

Combating infections under siege: Healthcare challenges amidst the military assault in Gaza

Bilal Irfan^{1,2,3,4}  | Izzeddin Lulu^{4,5,6}  | Adam Hamawy^{4,7,8}  |
 Abdallah Abu Shammala⁹ | Susan Kullab^{8,10} |
 Mohamed Fawaz^{3,4} | Abd Al-Karim Sammour^{6,11}  |
 Haseeb Khawaja^{4,12} | Nour Alshaer^{4,6,13} |
 Ghassan Abu-Sittah¹⁴ | Osaid Alser⁶ | Mark Perlmutter⁸ |
 Anas Al-Shembari^{4,9,11} | Jeremy Hickey^{4,15} | Tariq Nayfeh^{4,16} |
 Mohammed Tahir^{4,17} | Muhammad Junaid Sultan^{4,18} |
 Elias Nasser^{4,19}  | Muaaz Wajahath^{4,20}  |
 Aneela Yaqoob^{4,21} | Ahmad Hasan^{4,22} | Ali Elaydi⁴ |
 Abdullah Ghali^{4,23}  | Mosab Nasser⁴  | Khaled J. Saleh^{4,20} 

Correspondence

Bilal Irfan, Harvard Medical School, 25 Shattuck Street, Boston, MA 02115, USA.
 Email: bilal_irfan@hms.harvard.edu

Khaled J. Saleh, 6206 Cibola Park Ln, Suite 100, Houston, TX 77041, USA.
 Email: khaled.saleh@FAJRScientificUS.org

Abstract

The ongoing Israeli military assault on Gaza has caused a devastating collapse of healthcare infrastructure, resulting in an unprecedented surge in infectious diseases. The destruction of sanitation systems, restrictions on medical supplies, and displacement of civilians have created an environment conducive to the rapid spread of waterborne, vector-borne, and antibiotic-resistant infections. This paper draws from the insights of local Palestinian healthcare workers and recent medical missions conducted by FAJR Scientific, the Palestine American Medical Association, and Doctors Without Borders, examining infection control efforts under extreme constraints. The missions encountered major challenges, such as the absence of

For affiliations refer to page 201.

Combating Infections Under Siege: Healthcare Challenges Amidst the Israeli Military Assault on Gaza.

Gaza Infection Crisis, Infection Control Recommendations in Conflict Zone, Medical Supply Shortages.

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2024 The Author(s). *World Medical & Health Policy* published by Wiley Periodicals LLC on behalf of Policy Studies Organization.



sterile equipment, inadequate access to clean water, and disrupted healthcare services. These conditions have exacerbated the spread of diseases such as hepatitis, meningitis, and polio, with severe impacts on Gaza's pediatric population. Efforts to implement infection control measures, such as telemedicine consultations, wound care protocols, and antibiotic stewardship, were heavily impeded by the ongoing blockade. The paper underscores the critical importance of lifting the siege to allow humanitarian access and to address the root causes of the infectious disease crisis in Gaza. It also highlights the resilience of Palestinian healthcare workers who continue to provide care under these dire circumstances. The recommendations outlined aim to support future medical teams working in conflict zones by providing practical strategies for infection prevention and control amidst such sustained violence. These efforts are contingent on international intervention and an end to the systematic blockade that has weaponized healthcare access.

KEYWORDS

antibiotic resistance, conflict zone healthcare, Gaza infection crisis, healthcare infrastructure, humanitarian crisis in Gaza, infection control measures, infectious diseases control, medical supply shortages, waterborne diseases

Key points

- **Impact of Blockade and Military Assault on Healthcare Infrastructure:** The Israeli blockade and systematic destruction of Gaza's healthcare infrastructure have severely exacerbated the spread of infectious diseases, leading to high morbidity and mortality rates, especially among children.
- **Challenges in Infection Control:** Efforts to combat infections through telemedicine, wound care, and antibiotic stewardship are severely limited by the lack of medical supplies, sterile equipment, clean water, and the inability to implement standard infection control protocols due to the blockade.
- **Urgent Need for International Action:** The paper calls for immediate international intervention to lift the blockade and ensure unrestricted humanitarian access, as healthcare in Gaza cannot recover or provide adequate care until the siege is ended.

INTRODUCTION

The infection crisis in Gaza, a direct man-made consequence of Israel's deliberate blockade and systemic violence, has reached a critical point (Oxfam International, 2024). Immediate and comprehensive interventions are urgently needed to control, prevent, and manage the



resulting infectious diseases (Hussein et al., 2024). A careful examination of the cascading effects of the blockade and military assault on Gaza's healthcare system, focusing on the resulting public health emergency driven by the surge in infectious diseases is imperative. Drawing from firsthand observations and medical missions, we emphasize the critical need for international intervention to avert further escalation of morbidity and mortality. The catastrophic conditions and immense barriers faced and reported on by healthcare providers for the past year in this conflict-ravaged region were starkly evident during our recent medical missions spanning FAJR Scientific (April 3–April 15; April 29–May 20; June 13–August 16) and Palestine American Medical Association (May 1–May 21) to the Gaza European Hospital (EGH) in Khan Yunis, as well as a FAJR team to the Public Aid Hospital in Gaza City and Kamal Adwan Hospital in Beit Lahia in northern Gaza (July 24–August 9), and a Doctors Without Borders (October 9–November 18) mission to Al-Shifa Hospital and Al-Ahli Arab Hospital in Gaza City (Beiraghdar et al., 2023). EGH served as a specialist facility that provided a significant proportion of services in the south of the Gaza Strip during the span of its operation, and stood as one of the few remaining facilities operating for a longer-duration following Israel's attacks on other hospitals or restrictions on essential fuel and supplies (Lyons, 2024).

