrobial resistance remains a growing threat. Progress is held back by uneven national implementation, weak coordination across human, animal, and environmental health, poor surveillance in low- and middle-income countries, and limited data from the private sector.

The 2023 UNEP report underscores how environmental pollution—caused by pharmaceuticals, agriculture, and healthcare chemicals—fuels resistance, yet remains largely ignored in AMR strategies.

A major policy reset is urgently needed. This includes stronger accountability across sectors, tighter environmental regulation, unified national data systems, and global real-time data sharing. Countries can build on existing programs—like India's IDSP—to integrate AMR surveillance, and make private sector reporting mandatory, similar to what's done for tuberculosis.

Furthermore, global regulations must be developed to enforce uniform standards for the treatment of effluents from antibiotic manufacturing units, ensuring proper hazardous waste management and preventing environmental contamination. Emerging evidence also highlights the role of climate change in accelerating AMR (4), underscoring the need for policy frameworks that address this critical intersection.

In addition, public education campaigns should be designed to raise awareness about the dangers of AMR and promote responsible antibiotic use. With these comprehensive measures in place, national antimicrobial policies can be better equipped to deliver effective and accountable solutions to combat AMR at both national and global levels.

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FROM THE EDITOR'S PEN....

Samiksha Bhattacahrjee
Assistant Professor,
AIIMS Deoghar
Editor, Newsletter, SASPI

A crisis of demands and commands

In contemporary Indian healthcare, physicians face a dilemma between patient demands for antibiotics—fueled by misconceptions—and rigid antimicrobial stewardship (AMSP) policies that can compromise clinical autonomy. This tension highlights ethical, social, and behavioral conflicts at the crossroads of patient pressure, medical responsibility, and policy enforcement. A more nuanced, contextual stewardship approach is needed—one that supports both clinicians and communities in making informed, responsible decisions without coercion.

When Patients Demand and Protocols Command:

The Ethical Tangle of Antibiotic Coercion and Coerced Stewardship

Antibiotic Coercion: The Patient as the Prescriber?

In India, the idea that antibiotics are synonymous with strong and fast treatment has permeated public consciousness. Patients expect—and often insist on—an antibiotic for almost any illness, particularly respiratory infections, fevers, or diarrhea, most of which are viral or self-limiting. This demand stems from a mix of misinformation, past experiences, over-the-counter availability, and cultural narratives around "strong medicine" .

For physicians, especially those in busy urban clinics or under-resourced rural setups, it becomes easier to write the prescription than to explain why it's unnecessary. In private practice, patient satisfaction can directly affect livelihood; in public hospitals, it's about managing time and avoiding confrontation. The result is a quiet but persistent erosion of clinical decision-making.

Coerced AMSP: When Policy Overrules Practice

In India, AMSPs play a critical role, but when they get too rigid, they stop feeling like support and start feeling like surveillance. Junior doctors, in particular, often feel second-guessed or forced to follow rules over real-world judgment. Add to that the constant pressure from patients demanding antibiotics, and doctors find themselves caught in the middle—squeezed by two kinds of coercion, with little room for true clinical decision-making.

Where the Two Coercions Collide

Imagine this: A physician is confronted by a demanding patient who insists on antibiotics. At the same time, they know that any deviation from AMSP guidelines could lead to audit flags, questions from stewardship teams, or disciplinary review.

Torn between appeasing the patient and avoiding institutional friction, the clinician ends up either over-prescribing to avoid backlash or under-prescribing out of fear—both risky paths. This double-bind situation isn't just stressful—it's dangerous. It sets the stage for both resistance and mistrust, making physicians feel less like decision-makers and more like negotiators caught between consumerism and compliance.

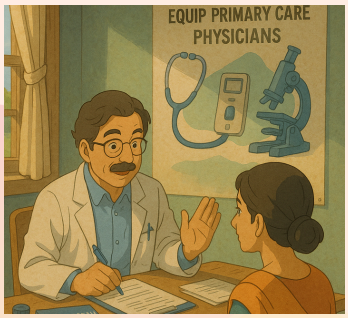
Toward a Balanced Model: Indigenous Solutions for an Indian Problem

To break this cycle, we need a version of AMSP that recognizes the Indian context—its patient behavior, systemic pressures, and diverse clinical realities. Here's how we can get there:

1. Reframing AMSP as Mentorship, Not Monitoring. Encourage stewardship teams to work with clinicians,offering real-time consults, feedback, and support instead of rigid oversight.

2.Patient-Facing Public Health Campaigns.Use vernacular media, digital influencers, and community health workers to correct misconceptions about antibiotics—just like polio and TB campaigns did successfully.

3. Empowering the Frontline with Tools, Not Just Rules. Equip primary care physicians with quick diagnostics, decision-support tools, and local antibiograms so they can say "no" with confidence and science.



4. Behavioral Nudges for Prescribers. Introduce non-punitive strategies like peer comparison, antibiotic dashboards, or signed antibiotic pledges—proven to work globally and adaptable to India [3].

