

Time to Effective Therapy Matters: Expert-Led Strategy Targets Early Therapy and De-escalation To Reduce MDRO Mortality

Infographic 2 of 2 in the 'Accelerating Time to Effective Therapy' series

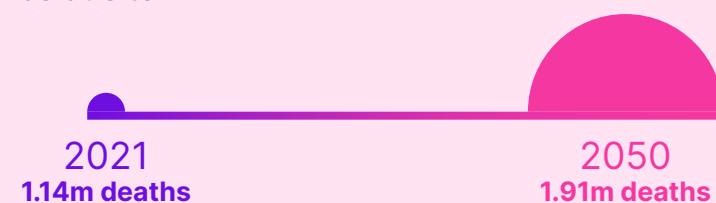
The publication of this infographic was supported by **Shionogi**. This educational infographic is intended for healthcare professionals only.

In the UK, Fetrocra® (Cefiderocol) is indicated for the treatment of infections due to aerobic Gram-negative organisms in adults with limited treatment options. Consideration should be given to official guidance on the appropriate use of antibacterial agents. The label may differ in other countries; please check local prescribing information. Please access the full Fetrocra® Summary of Product Characteristics [here](#). Adverse event reporting information can be found at the bottom of this infographic.

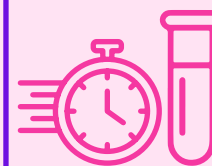
EMJ
European Medical Journal

PP-EU-FDC-0354
Date of preparation June 2026

Global number of deaths estimated to be due to AMR^{1,2}

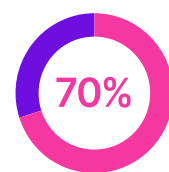


MDROs render antibiotic treatments ineffective, increasing morbidity, mortality, complications, and the length of hospital stays.³

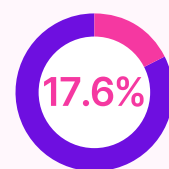


Rapid diagnostics and prompt effective therapy improve outcomes while supporting AMR stewardship.⁴

The right agent, time, and patient, can improve outcomes and preserve the efficacy of available antibiotics.⁴⁻⁶



Around 70% of antibiotic-resistant infections are linked to healthcare. Outcomes can be poor.^{3,7}



The analysis looked at approximately 1,000 patients with serious GN bacterial infections in over 40 Italian hospitals.^{3,7}

30-day mortality rate by bacterium:^{3,7}



• *Klebsiella pneumoniae*-producing KPC or NDM: 22–23%



• *Acinetobacter baumannii*: 37%



• *Stenotrophomonas maltophilia*: up to 43%



MDRO infections were associated with inappropriate empirical antibiotic therapy in the first 48 hours, leading to increased mortality.^{7,8}

Reporting of suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme, website: <https://yellowcard.mhra.gov.uk> or search for MHRA Yellow Card in the Google Play or Apple App Store. Adverse events should also be reported to Shionogi on +44 (0) 203 053 4190 or email contact@shionogi.eu.

References:

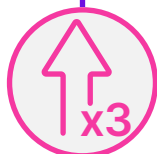
- GBD 2021 Antimicrobial Resistance Collaborators. Lancet. 2024;404(10459):1199–226.
- de Kraker ME et al. PLoS Med. 2016;13(11):e1002184.
- Health Publishing and Services. 2025. Available at: <https://hpsitaly.healthcare/en/aboutmedicine-eng/approcci-innovativi-di-empirica-ragionata-nella-gestione-delle-infezioni-ospedaliere-da-gram-negativi-multi-resistenti-agli-antibiotici/>. Last accessed: 12 June 2026.
- Bassetti M et al. Int J Antimicrob Agents. 2020;56(6):106184.
- Zak-Doron Y et al. Clin Infect Dis. 2018;67:1815–23.
- Dryden M et al. Journal Antimicrob Chemother. 2011;66(11):2441–3.
- Diffidenti E. 2025. Available at: <https://www.ilsole24ore.com/art/antibiotico-resistenza-scovato-batterio-killer-che-colpisce-ospedale-AG/CfpzC>. Last accessed: 12 June 2026.
- Kadri SS et al. Lancet Infect Dis. 2021;21(2):241–51.
- Gloucestershire Hospitals NHS Foundation Trust. 2025. Available at: <https://www.gloshospitals.nhs.uk/your-visit/patient-information-leaflets/advice-for-patients-with-multi-drug-resistant-organisms-mdro/>. Last accessed: 12 June 2026.
- Andersson M et al. Eur J Clin Microbiol Infect Dis. 2019;38(7):1223–34.
- Choosing Wisely Italy. 2019. Available at: <https://choosingwiselyitaly.org/en/raccomandazioneprof/dont-prescribe-antibiotic-therapy-to-patients-colonized-by-multi-resistant-antibioticmicroorganisms-without-signs-of-infection/>. Last accessed: 12 June 2026.

Abbreviations:

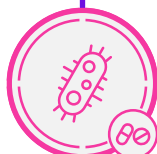
AMR: antimicrobial resistance; GN: Gram-negative; KPC: *Klebsiella pneumoniae* carbapenemase; MDRO: multidrug-resistant organism; NDM: New Delhi metallo-beta-lactamase; VAP: ventilator-associated pneumonia.



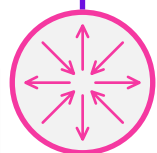
Guidelines advise against antibiotic therapy for MDRO colonised patients with no signs of infection.⁹ Yet delayed treatment in bacteraemia or VAP, for example, can lead to poor outcomes³



In one study, high-risk patients with sepsis and septic shock who did not receive early appropriate therapy had a **more than three-fold higher risk of mortality** at Day 28 than those who did.¹⁰



Publication of best practice recommendations from an expert working group describes how to integrate AMR stewardship into early treatment decision making.



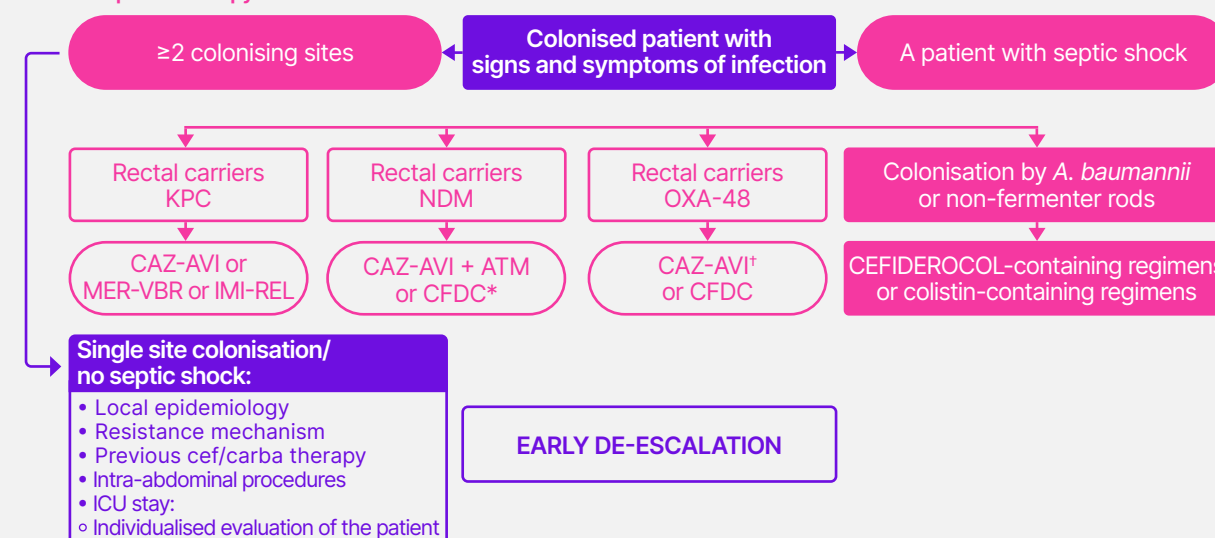
Two predictive algorithms may:³

- Help clinicians **select the most appropriate agent** at the outset.
- Encourage **early treatment de-escalation**.