By July 1st, 2024, our visiting team working alongside local staff were forcibly displaced from EGH, a direct result of the escalating violence and targeted destruction of healthcare infrastructure by Israel. Patients were forced to travel, many on foot, to the Al-Aqsa Martyr's Hospital approximately 10 km away in Deir Al-Balah as we resumed operations on July 3rd. We continued to face significant entry barriers, particularly for Palestinian-origin team members (Arraf, 2024; M.I., 2024a). These obstacles are a deliberate consequence of Israel's tightened blockade and siege, aimed at restricting essential medical support to Gaza and enforcing collective punishment on the civilian population (The New Humanitarian, 2024; Siege and Starvation, 2024; Israel defying ICJ ruling to prevent genocide by failing to allow aid into Gaza Internet, 2024; Israel, 2023a; As Civilian Casualties Reach Record Levels in Gaza, 2024). The combination of sustained large-scale violence on civilian areas has precipitated a series of intermediate consequences, including environmental degradation, targeted and widespread destruction of the healthcare infrastructure, weakened immune systems as a consequence of high-stress levels, and sleep deprivation (The Unprecedented Environmental Cost of Israel's Genocide in Gaza Internet, 2024; Ecocide in Gaza, 2024; Garcia, 2024; Gaza Genocide's Environmental Damage Assessed—HLRN Internet, 2024; Statement on the UNEP Assessment on Environmental Damage in Gaza Internet, 2024; Scorched-earth, 2024; Pernot, 2024; admin, 2024a; Ahmed et al., 2024; Israel attacks on Gaza leave massive carbon footprint: Study Internet, 2024; Rights expert finds 'reasonable grounds' genocide is being committed in Gaza and UN News Internet, 2024; Is Israel Committing Genocide in Gaza? New Report from BU School of Law's International Human Rights Clinic Lays Out Case Internet, 2024; Genocide in Gaza Internet, 2024; Boston 677 Huntington Avenue, Ma, 02115, 7 Huntington Avenue, Ma, 02115, 2024; Qurbani et al., 2024; Addressing the Effects of War on Gaza's Healthcare System and Cureus Internet, 2024). Intentional deprivation of access to nutritious food, leading to malnutrition, and limited access to essential medical supplies, and outright denial, have led to delayed and incomplete treatment of emerging infections, driving increased rates of morbidity and mortality among the civilian population (Van Boetzelaer et al., 2023; Elessi, 2023; Israel, 2023b; Salmiya, 2023a; Zughbur, 2023). As healthcare workers and advocates, we report our observations and findings and contextualize it within the broader scope of what is unfolding, while definitive legal determinations on the nature of the crimes are a matter of debate (Irfan et al., 2024). On October 15th, 2024, eight medical NGOs, including groups our authors work with, have been denied entry into Gaza shortly after publication of a New York Times Op-Ed detailing instances of pediatric gunshot wounds (Masih & Brown, 2024; Sidhwa, 2024).

At the time of this writing, 34 children have died in Gaza secondary to malnourishment, highlighting the need for not only adequate healthcare but for basic life necessities including food and water (UN experts declare famine has spread throughout Gaza strip | OHCHR [Internet], [n.d.](#)). Alarms have been sounded around the world with respect to analyses of the crimes unfolding in Gaza constituting genocide, with a clear trajectory that mirrors historical cases of ethnic cleansing and systemic extermination, as a continuation of decades of occupation, rampant settler colonialism, and the implementation of an apartheid regime (A Threshold Crossed, [2024](#); Monitor, [2023](#); Israel's apartheid against Palestinians Internet, [2022](#); Israeli Forces' Conduct in Gaza and Human Rights Watch Internet, [2024](#); Israel's progression from Apartheid to Genocide Internet, [2024](#); Israel's Unfolding Crime of Genocide of the Palestinian People & U.S., [2024](#)). Multiple documented instances reveal the systematic use of genocidal rhetoric by top Israeli officials, military personnel, and influential figures, often amplified through social media (admin, [2024b](#)). From the president and prime minister to military officers and members of the Knesset, these figures have openly called for the destruction and forced displacement of Palestinians in Gaza (Pita, [2024](#); Watch, [2024](#)). For example, President Isaac Herzog stated, "There are no innocent civilians in Gaza," while Prime Minister Netanyahu invoked biblical references, dehumanizing Gaza as "the city of evil" (Ghanem, [2024](#)). Israeli Defense Minister Yoav Gallant spoke of turning Gaza into a "slaughterhouse," while Knesset member Ariel Kallner openly advocated for another "Nakba" against Palestinians, surpassing the devastation of 1948 (Media, [2024](#)). Other Knesset members such as Galit Distal Atbaryan shared posts on social media in support of "erasing all of Gaza from the face of the Earth. Gaza needs to be wiped out," while others such as Amit Halevi included ensuring "there is no more Muslim land in the land of Israel" amongst the goals of victory (Media, [2024](#)). These are but a handful of over hundreds of documented cases of public incitement and weaponization of genocidal language (APPLICATION INSTITUTING PROCEEDINGS Internet, [2024](#)). Social media posts by IDF soldiers have also displayed this criminal intent, ranging from blowing up buildings in Gaza, posing with mutilated corpses of Palestinians, women's underwear, and in front of destroyed hospitals, distributing disturbing images of artillery shells bearing messages like, "God willing, it will hit innocent people," and rifling through the possessions of Palestinians with gleeful expressions (Assi, [2024](#); Joint Communication to the Office of the Prosecutor of the International Criminal Court Regarding the Perpetration of the Crime of Genocide by Members of the Israeli War Cabinet Internet, [2024](#); News ABC, [2024](#)). Such rhetoric, appearing from top officials to rank-and-file soldiers, has helped fuel public acceptance of military actions that constitute the gravest of human rights violations, and an alarming normalization and glorification of dehumanization and violence against Palestinians (Half of Israeli Jews say Israel should not obey international law in Gaza Internet, [2024](#); Iraqi, [2024](#); Israel/OPT, [2024](#); Jewish Israelis believe IDF is using appropriate force in Gaza, [2024](#); Majority of Israelis want censorship of social media posts sympathetic to Palestinians in Gaza Internet, [2024](#); Smerkovich, [2024](#)). It thus comes as little surprise, in fact it is a logical consequence thereof, that the healthcare system in Gaza lay in utter decimation, a breeding ground for the unrestrained spread of infectious diseases.

