



Infection prevention and management:

Role 1 & Role 2F

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Relevance:

- The hospital environment, not the battlefield, is the primary driver of resistance selection and spread.

Holubnych, V.M. & Kholodylo, O.V. War impact on antimicrobial resistance and bacteriological profile of wound infections in Ukraine. Communications Medicine, volume 5, Article number: 394 (2025).

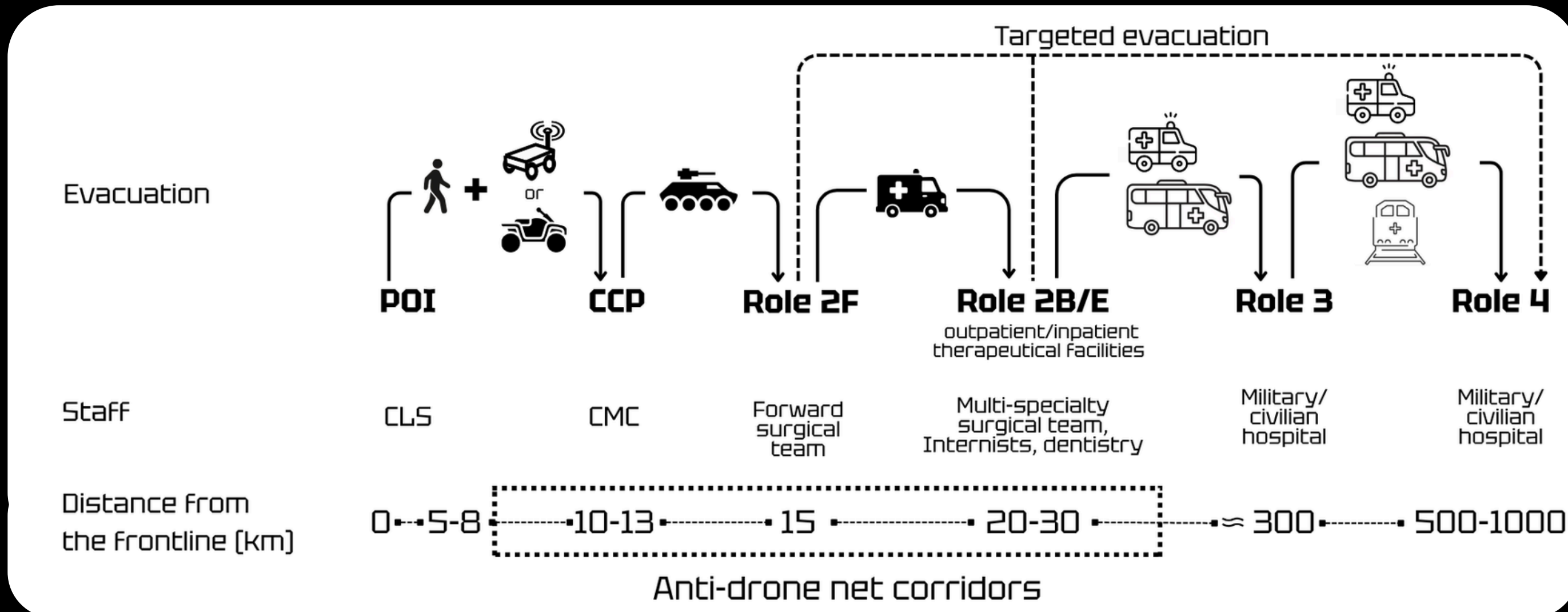
- Ukraine-associated MDROs have crossed borders and are now a documented European biosecurity concern.

Uren H, Berrey BH, Gumeniuk K, et al. War against superbugs, stopping them before they stop us: a biological warfare approach to safeguard European biosecurity. Trauma Surg Acute Care Open. 2026;11(2):e002169. Published 2026 Apr 15. doi:10.1136/tsaco-2025-002169

Current evacuation chain & challenges



- Average evacuation time from the front line to Role 2F is 6-10 hours for unstable and 20 hours for stable casualties.
- The most critical stage is the evacuation from POI to CCP.