The primary goal is to **reduce the time to effective therapy** while also easing the selective pressure of antibiotics.³

Empirical therapy based on rectal colonisation.³

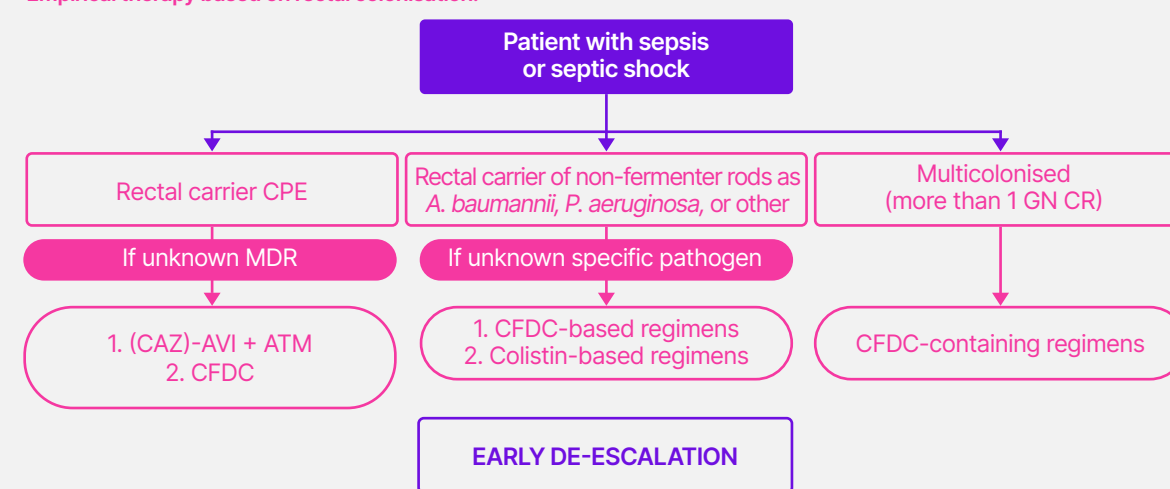


*Susceptibility should be tested; *Meropenem-vaborbactam has high susceptibility rates.

Adapted from the algorithm presented by Prof. Falcone (Pisa University Hospital) during an expert working group meeting, Bologna, May 2025. Flowcharts provided by M. Falcone.³

ATM: aztreonam; CAZ-AVI: ceftazidime/ avibactam; cef/ carba: ceftazidime/carbapenems; CFDC: cefiderocol; ICU: intensive care unit; IMI-REL: imipenem-relebactam; KPC: *Klebsiella pneumoniae* carbapenemase; MER-VBR: meropenem-vaborbactam; NDM: New Delhi metallo-beta-lactamase; OXA-48: oxacillinase-48.

Empirical therapy based on rectal colonisation.³



Adapted from the algorithm presented by Prof. Falcone (Pisa University Hospital) during an expert working group meeting, Bologna, May 2025. Flowcharts provided by M. Falcone.³

ATM: aztreonam; (CAZ)-AVI: ceftazidime/ avibactam; CFDC: cefiderocol; CPE: carbapenemase-producing enterobacteria; GN CR: carbapenem-resistant Gram-negative bacteria.

Conclusion/ Key Learnings



Early appropriate therapy is associated with significantly lower mortality rates than inappropriate therapy.^{7,10}

Reduce mortality

Improve outcomes

Combined with early de-escalation and guided by colonisation data, predictive scores, and rapid diagnostics, it can improve outcomes and reduce mortality while also supporting AMR stewardship.^{3-7,10,11}