OUTBREAKS OF INFECTIOUS DISEASES: CAUSES AND CONSEQUENCES

The Gaza Strip has been under a land, sea, and air blockade since 2007, when Israeli authorities significantly intensified already-existing restrictions on movement and access to goods, leaving 80% of Palestinians reliant on humanitarian aid to maintain basic components of life, including food (Elliott, [2023](#); Siege & Starvation, [2024](#); The Gaza Strip, [2024](#)).



Declassified documents and leaks have revealed that the Israeli military meticulously calculated the caloric intake of Gaza's civilian population, with an intent to keep the economy on the brink of collapse (Hass, 2012; Israel Counted Calories Needed for Gazans in Blockade - The New York Times Internet, 2024; Israel Gaza blockade study calculated Palestinians' calories, 2012; People in northern Gaza forced to survive on 245 calories a day, 2024; Staff & the, 2012). In addition to these restrictions, arbitrary decisions on allowable goods were enforced, permitting items such as frozen salmon and low-fat yogurt, while banning everyday essentials like coriander and even instant coffee, further illustrating the punitive nature of the blockade (Press, 2012). This perpetual siege, alongside recurrent military assaults of varying degrees in 2008, 2009, 2010, 2012, 2014, 2018, 2019, 2021, 2022, and 2023, described as 'mowing the lawn', led to the existence of a weak, albeit functional, healthcare infrastructure in Gaza (Crowder, 2024; Gaza before 7 October & MSF Internet, 2024; Taylor, 2021).

Gaza is now facing an unprecedented outbreak of infectious diseases, directly exacerbated by and a consequence of the downstream effects of Israel's systematic destruction of infrastructure and the deliberate creation of inhumane living conditions (Al-Jadba et al., 2024; Administrator, 2024a; Seita & Al-Jadba, 2023; United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory, 2024). The number of reported infectious disease cases is likely underrepresented with the lack of access to medical care and lack of diagnostic workup (Zhang, 2023). Suspected Hepatitis A, illustrated by a dramatic increase in cases of acute jaundice syndrome—lab confirmation is extremely limited—is one of the most prevalent infections and is primarily spread through contaminated food and water, a direct consequence of the blockade's impact on sanitation (Gaza, 2024a; Increasing disease and humanitarian strain in Gaza amid aid shortages & UN News Internet, 2024). The deliberate destruction of sanitation facilities and the blockade-induced collapse of desalination plants have caused the rapid breakdown of preventative measures, allowing infection rates to skyrocket (AbuQamar et al., 2023; Abuzerr et al., 2024; Barely a drop of safe water to drink in Gaza, 2023; Damage to Gaza causing new risks to human health and long-term recovery - new UNEP assessment Internet, 2024; Efron et al., 2019; Hall et al., 2024; Rantissi et al., 2024; Razum et al., 2024; Shomar & Rovira, 2023). Israel's blockade is not just an impediment—it is a calculated act of aggression against the health and wellbeing of Gaza's civilian population (Alkhalidi et al., 2022; Israel must lift illegal and inhumane blockade on Gaza Internet, 2023). Lower respiratory infections are rampant, along with complicated presentations such as empyema, with there being an ever-growing need for diligence about the emergence of less common infections such as tuberculosis ('We Are All Sick', 2024). A wide variety of transmissible illnesses such as meningitis and varicella have been observed as well, with overcrowding in makeshift camps and limited access to healthcare services contributing to the high transmission rates of these diseases, as well as the overall degradation of environmental conditions in Gaza (Gaza's Health Ministry reports meningitis, 2024; Israel Hamas War, 2024).

Hospital grounds, overwhelmed by families displaced by Israeli airstrikes, have become breeding grounds for infection due to the unsanitary conditions imposed by the blockade (Abed Alah, 2024; Administrator, 2024b). Thousands of people have sought refuge in and around hospitals, assuming—often incorrectly—that such facilities will confer some degree of safety amidst the ongoing violence ('This Terrible War Must End', 2024). Patients, including those in a stable postoperative condition, often have little choice but to seek shelter in close proximity to sewer drainage spills, creating unhygienic environments that directly result from Israel's systematic degradation of Gaza's infrastructure ('Ticking time bomb', 2024). One such example is the recent discovery by the Gaza Ministry of Health and the United Nations children's agency (UNICEF) of the "component poliovirus 2" in samples of sewage water that flows between the tents of people who have been displaced many times over (Highly infectious poliovirus found in Gaza sewage samples et al., 2024; Lien & Heymann, 2013; Variant type 2 poliovirus isolated from sewage samples in Gaza – GPEI



FIGURE 1 Infection-laced severe trauma, with cases of external fixation.

Internet, 2024; ‘Ticking time bomb’, 2024). In August 2024, a 10-month-old boy was diagnosed with Polio (Polio returns to Gaza, 2024). This represents the first case of polio in Gaza in 25 years. Without countermeasures, this poses an imminent threat for polio outbreak with devastating consequences. While a certain, limited number of polio vaccines have arrived in Gaza, the implementation of a vaccination campaign is quite challenging (Kim, 2024). With the continuous and deliberate targeting of healthcare facilities, UN facilities, and EMT personnel, this campaign can not be expected to reasonably survive, and polio will continue to threaten the lives of Gaza's children with potential for spillovers in the nearby region.

During our missions, we frequently encountered patients with infected postoperative wounds, of which some were infested with maggots, a direct consequence of the lack of clean conditions, proper wound care, and nutrition. A recent mission by a Jordanian team (HOPE) led by Dr. Osama Hamed reported an over 80% incidence of surgical site infection (What We have Witnessed in Gaza? Internet, 2024). The scenes described by Palestinian health workers, our visiting volunteers, and photos from our missions, depict these unsanitary conditions, highlighting the urgent need for improved infection control measures (Figure 1).

