



Gastro-intestinal infections and stewardship practices—A call for action to practising GI professionals

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Gastro-intestinal (GI) infections remain among the most common presentations in healthcare systems and account for substantial morbidity, hospitalization and economic burden in tertiary hospitals [1]. The spectrum spans self-limiting acute diarrhea to life-threatening conditions such as spontaneous bacterial peritonitis (SBP) in cirrhosis, pyogenic liver abscess and post-operative intra-abdominal sepsis. Chronic viral hepatitis further adds to this burden. A major concern for gastroenterologists and GI surgeons is the role of these infections and their treatment practices in driving anti-microbial resistance (AMR). The WHO identifies AMR as a global health crisis, with irrational anti-microbial use in GI diseases such as empirical therapy without cultures, prolonged prophylaxis and broad-spectrum misuse.

Integrated anti-microbial stewardship (AMS) practices offer structured strategies to optimise diagnosis, treatment and prevention. The 42 practice points from the Society of Anti-microbial Stewardship Practices (SASPI) provide an India-specific framework for tertiary hospitals [2]. For GI specialists, integrating AMS into clinical workflows through a GUT-CARE ASP model/checkpoint is now essential (See box 1).

GI infections contributing to AMR and its concern

Rising AMR directly reduces eradication rates in *H. pylori*, where regimen success depends on local resistance patterns [3]. *Clostridioides difficile* infection (CDI) is both a cause and outcome of inappropriate antibiotic use, particularly fluoroquinolones, cephalosporins and carbapenems that disrupt gut flora. In India, anti-biotics continue to be widely prescribed for viral diarrhea, including in children, despite lack of benefit, with studies confirming inappropriate pre-hospital exposure [4].

Similarly, in jaundiced patients with viral hepatitis, unnecessary anti-biotics are frequently used, while poor anti-viral adherence worsens complications [5]. Long-term fluoroquinolone prophylaxis for cirrhotics at risk of SBP reduces recurrence but promotes resistant Gram-negative organisms and fungal super-infections [6]. In SBP, multi-drug-resistant and extensively drug-resistant infections are associated with shock, organ failure and higher mortality.

Management of pyogenic liver abscess often deviates from guidelines, with prolonged and inconsistent antibiotic durations despite evidence supporting drainage-based therapy [7]. These patterns reinforce a vicious cycle: high prevalence of GI infections → empirical antibiotic use → resistance → treatment failure → further escalation. This highlights the urgency for strict stewardship in GI medicine and surgery practices.

Stewardship: Gastroenterologists and gastro-surgeons as problem-solvers

Gastroenterologists and GI surgeons are well placed to lead AMS across diagnostics, therapeutics and surgical care. Diagnostic stewardship is critical because the GI tract's dense microbiota complicates interpretation of cultures. Positive stool or aspirate results may represent colonization by

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Enterobacterales, *Enterococcus* or *Candida* rather than true infection. Misinterpretation often triggers unnecessary broad-spectrum therapy, disrupting the microbiome and accelerating resistance. Distinguishing pathogen vs. non-pathogen must rely on clinical context and sample quality rather than culture positivity alone [8]. Molecular diagnostics should be used judiciously.

Therapeutic stewardship demands rational empiric therapy guided by local anti-biograms, timely de-escalation once culture results arrive and evidence-based durations, e.g. 10–14 days for liver abscess after drainage. SBP prophylaxis must be restricted to guideline-defined high-risk groups. Surgical stewardship includes peri-operative prophylaxis limited to 24–48 hours, anti-biotic selection based on local resistance patterns and step down after adequate source control (e.g. drainage, resection) [9].

Preventive stewardship encompasses hepatitis B virus (HBV) vaccination, *Clostridioides difficile* infection (CDI)-prevention bundles and hygiene measures to curb diarrhea. Educational stewardship involving patient counselling on anti-viral adherence and avoiding unnecessary anti-biotics remains vital. Active involvement in multi-disciplinary AMS committees allows GI specialists to shape institutional policies and ensure context-appropriate stewardship [10].

The SASPI 42 practice points span anti-microbial, diagnostic, preventive and administrative stewardship and can be operationalized through the “GUT-CARE ASP” model (Box 1) as problem-solvers.

Box 1. The 10 core elements of the integrated anti-microbial stewardship framework: “GUT-CARE ASP” model

- G — Guided therapy: Use susceptibility-guided therapy for *H. pylori*; avoid repeated empirical failures
- U — Utilitarian prescribing: Restrict anti-biotics in acute diarrhea; prioritise rehydration and supportive care
- T — Targeted CDI management: Adopt guideline-based management for CDI; minimise broad-spectrum exposures
- C — Cirrhosis-specific prophylaxis: Apply SBP prophylaxis only in guideline-defined high-risk cirrhotic patients
- A — Abscess drainage: For abscesses, obtain aspirates for culture, de-escalate based on results and shorten therapy post-drainage
- R — Rational peri-operative prophylaxis: Restrict peri-operative prophylaxis to 24–48 h; avoid unnecessary extension
- E — Evidence-based interpretation: Ensure cultures, correctly interpret pathogen vs. non-pathogen and step down after surgical source control in intra-abdominal sepsis
- A — Anti-viral stewardship: In HBV/HCV, avoid empirical anti-biotics; ensure rational anti-viral initiation and adherence
- S — Surveillance and vaccination: Promote HBV vaccination, IPC bundles and routine AMR surveillance. P — Partnership in stewardship: Engage in AMS committees with microbiology, pharmacy and infection-control teams

To conclude, GI infections, diarrhea, CDI, viral hepatitis, SBP and surgical abscesses, are major contributors to AMR in tertiary care. Their complex pathogenesis and reliance on

empirical therapy place GI specialists at the centre of stewardship challenges. The SASPI 42 points offer a practical roadmap to reduce resistance, improve clinical outcomes and preserve anti-microbial effectiveness. Gastroenterologists and GI surgeons must, therefore, evolve from prescribers to GUT-CARE ASP stewards/champions/role models in their institutions.

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