

Antimicrobial resistance profile of *Shigella* isolates based on KARSNET data

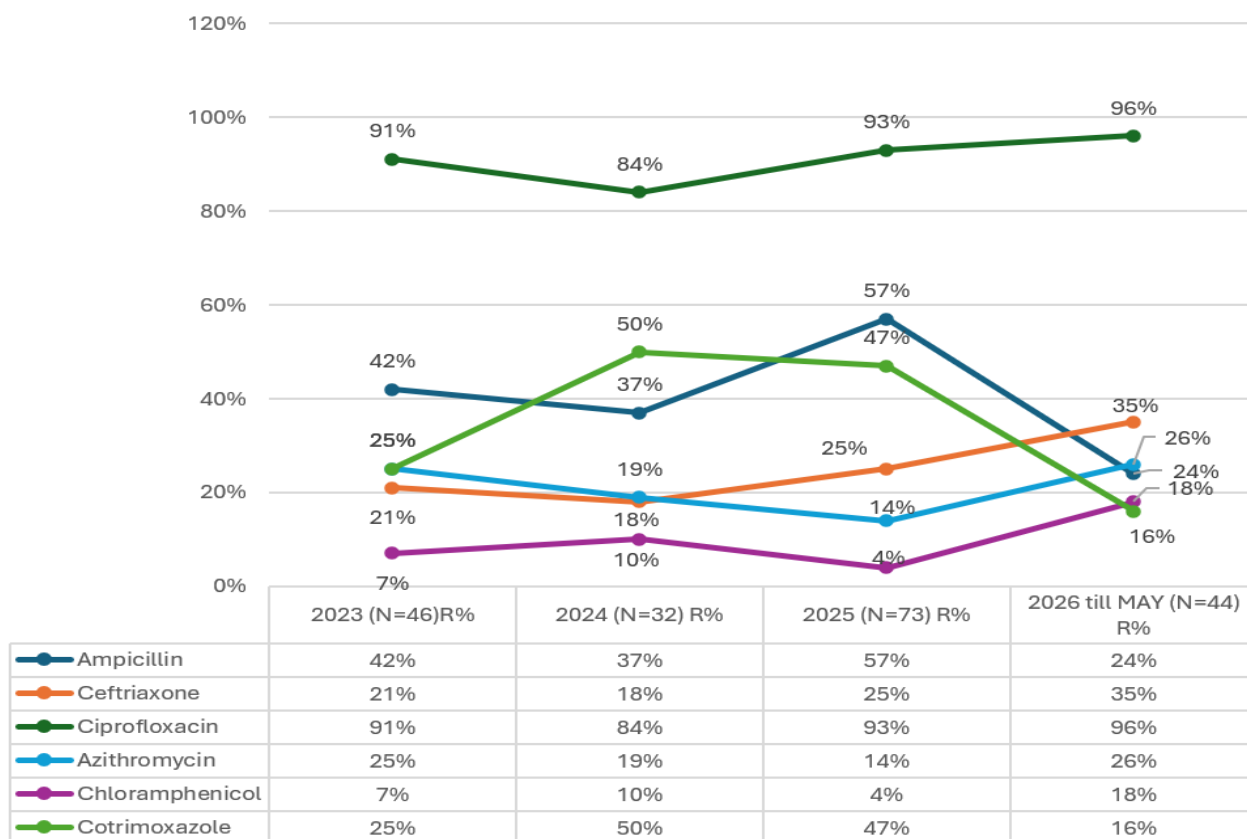
Kerala is experiencing *Shigella* outbreak in 2026, with 226 laboratory-confirmed cases and 7 deaths reported as of June 22, 2026, surpassing the 133 cases documented during the entire year of 2025. This surge in cases has been accompanied by notable changes in the anti-microbial resistance pattern of *Shigella* isolates. Understanding

these resistance trends is crucial for guiding empirical antibiotic therapy and formulating effective treatment strategies.

The Kerala Antimicrobial Resistance Surveillance Network (KARSNET), established in 2018, has been continuously monitoring the antimicrobial susceptibility patterns of bacteri-

al pathogens isolated from human clinical samples, with the broader objective of containing antimicrobial resistance (AMR). *Shigella* antimicrobial resistance data have been systematically collected under KARSNET since 2023. The graph shows the evolving resistance trends in *Shigella* to the commonly used antibiotics.

Resistance profile of *Shigella* based on KARSNET data



With the exception of ceftriaxone and chloramphenicol in 2023; ampicillin, ceftriaxone, azithromycin, cotrimoxazole and chloramphenicol in 2024; and Ampicillin (n=29) and Chloramphenicol in 2026, the number of isolates tested for antibiotic-year combinations were sufficiently high ($n \geq 30$) to yield statistically meaningful resistance estimates.

Therapeutic implications from antimicrobial resistance pattern of *Shigella* isolates

- Based on this data, it is clear that ciprofloxacin can no longer be used for the empirical treatment of *Shigella* due to very high resistance observed.
- The increasing lack of susceptibility of shigella to ceftriaxone suggests that, in patients with severe *Shigella* infection like in those presenting with shock, MODS etc, carbapenems should be started upfront followed by de-escalation based on antimicrobial susceptibility report.

- In patients requiring inpatient care but are not in shock/MODS, ceftriaxone can be started empirically followed by antimicrobial optimisation based on culture and susceptibility reports.
- For outpatient care of patients with suspected *Shi-gella* gastroenteritis, along with optimisation of hydration with ORS, zinc, antibiotics like cefixime or azithromycin may be prescribed. Cotrimoxazole or doxycycline may also be used in outpatient care.

The above analytical case study also tells us that well led out structures and processes are giving us the insights regarding pathogens and use of antibiotic in the field. The respective pharmaceutical companies also while discussing and promoting any antibiotic with the health fraternity should emphasize on proper use of antibiotic, failing which the life of antibiotic will be short!

The work done by Dr Sarita, Dr Aravind and team of KARSNET is appreciated.

Kerala Health Team