CHALLENGES IN MEDICAL RESPONSE

A May 2024 report by the World Health Organization (WHO) underscores Gaza's health system as severely strained and at high risk for exacerbating the spread of infectious diseases (Dpr 3, 2024). Contaminated water and inadequate sanitation have greatly increased the



spread of suspected rotavirus and acute watery diarrhea (AWD), leading to higher rates of gastroenteritis and other GI infections, particularly in children (aqu2020,20, 2024a; Dpr 3, 2024). Israel's denial of access to clean water and the destruction of pre-existing sanitation infrastructure has led to frequent outbreaks of diarrheal diseases, with children being the most vulnerable (Masoud & Salem, 2023). Waterborne diseases remain a major concern due to the compromised water supply, which can allow for the spread of typhoid fever (Gaza faces imminent typhoid, 2024; Irfan et al., 2024a). Cholera, although not endemic, poses a significant threat due to the potential for outbreaks in such conditions (Gazans face threat of cholera and other infectious diseases, says Oxfam Internet, 2023). Diarrheal diseases, caused by pathogens like *Escherichia Coli* and *Shigella*, are prevalent, primarily manifesting among children; these diseases are often fatal in children in conditions of severe dehydration and lack of appropriate medical care (Kotloff, 2017). This has led to increased hospital admissions and created additional strain to an already overburdened system. In addition to the risks posed by the blockade, there is the potential for the introduction of diseases by humanitarian workers entering Gaza. Although their presence is vital, there is a real possibility that they could unintentionally introduce non-endemic diseases such as cholera or other infections. Efforts to impose quarantine are faced with the challenge of the difficulty in tracing or isolating suspected cases.

Before the current military aggression on Gaza, limited measures such as routine vaccinations for children, regular medical care, and precautions for the immunocompromised were possible, albeit in a constrained capacity. Now, even these essential interventions are unattainable, posing a critical risk that significantly increases the likelihood of sepsis and death (Number of 'zero-dose' children increased by more than one-third last year in the Middle East and North Africa Internet, 2024). The contamination of water sources with sewage exacerbates the spread of these diseases, making clean water access a critical intervention point. According to assessments before October 2023, nearly 97% of Gaza's water supply is unfit for human consumption due to contamination and salinity, significantly increasing the risk of waterborne diseases (Gaza's Water Crisis Puts Thousands at Risk of Preventable Death - occupied Palestinian territory and ReliefWeb Internet, 2023; Israeli Authorities' Cutting of Water Leading to Public Health Crisis in Gaza and Human Rights Watch Internet, 2024).

According to the WHO, the aforementioned conditions have significantly contributed to the high rates of morbidity and mortality in Gaza's pediatric population (Dpr 3, 2024; Zhu et al., 2024). Vector-borne diseases like leishmaniasis and dengue fever are also noted to potentially be an emerging cause of concern in Gaza (aqu2020, 2024b; Dangerous skin diseases spreading among children in Gaza Internet, 2024; Diseases, 2024). The presence of stagnant water and poor waste management provides ideal breeding grounds for disease-carrying vectors such as mosquitoes and sandflies, with the presence of rodents, scorpions, and snakes in evacuated areas being noted. Furthermore, the WHO report details the rising incidence of skin infections and infestations such as scabies and lice (Dpr 3, 2024). Overcrowded and unsanitary living conditions have led to widespread outbreaks of these conditions, which are often complicated by secondary bacterial infections due to the lack of proper treatment and hygiene measures. These infections significantly impact the quality of life and overall health of Palestinians affected by the ongoing violence (Aždajić et al., 2022; Nair et al., 2016).

Israel's actions, which deliberately create these dire conditions, constitute war crimes under international law (Israeli attacks wipe out entire families in Gaza Internet, 2023). The blockade, siege, and systematic violence against the Palestinian people in Gaza taken together are not only individual violations of human rights but a reverberation of crimes against humanity under an existing framework of apartheid (Sultany, 2024). A recent video posted by an Israeli soldier showcasing soldiers blowing up a water reservoir in Rafah,



under the direction of a commanding officer, underscores the nature of attacks impacting the very sustenance of life (Israeli Army Commanders Gave Order to Blow Up Rafah Reservoir, 2024). These crimes have led to an alarming increase in antibiotic-resistant infections, a direct result of the overuse and misuse of antibiotics in an environment where proper microbiological testing is almost non-existent (Chinemerem Nwobodo et al., 2022; Ibrahim et al., 2024; 3 questions to MSF, 2024; Samreen et al., 2021; Scholle et al., 2024; Symochko et al., 2024; Ventola, 2015). The healthcare workers in Gaza are forced to rely on empirical treatments, often using expired or suboptimal antibiotics, further complicating the treatment landscape and increasing the risk of severe health outcomes.

FIELD OBSERVATIONS

The lack of sterile equipment and supplies further compounds the infection crisis (Irfan et al., 2024b). Basic necessities such as sterile gloves, gowns, and drapes are often unavailable, making it challenging to maintain hygiene during medical procedures (Irfan et al., 2024b). Compounding these challenges is the scarcity of essential hand hygiene materials, including clean water, soap, and alcohol-based sanitizers. This deficit has been a significant factor in the outbreaks of antibiotic-resistant infections, which have contributed to increased morbidity and mortality. During our mission at EGH, we observed an alarming outbreak of Carbapenem-Resistant *Acinetobacter baumannii* (CRAB) in one of the ICUs. The absence of proper equipment for sterilizing ventilator apparatus played a critical role in the emergence and spread of this outbreak. Inadequate waste disposal options due to a shortage of medical waste bins has led to the use of open barrels of contaminated supplies and equipment, a breeding ground for flies and unsanitary conditions. This shortage was particularly evident during bedside ICU procedures, where the absence of sterile conditions likely precipitated the spread of multiple infections (Nasser et al., 2024). At one point in EGH, fluoroscopy machines (X-ray imaging) dedicated for the emergency room were non-functional due to an exploded drain pipe. Moreover, the inconsistent availability of antibiotics and the lack of microbiology services to accurately identify pathogens and their resistance profile forced clinicians to rely on broad, empirical treatments. This practice, combined with the shortened duration of treatment, and the use of expired or suboptimal antibiotics, has contributed to the rise of antibiotic-resistant pathogens, complicating the treatment of infections and increasing the risk of poor health outcomes (Chokshi et al., 2019; Hays et al., 2022; Llor & Bjerrum, 2014; Muteeb et al., 2023; Ogunshe & Adinmoyema, 2014; Shafat et al., 2021; Sharma et al., 2024; What is fuelling the world's antimicrobial resistance crisis? Internet, 2023).