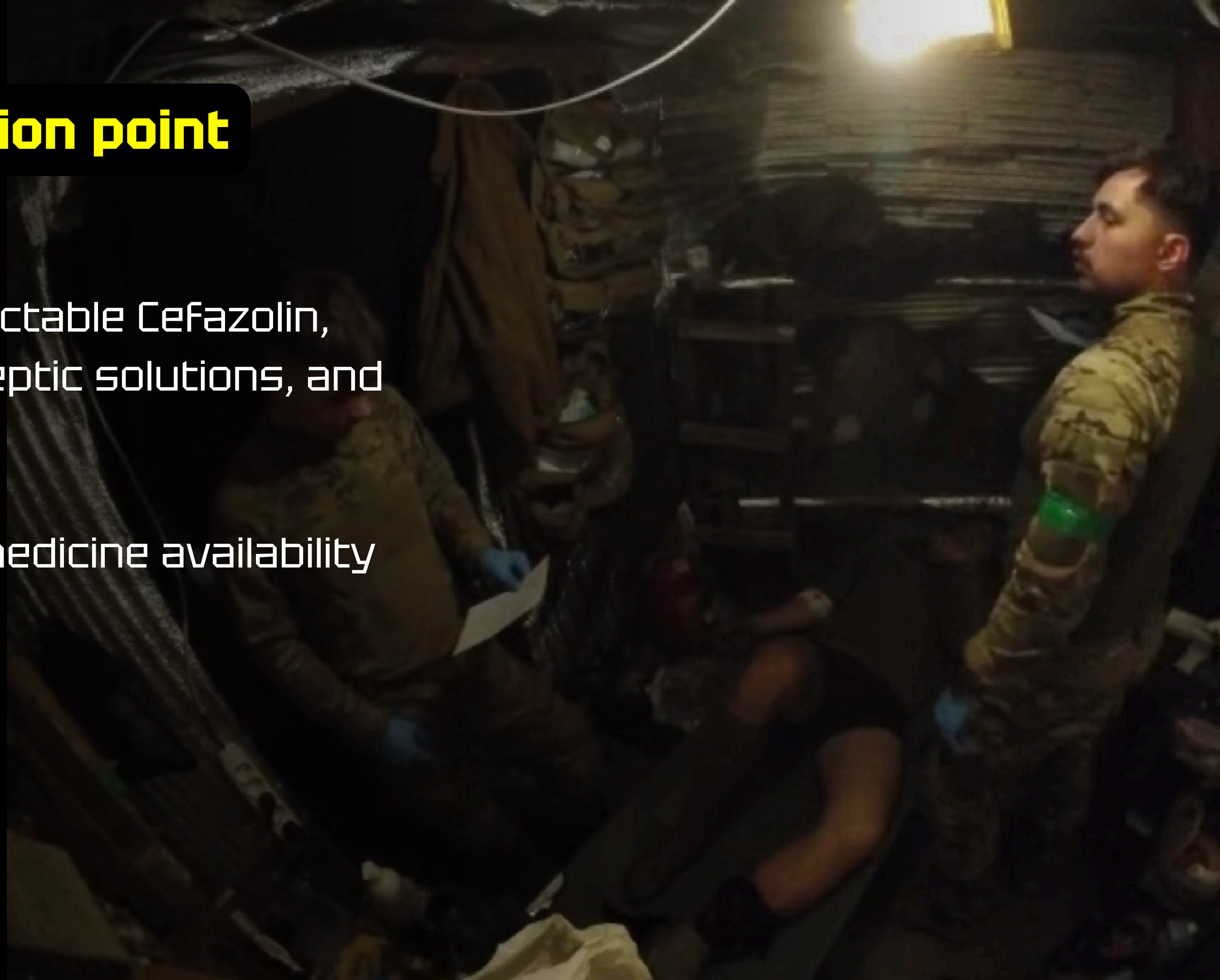


Point of injury

- Unavailability of a combat medic and predominantly self-care
- Complicated treatment in a drone kill zone
- Lack of water and dressings
- Drone delivery is not a universal solution
- The pill pack is often the only available option

Casualty collection point

- Availability of injectable Cefazolin, dressings, antiseptic solutions, and water
- Continuous telemedicine availability
- Reliable resupply



Role 2F (forward surgical team/stabilisation point)

