



Letter to the Editor

Infection control in conflict zones: practical insights from recent medical missions to Gaza



Sir,

Our recent medical mission trips to Gaza European Hospital (EGH) in Khan Younis (3–15 April and 29 April–20 May 2024) revealed a dire need for improved infection control measures to mitigate the spread of infectious disease. Infection control in Gaza is severely compromised due to the lack of sterile conditions [1]. Basic necessities, such as sterile gloves in appropriate sizes, are often unavailable, and the shortage of medical staff exacerbates the situation. Hospital admission rates are exceptionally high, and hospital grounds are used by hundreds of sheltering families, many of whom were treated by the medical staff but had no other place of refuge once their treatment was complete. Patients are admitted in clinical areas outside of EGH, which was built previously to accommodate patients with coronavirus disease 2019. Due to staff shortages, lack of dressings, and minimal antibiotic supply, nearly all patients do not receive proper wound care follow-up. This shortage leads to irregular dressing changes and sub-standard wound management. Patients with complex fractures are accommodated on firm surfaces due to limited hospital beds, making them susceptible to the development of pressure injuries and further infection. The implications of this are profound, as open wounds in unsanitary conditions are breeding grounds for infection, complicating recovery and increasing morbidity [2].

Antibiotic stewardship faces challenges, with both essential antibiotics and proper diagnostic testing unavailable. The absence of culture and sensitivity testing forces clinicians to rely on empirical treatment, which can lead to antibiotic resistance and the spread of infectious diseases [3–5]. Patients with diabetic foot infections, which can usually be treated with simple antibiotics, are presenting with necrotizing fasciitis due to lack of antibiotics. These patients end up with lower leg amputations, an otherwise avoidable complication in usual circumstances. The inconsistent availability of antibiotics and necessary medical supplies often results in the use of expired or suboptimal treatments, which can exacerbate negative health outcomes and increase the prevalence of drug-resistant pathogens [4,6].

The prevalence of hepatitis A is notably high in Gaza, attributed to unhygienic dietary and sanitary conditions [2].

This underscores the need for stringent infection control practices, and serves as a stark reminder of the critical need for basic hygiene measures and the distribution of clean water and food supplies [7]. Our observations indicate that infectious diseases such as scabies, lice infestations and various skin infections are present due to poor living conditions and overcrowded shelters. One patient was found to have maggots in his wounds and fleas in his blanket, which had not been washed for months. Operating theatres are overwhelmed with a high volume of cases and limited space; only six theatres were available for all specialties during our visits. This high-volume workload, compounded by staff shortages, results in poor sanitation of theatre space, contributing to increased infection rates.

To address these challenges, our team developed several recommendations to improve infection control during future medical missions to conflict zones. These recommendations are outlined in Table 1, with considerations for team-based interventions, personal protective equipment (PPE), logistics around wound care, healthy infrastructure and antibiotic stewardship.

PPE, such as sterile gloves, gowns and face masks, should be prioritized by visiting medical staff to maintain hand hygiene and prevent cross-contamination. Implementing mobile wound care units can ensure regular dressing changes, while training local staff in basic wound care management can alleviate the burden on visiting medical teams. There should be daily wound rounds with dressing changes and wound washing with antiseptic solutions. Use of stimulan with gentamicin and vancomycin beads in infected wounds would be helpful to control infections. Frequent wound swabs would help to guide the pattern of changing sensitivity. There is a need for more theatre staff to help implement measures such as controlling unnecessary staff access to theatres, closing theatre doors, regular deep cleaning and maintenance of a functional airflow system, which will help to improve infection rates. Maintaining a supply of broad-spectrum antibiotics, developing stringent protocols, and establishing local biograms to guide treatment plans can help local staff minimize the risk of resistance. Hygiene and sanitation efforts should include distributing hygiene kits containing essentials such as soap, disinfectants and clean water containers. Establishing mobile laboratories to enhance diagnostic capabilities can enable timely and accurate identification of infections. Providing the training and resources for frequent laboratory testing required for certain antibiotics can ensure proper monitoring and adjustment of treatments.

Table 1

Recommendations for infection control in war zones

Equip healthcare personnel with sterile and non-sterile gloves in various sizes, hand sanitizers, sterile gowns, face masks and eye protection to maintain hygiene and prevent transmission.
Establish mobile wound care units to provide regular and consistent dressing changes, train local healthcare workers in basic wound management, and decentralize care to enhance accessibility.
Implement strict protocols for wound cleaning and dressing, utilize telemedicine for remote guidance and support, and ensure consistent application of these protocols across all treatment sites.
Distribute hygiene kits containing soap, disinfectants and clean water containers, conduct public health campaigns focused on the importance of handwashing, safe food handling, and proper waste disposal, and engage the community in these initiatives.
Supply broad-spectrum antibiotics, develop empiric antibiotic protocols tailored to the specific bacterial flora of the conflict zone, and establish local antibiograms to guide effective antibiotic use and combat resistance.
Conduct daily wound rounds with dressing changes and wound washing using antiseptic solutions. Utilize stimulan with gentamicin and vancomycin beads in infected wounds to control infections. Perform frequent wound swabs to guide the pattern of changing sensitivity and antibiotic use.
Implement portable water purification systems where needed to provide a reliable and clean water supply.
Establish proper waste disposal protocols in clinical settings, and educate local communities on effective waste practices.
Create isolation areas for patients with contagious diseases to prevent cross-infection, and train staff in isolation protocols and the proper use of personal protective equipment.
Control unnecessary staff access to theatres, close theatre doors, ensure regular deep cleaning, and maintain a functional airflow system to improve infection rates.
Conduct regular monitoring and reporting of infection rates to identify and respond to outbreaks promptly, and use surveillance data to adjust infection control strategies as needed.
Establish a rapid response team to handle infection control breaches and outbreaks, ensuring immediate and effective containment measures are implemented to prevent further spread.

The insights gained from our missions to Gaza emphasize the urgent need for comprehensive infection control measures in war zones. Addressing these challenges with targeted recommendations can enhance the effectiveness of future medical missions and improve health outcomes in conflict zones [8].

Acknowledgements

We wish to thank the Ministry of Health in Gaza, as well as the orthopaedic hospital chiefs of each hospital in which we had the honour to help. We would also like to thank our partners and donors who made this mission possible. The following individuals make up the FAJR Scientific Research Collaborative, each of whom contributed to the many ideas and lessons outlined in this report: Khaled J. Saleh, Mosab Nasser, Tariq Nayfeh, Hussein Elkousy, Mohamed Moussa, Ali Anaim, Amer Quaddoura, Sanar Yokhana, Syed Ali Irfan, Ali Qadeer, Ahmed Haque, Ana Rita Proença, Junaid Sultan, Mohammed Khaleel, Wajid Jawaid, Haseeb Khawaja, Hirron Fernando, Abdullah Bokhari, Shah Rahman, Sarah Badran, Mohamad Al Bashir, Riad Abdelkarim, Hosney Amr, Abeerah Muhammad, Ahmad Hasan, Abdullah Ghali, Ali Elaydi, Alex Gilroy, Mahmud Iqdaymat, Muaaz Wajahath, Elias Nasser, Bilal Irfan, Sabria Abufares, Samir Al-Ali, Omar Hasan, Nour Alshaer, Faten Braika, Anas Alshambari, Ibrahim Zaidi, Okarys Bonilla, Ola Hamdi, Rend Nayfeh, Shayan Ali Irfan and Tareq Nasser.

Conflict of interest statement

None declared.

Funding sources

None.

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Available online 9 July 2024