At the Al Ahli Arab Hospital, which primarily serves as a tertiary facility for orthopedic surgery in Gaza, one of the key barriers to providing care is the challenge of sterilizing medical equipment. Autoclave machines, which are essential for sterilizing surgical instruments using high-pressure steam, require water that is extremely low in dissolved solids for effective operation. However, the hospital's current water supply has a Total Dissolved Solids (TDS) level of 200, far higher than the ideal 0 TDS required for sterilization. While 200 TDS is considered safe for drinking, it is inadequate for autoclaves, as impurities in the water can interfere with sterilization, leading to frequent malfunctions and failures. These issues disrupt the workflow in operating rooms and compromise the sterility of surgical instruments. As a result, numerous open reduction and internal fixation (ORIF) procedures have been complicated by postoperative surgical site infections associated with the implanted plates. This issue has raised significant concerns and prompted the establishment of a dedicated infection control committee to rigorously investigate and determine the underlying causes of these postoperative infections. Additionally, a new initiative is underway to procure a



dedicated water purification system specifically for the autoclave machines to address the recurrent malfunctions in the sterilization process. However, the implementation of this project has faced significant challenges due to restrictions imposed by the Israeli military, which have hindered progress and prevented the realization of this critical improvement.

Our missions have highlighted specific cases that underscore the gravity of the situation. Patients with abdominal wounds from blast or shrapnel injuries often experience surgical site infections that fail to heal due to the lack of tailored antibiotic treatments. Women in Gaza are particularly vulnerable, with many developing UTIs that progress to urosepsis and pyelonephritis due to poor hygiene and lack of early treatment. In one instance, we treated a young woman with renal abscesses likely caused by the use of unsanitary cloths as menstrual pads. These cases highlight the critical need for access to essential material humanitarian assistance and community healthcare services that can provide early treatment and garner support to create the conditions vital for the implementation of best hygiene practices. Additionally, there was a severe shortage of antibiotic plates in all laboratories, from which culture and sensitivity reporting was performed manually. This communication issue is compounded by the shortage of paper and printers, computers, and stable internet connection (Alser et al., 2024). Telehealth consults with providers outside of Gaza for the management of infections, including resulting recommendations for alternative antibiotics like Linezolid or Daptomycin are often met with the sobering reality of their unavailability, leaving on-ground clinicians with limited options to treat infections effectively.

The pattern of antibiotic usage varies between hospitals, primarily based on consultant knowledge and experience, with some contribution from the microbiology lab. Many of the local Palestinian healthcare workers have faced abuse, torture, and targeted killings that has compounded shortages of specialist care (Abdul, 2024; Israeli military is destroying hospitals and targeting medical staff in Gaza, 2024; Palestinian Healthcare Workers Chained, 2024; Palestinian medics taken from Gaza, tortured while detained: Report Internet, 2024). Antibiotic choices are largely influenced by availability, with third-generation cephalosporins currently preferred in Shuhada Al-Aqsa Hospital, while colistin and amikacin are used less frequently. Vancomycin is used extensively in both hospitals; however, its limited availability leads to incomplete therapy, while the monitoring of vancomycin levels is not possible due to the lack of necessary resources in Gaza (Kosugi et al., 2022; Moussally et al., 2023).

Endotracheal intubation (Figure 2) posed significant challenges due to variable availability, sterility, and functionality of equipment. Although drugs such as ketamine and succinylcholine (scoline) were generally available, direct access to them could be difficult. Additionally, opioids to blunt the cardiovascular response to intubation were entirely unavailable. Sterility of endotracheal tubes and laryngoscope blades was inconsistent; laryngoscope blades were often merely wiped clean rather than sterilized. Furthermore, the light source on the laryngoscope handle was frequently dim, unreliable, or absent, complicating intubation procedures. Access to intubation adjuncts like bougies or stylets was problematic, and these were often damaged and unsterile. Compounding these issues, donations of airway equipment were often redirected to the operating rooms, where supplies were relatively adequate but not systematically organized for easy access. Additionally, with supplies such as endotracheal tubes and laryngoscopes being allocated for operating room usage, severe shortages were compounded in the emergency room. Post-intubation sedation options were typically limited to additional ketamine and occasionally midazolam, whereas the preferred sedatives such as propofol combined with opioids were largely unavailable. Although propofol was available in the hospital, supplies were preferentially diverted to operating rooms and intensive care to meet acute care and surgical needs.