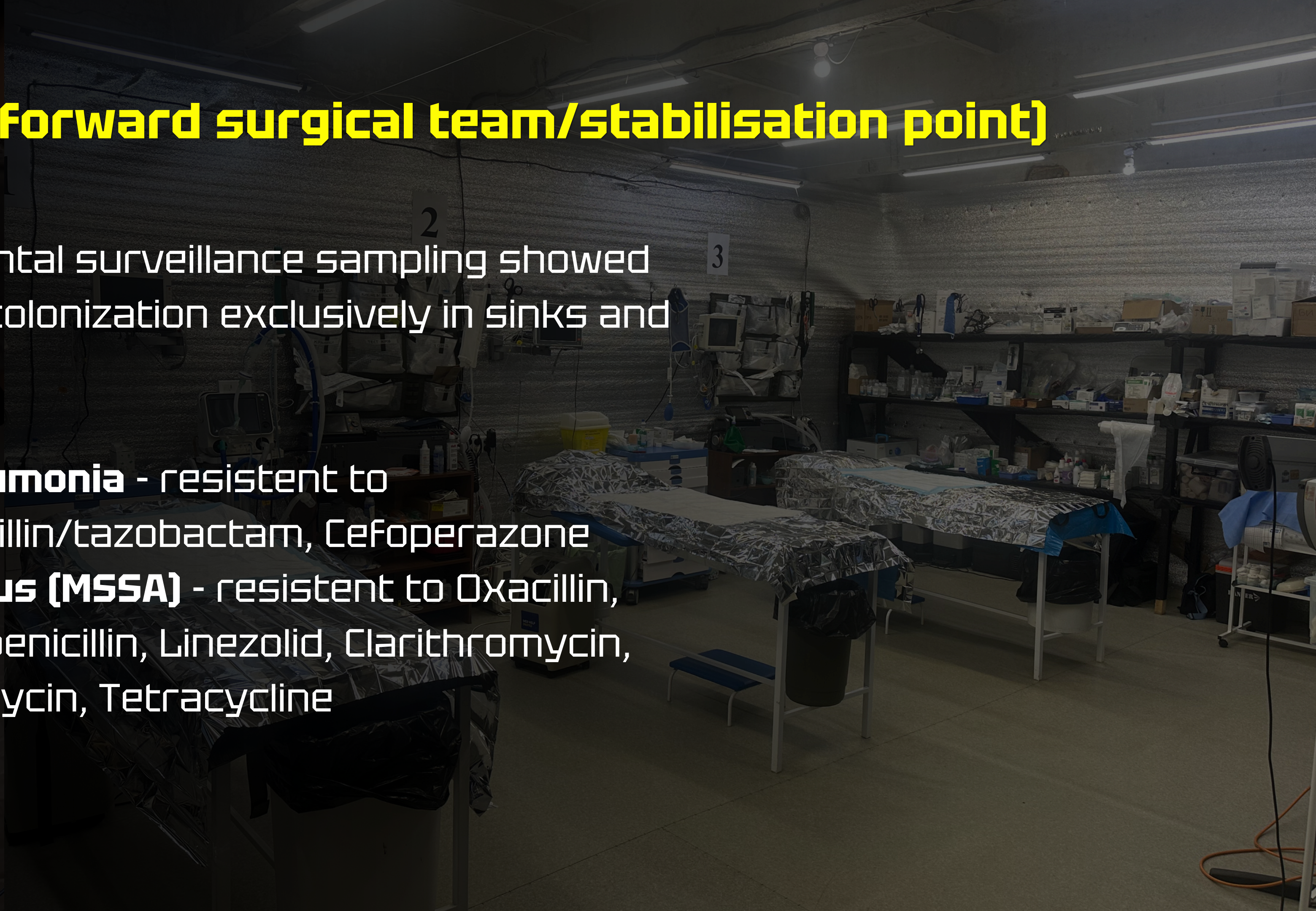
- Underground and relocated regularly
- Barriers, cleaning surfaces and instruments according to nationwide guidelines for civilian facilities (excluding ventilation)
- Strict antibiotic prescribing: oral penicillins for minor injuries, Cefazolin and Metronidazole depending on the injury site, Levofloxacin for eye injuries



Role 2F (forward surgical team/stabilisation point)