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4. Tess Johnson, Developing an Ethical Evaluation Framework for Coercive Antimicrobial Stewardship Policies, Public Health Ethics, Volume 17, Issue 1-2, April/July 2024, Pages 11-23, https://doi.org/10.1093/phe/phae005
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!!BLOCK THE DATES!!

AIIMS Mangalagiri

Andhra Pradesh

Department of Clinical Microbiology

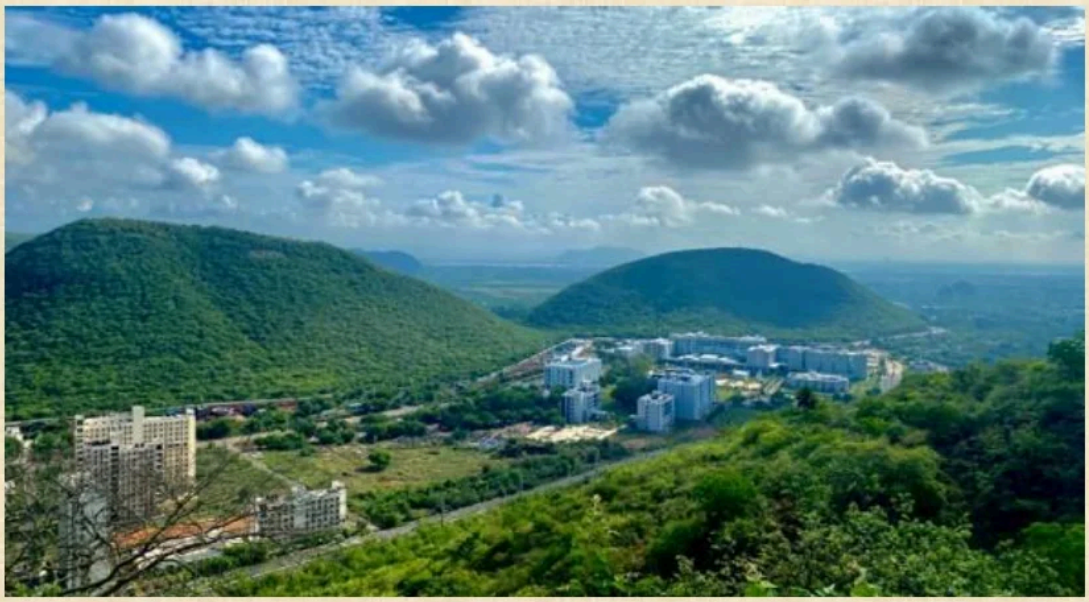
is Proud to Host

ASPICON – 2025

Dates: 4th to 7th September 2025

The 7th Annual Conference of
Society for Antimicrobial Stewardship Practices in India [SASPI®]

THEME: ASSERTING A.M.R. AWARENESS [AAA]



AIIMS Mangalagiri Campus, Guntur Andhra Pradesh

CALL FOR NOMINATIONS: SASPI EXECUTIVE ELECTIONS 2025

The Society of Antimicrobial Stewardship Practices in India (SASPI) is pleased to announce the upcoming SASPI Annual Elections 2025 to be conducted prior to ASPICON 2025 under the guidance of the Annual Meeting Committee. We invite all eligible members to participate in this important process by submitting nominations for the following vacant executive posts:

S. No.	Post Name	Vacancy Details	Eligibility Criteria
1.	Vice president SASPI	1 Post	Only SASPI Founder members
2.	Secretary SASPI	1 Post	Only SASPI Founder members
3.	Joint - Secretary SASPI	1 Post	Only SASPI Founder members
4.	Treasurer SASPI	1 post	Only SASPI Founder members
5.	Director Training Committee SASPI	1 Post	SASPI Founder/Life Member
6.	Director Annual Meeting Committee SASPI	1 post	SASPI Founder/Life Member
7.	Director Public Health Committee SASPI	1 post	SASPI Founder/Life Member
8.	Director Nursing Stewardship Committee SASPI	1 post	SASPI Founder/Life Member
9.	Director Investment Committee SASPI	1 post	SASPI Founder/Life Member
10.	Director Quality & Ethics Committee SASPI	1 post	SASPI Founder/Life Member
11.	Director Practice Guidelines Committee SASPI	1 post	SASPI Founder/Life Member
12.	Associate Director, Training Committee	1 post	SASPI Founder/Life Member

Election Process

- Call for Nominations: Will be circulated through SASPI's official channels. Interested candidates must fill the nomination form and email their bio-data (PDF) along with proof of membership.
- Online Voting: A secure digital platform will be used for voting by eligible members.
- Result Declaration: Results will be reviewed by the Election Subcommittee and announced officially via email.

Key Dates (Tentative)

- Submission of application starting date: 01/06/2025
- Submission end date: 10/06/2025
- Last date of withdrawal: 15/06/2025
- Declaration of eligibility list: 20/06/2025
- Voting date: 25/06/2025
- Result declaration: On ASPICON 2025, GBM

Security & Confidentiality

All votes will be confidential, encrypted, and in full compliance with SASPI's election guidelines.