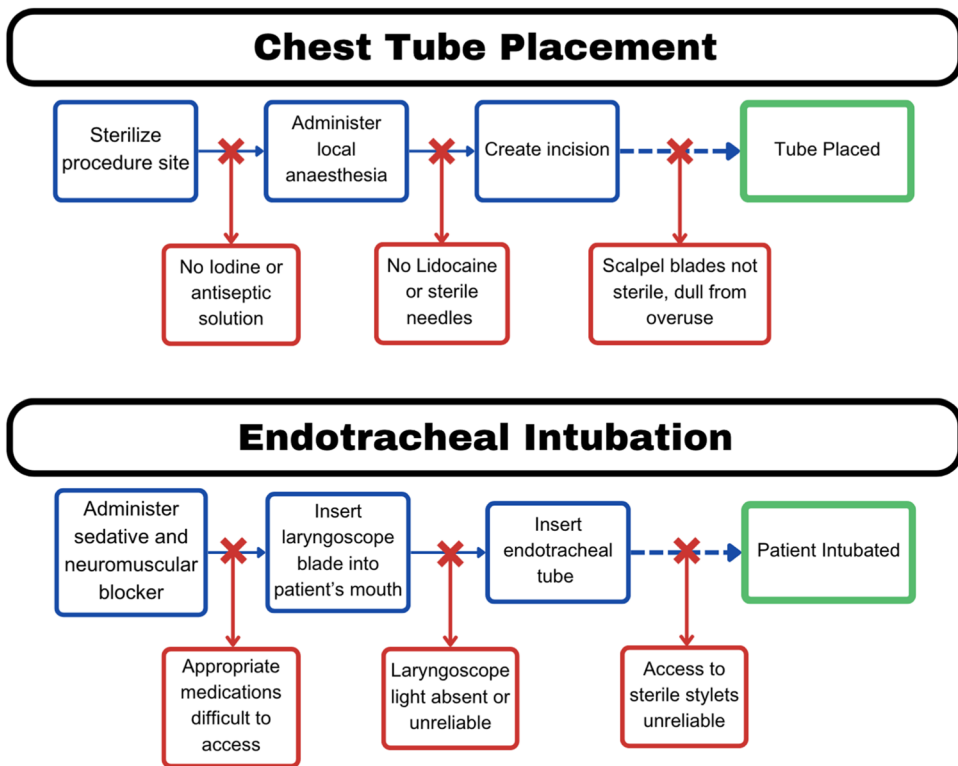


FIGURE 2 Obstacles encountered with two routine emergency department procedures in Gaza.

PATHWAYS TO SUSTAINING HEALTH

Only recently, we suggested a series of recommendations for medical teams traveling to Gaza and other areas under military assault zones (Irfan et al., 2024b). These guidelines, now further enhanced, aim to reduce infection rates and improve patient outcomes by ensuring the provision of proper PPE, developing portable water purification systems, establishing wound care units, and leveraging the use of telemedicine (Table 1). However, it is crucial to note that the extent to which these guidelines are practical rather than idealistic is dependent almost entirely on the extent to which medical aid is allowed into Gaza. Without sufficient humanitarian access and the availability of medical services, endemic diseases like typhoid and dengue fever will only become more prevalent and non-endemic diseases like cholera and polio will also become a threat, the latter already an acute cause of concern. Visiting teams face additional obstacles and tighter regulations imposed by Israel as the crisis deepens. For example, the amount of luggage volunteer medical staff is permitted to bring with them on missions has significantly decreased over the last several months, leading to a situation where antibiotics and lab supplies compete with surgical and wound care equipment to be brought in and rationed for use (Gaza, 2024b; MSF health facilities across Gaza face critical shortage of medical supplies & MSF Internet, 2024; Press, 2024; The near impossible task of getting lifesaving supplies into Gaza EN/AR - occupied Palestinian territory & ReliefWeb Internet, 2024). Additionally, carriage of medical equipment across Israeli checkpoints en route to Gaza carries the risk of confiscation, or even rejection of personnel and dismissal from missions (Israel has denied access to many planned aid missions to northern Gaza Strip: UN Internet, 2024; The near impossible task

TABLE 1 Strategizing infection prevention and control amidst military assault on Gaza.^a

Recommendation	Description	Resources required	Potential challenges
Provision of Essential Personal Protective Equipment (PPE)	Ensure consistent supply and distribution of sterile and non-sterile gloves, gowns, face masks, and eye protection across all healthcare facilities to prevent infection transmission among healthcare workers and patients. Prioritize locally producible PPE where feasible to mitigate supply chain disruptions.	PPE supplies, logistics for distribution, local production facilities.	Supply chain disruptions, import restrictions, logistical challenges
Hand Hygiene Reinforcement	Supply healthcare facilities with adequate amounts of hand sanitizers, antiseptic soaps, and establish handwashing stations in strategic locations within hospitals and clinics. Conduct brief training sessions emphasizing the importance and techniques of proper hand hygiene among healthcare personnel and caregivers (including family members present in hospital settings).	Hand sanitizers, soaps, training materials.	Water scarcity, inconsistent supply of hygiene products, cultural barriers.
Access to Effective Infection Control Supplies	Provide hospitals with Environmental Protection Agency (EPA)-approved disinfectants and sanitizing wipes to maintain clean and safe clinical environments. Supply appropriate medical waste bins, bags, and disposal supplies to ensure safe and hygienic handling of biomedical waste. Develop and enforce strict waste segregation and disposal protocols, and standardized cleaning protocols for high-touch surfaces and medical equipment to reduce the risk of cross-infection.	Disinfectants, sanitizing wipes, waste management supplies.	Waste disposal challenges due to infrastructure damage, limited access to supplies.
Critical Care Infection Control	Equip healthcare facilities with critical infection control supplies, including closed-system suctioning devices for endotracheal tubes, central venous catheter kits, peripheral intravenous cannula caps, alcohol swabs, and disposable bed linens. Prioritize equipment that can be reused safely after proper sterilization when disposable options are limited.	Infection control supplies, sterilization equipment.	Supply shortages, equipment wear and tear, lack of sterilization resources.
Antibiotic Stewardship and Diagnostics	Provide access to blood culture bottles, culture swabs, and basic microbiological testing materials to enable accurate identification of pathogens. Ensure a steady supply of essential antibiotics, including broad-spectrum agents, and develop standardized empiric treatment protocols adapted to local resistance patterns and resource availability. Initiate systematic collection and analysis of infection and antibiotic resistance data across healthcare facilities to inform empiric therapy choices and monitor emerging resistance trends. Collaborate with international health organizations to support data management and analysis efforts.	Antibiotics, diagnostic tools, data management systems.	Limited laboratory capacity, inconsistent antibiotic supply, resistance to new protocols.