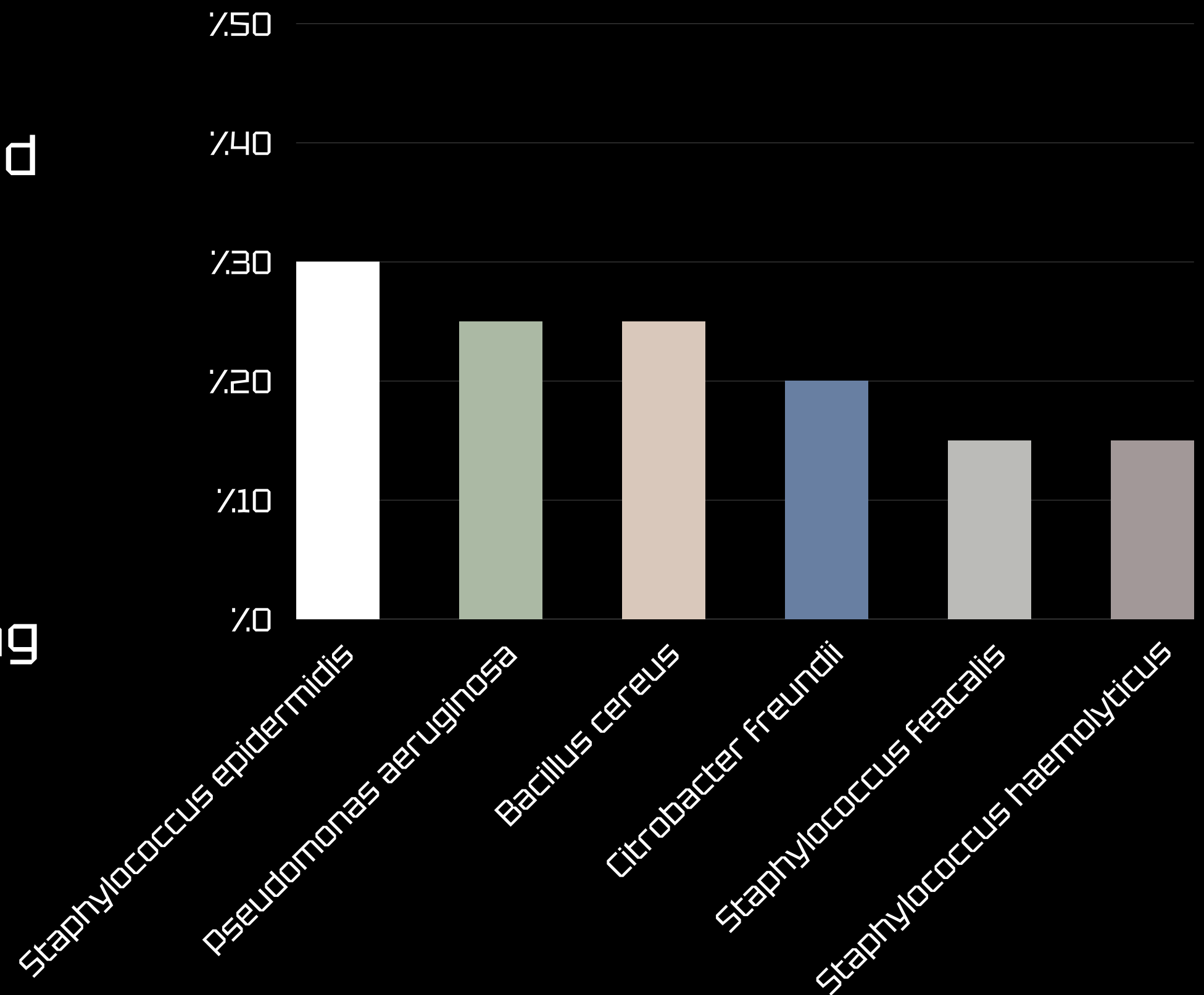
Environmental surveillance sampling showed pathogen colonization exclusively in sinks and drains:

1. **K. pneumonia** - resistant to Piperacillin/tazobactam, Cefoperazone
2. **S. aureus (MSSA)** - resistant to Oxacillin, Benzylpenicillin, Linezolid, Clarithromycin, Clindamycin, Tetracycline



Role 2F (forward surgical team/stabilisation point)

- We also conducted microbiological testing of wound swabs and blood cultures.
- 22 patients with varying evacuation durations.
- No antibiotics or wound cleaning were administered prior to sampling.



Targeted evacuation

- Direct transport to the reconstructive centre $\leq$ 72 hours post-injury
- Evacuation to highly specialized professionals (Role 4) 1.77 days after injury on average, when the traditional route takes 11.84 days.
- Length of stay 27.27 days in the targeted group vs 37.03 days in the traditional group

Turkevych D, Kuchabskyi S, Medvid Y, Vilenskyi A, Farmaha M, Tucker S. Organization of the evacuation of the wounded in wartime: the impact of patient routing on treatment outcomes and infection risks.

Challenges and perspectives

- Establish a multicenter prospective study with a standardized culture-collection protocol at each stage, including appropriate verification
- Provide microbiological validation of targeted evacuation as an AMR-containment tool
- Revisit antibiotic prophylaxis and wound management for modern prolonged field care, not standard evacuation timelines

Next steps - brigade medical service

- Systematisation and unification approaches
- Data collection and digitalisation from point of injury
- Telemedicine and more broader education for combat medics in wound management