TABLE 1 (Continued)

Recommendation	Description	Resources required	Potential challenges
Implementation of Telemedicine Support systems	Establish robust telemedicine networks connecting local healthcare providers with international infectious disease and infection control specialists. Utilize these platforms for remote consultations, guidance on complex cases, development of treatment protocols, and continuous medical education to compensate for the scarcity of specialists on the ground.	Telemedicine platforms, training for healthcare workers.	Technological limitations, communication barriers, weak and intermittent WiFi service, resistance to remote guidance.
Wound and Burn Care	Reinstate and support specialized wound care clinics and multidisciplinary teams to provide comprehensive care for patients with complex wounds and burns. Develop standardized wound care protocols, ensure availability of necessary dressings and antiseptics, and conduct regular training sessions for healthcare workers on advanced wound management techniques given the resource-scarcity.	Wound care supplies, antiseptics, training materials.	Resource limitations, supply chain disruptions, lack of training.
Enhancement of Water, Sanitation, and Hygiene (WASH) Infrastructure	Deploy portable water purification systems to ensure access to clean and safe water within healthcare settings. Advocate for the repair and maintenance of existing sanitation facilities and collaborate with humanitarian organizations to improve overall WASH conditions in medical and community settings.	Water purification units, repair materials, WASH experts	Infrastructure damage, limited resources, access restrictions.
Psychosocial Support for Healthcare Workers and Patients	Provide mental health support services for healthcare professionals and patients dealing with trauma and stress due to ongoing conflict and healthcare challenges. Incorporate stress management and resilience-building programs to support the well-being and effectiveness of healthcare teams. Prepare tailored intervention strategies and plan to bring appropriate psychiatric and sleep medicine tools for effective care outcomes.	Trained counselors, resilience-building programs, sleep medicine tools	Stigma, access barriers, resource limitations.
Advocacy for Unrestricted Humanitarian Access and Support	Collaborate with international bodies to advocate for unhindered access to humanitarian aid, medical supplies, and support personnel. Highlight the urgent need for lifting restrictions that impede healthcare delivery and exacerbate health crises and infection spread within Gaza.	Advocacy resources, communication channels, support from global entities	Political resistance, complex geopolitical environment, inconsistent support from international actors.

^aThe implementation of these recommendations is heavily contingent on the allowances and restrictions imposed by the Israeli blockade, entry limitations, and ongoing bombardment. While responsibility for these actions may be distributed among various entities spanning NGOs, international bodies and experts, foreign governments, on-ground healthcare personnel, and the local Ministry of Health, it ultimately depends on Israel's conduct in Gaza and what it permits to enter the Strip. The immediate and high-priority nature of these interventions is clear, as is the need for continuous monitoring and evaluation, though these processes face significant obstacles. Despite these challenges, Palestinian healthcare workers have demonstrated extraordinary flexibility, adaptability, and resilience under the most extreme conditions, and these recommendations are intended as potential tools to support their efforts and alleviate some of the burdens they face.



of getting lifesaving supplies into Gaza EN/AR - occupied Palestinian territory & ReliefWeb Internet, (2024).

Furthermore, the absence of essential humanitarian assistance in the context of the ongoing violence creates an environment in which common emergency department procedures, such as thoracostomies and intubations put patients at a massively increased risk of infection (Figure 2); the condition of these infected patients is only worsened by the lack of antibiotics present to treat these avoidable complications. Efforts to procure these sedatives from Jordan and transport them to Gaza were thwarted due to frequent delays and denial of access at Israeli checkpoints. The broader system for delivering humanitarian aid to Gaza encounters significant challenges, including denials, prolonged delays, and the rejection of even basic medical supplies under the pretext of “dual-use” concerns (M.I, 2024b; Report of the independent international commission of inquiry on the protests in the Occupied Palestinian Territory A/HRC/40/74 Advance Edited Version - occupied Palestinian territory & ReliefWeb Internet, 2019). The limited capacity of medical organizations to bring in supplies through restricted personnel rotations addresses only a small fraction of the overall need. Consequently, much of the medical staff has become resigned to the ongoing shortage of opioids, pending the reopening of the Egypt-Rafah crossing, which has been closed and largely destroyed since the Israeli ground invasion of Rafah in May (Israeli forces “destroy” Rafah crossing's departure hall Internet, 2024).

CONCLUSION

We recognize what we share here may not hold true even hours or days later from our report, due to the rapidly evolving situation on the ground. With the ongoing, severe shortage of the most basic medical supplies, healthcare workers and patients throughout Gaza have been faced with the challenge of attempting to deliver health services under the most intensely difficult conditions every day for more than 11 months at the time of writing, despite repeated calls to end the violence, ensure humanitarian access, and address this dire situation by the United Nations, a multitude of organizations, and global civil society (Correia, 2024; Israel, 2024). This conflict has caused immense suffering to the civilian population and the widespread destruction of infrastructure with ramifications expected to last generations (Abbas & Mitchell, 2024; Abi-Rached & Reinhart, 2024; Abuzerr & Zinser, 2024; Albhaisi, 2024; Alser & Alser, 2023; Ashour et al., 2024; Banerjee, 2024; Bird, 2024; Bjertness et al., 2023; Buss et al., 2023; Coghlan et al., 2024; Dehghan et al., 2024; Elnakib et al., 2024; Faddoul et al., 2024; Haar et al., 2023; van der Heijden, 2023; Homer et al., 2024; Huynh et al., 2024; Jamaluddine et al., 2023; Jawad et al., 2020; Kadir & Kampalath, 2023; Khan & Tinua, 2024; Khwaja et al., 2023; Mahmoud & Abuzerr, 2023; Moscatelli et al., 2024; Musa et al., 2023; Qassem-Hassan & Walden, 2023; Salam, 2024; Salmiya, 2023b, 2024; Shellah, 2023, 2024; Smith-Amara, 2024; Souza et al., 2024; Yaqub et al., 2023). Numerous human rights experts, lawyers, academics, and scholars have repeatedly warned of an ongoing genocide in Gaza perpetrated by Israel, citing numerous statements by Israeli politicians and the conduct of its military activities (M.I, 2024c; Perugini & Gordon, 2024; A Textbook Case of Genocide Internet, 2024; Palestine as a Litmus Test for Transitional Justice et al., 2024; Stacey, 2024; Semerdjian, 2024; Samudzi, 2024; As a former IDF soldier and historian of genocide, 2024; Scholars, 2024; Rights AMC for H, 2024; Shaw, 2023; Moses, 2023; El-Affendi, n.d.; Shaw, n.d.; El-Affendi, 2024; Segal & Daniele, 2024; Burga, 2023; Siddiqui MM Usaid, 2024; Üngör, 2024; December 15 THOD &, 2023, THOD and, 2023, 2024; admin, 2023; Israeli Historian, 2024; ‘Yes, it is genocide’ in Gaza says Israeli professor of Holocaust studies Internet, 2024; Di-Capua, 2024; Gloom about the ‘day after’ the Gaza war pervasive among Mideast scholars

Internet, 2024; Middle East Scholar Barometer et al., 2024; South Africa accuses Israel of genocide: Everything we know about the case Internet, 2024; International laws against genocide exist: so why don't they work? CBC Radio Internet, 2024; On GPS, 2024; Stepansky US Joseph. Israel's war on Gaza updates, 2024; Former ICC chief prosecutor: Israel's siege of Gaza is a 'genocide' Internet, 2024; Graham-Harrison & Kierszenbaum, 2024; Komnenic, 2023). The International Court of Justice is currently reviewing a case regarding Israel's actions in the Strip plausibly constituting genocide and called for an immediate halt to the military offensive in Rafah back in May (Haque, 2024). Having ignored the verdict, Rafah now, alongside the rest of Gaza, lay in ruin (Rafah a ghost town as Israeli military claims victory in Gaza's southernmost city Internet, 2024).

Increased medical aid deliveries are crucial for remedying the infectious disease crisis in Gaza and for protecting the most vulnerable among the civilian population. Based on our first hand experience, we underscore the critical importance of comprehensive infection control measures, as is a well-established pillar of comprehensive health system response, particularly in conflict and resource-austere environments. We call upon the international community and medical leaders around the world to work towards an end to Israel's blockade, occupation, aerial bombardment, and decimation of Gaza's infrastructure, which are the root causes of the infection crisis. The international community must hold Israel accountable for its war crimes and implement comprehensive infection control measures that can only be effective if the siege is lifted and humanitarian aid is allowed unrestricted entry. By addressing these challenges with targeted recommendations, future medical missions can significantly enhance their effectiveness and improve health outcomes for patients in these regions (Hasan et al., 2021). Implementing these strategies will not only mitigate the spread of infectious diseases but also provide a sustainable framework for managing infections in conflict-affected areas. The lessons learned from our missions can serve as a blueprint for future medical teams, guiding their efforts to provide effective and compassionate care in the most challenging of environments. Only through collective international action can we hope to mitigate the devastating impact of these crimes and ensure a future where the people of Gaza can live with dignity and health.

AFFILIATIONS

¹Center for Bioethics, Harvard Medical School, Boston, Massachusetts, USA

²Brigham & Women's Hospital, Boston, Massachusetts, USA

³University of Michigan Medical School, Ann Arbor, Michigan, USA

⁴FAJR Scientific, Houston, Texas, USA

⁵Al-Shifa Hospital, Gaza City, Gaza Strip, Palestine

⁶Islamic University of Gaza, Gaza City, Gaza Strip, Palestine

⁷Penn Medicine Princeton Medical Center, Plainsboro, New Jersey, USA

⁸Palestine American Medical Association, Fairfax, Virginia, USA

⁹European Gaza Hospital, Gaza City, Gaza Strip, Palestine

¹⁰King Hussein Cancer Center, Amman, Jordan

¹¹Al-Aqsa Hospital, Deir-al-Balah, Gaza Strip, Palestine

¹²Canton Medical Clinic, Canton, Michigan, USA

¹³Mohammed Yousef El-Najar Hospital, Rafah, Gaza Strip, Palestine

¹⁴American University of Beirut, Beirut, Lebanon

¹⁵Sir Charles Gairdner Hospital Nedlands, Western Australia, Australia

¹⁶Greater Washington Orthopedic Group, Spring, Maryland, USA

¹⁷Bart's Health, London, UK



¹⁸Department of Vascular Surgery, Hull University Hospitals, Hull, UK

¹⁹The University of Texas Southwestern Medical Center, Dallas, Texas, USA

²⁰Michigan State University College of Human Medicine, Lansing, Michigan, USA

²¹Corewell Beaumont Health, Taylor, Michigan, USA

²²Department of Orthopaedic Surgery, Detroit Medical Center, Detroit, Michigan, USA

²³Baylor College of Medicine, Houston, Texas, USA

ETHICS STATEMENT

This article adhered to the relevant protocols amidst an acute crisis. We wish to thank the local healthcare staff in tandem with the Ministry of Health who have made the work of visiting medical missions possible.

ORCID

Bilal Irfan  <http://orcid.org/0009-0005-5822-7528>

Izzeddin Lulu  <http://orcid.org/0009-0006-0036-9053>

Adam Hamawy  <http://orcid.org/0009-0009-0580-4407>

Abd Al-Karim Sammour  <http://orcid.org/0000-0003-0254-3423>

Elias Nasser  <http://orcid.org/0009-0009-6383-6394>

Muaaz Wajahath  <http://orcid.org/0000-0003-2331-6000>

Abdullah Ghali  <http://orcid.org/0000-0002-0438-6532>

Mosab Nasser  <http://orcid.org/0009-0008-2589-414X>

Khaled J. Saleh  <http://orcid.org/0000-0003-1161-7076>

REFERENCES

- Abbas, S., & Mitchell, L. (2024). Australian medical leadership's silence on Gaza is a moral failure. *The Lancet*, 403, 1138–1139.
- Abdul, G. (2024). 'They're targeting healthcare workers': Airstrikes a constant fear for UK doctors in Gaza. *The Guardian [Internet]*. Available from: <https://www.theguardian.com/world/2024/apr/07/targeting-healthcare-workers-airstrikes-constant-fear-uk-doctors-gaza>
- Abed Alah, M. (2024). Echoes of conflict: the enduring mental health struggle of Gaza's healthcare workers. *Conflict and health*, 18, 21.
- Abi-Rached, J. M., & Reinhart, E. (2024). The Palestinian challenge to US medical ethics. *The Lancet*, 403, 2285.
- AbuQamar, M., Tabash, M. I., Aish, A., Hasheesh, A.-R. A., & Sharaf, F. (2023). Health impact of drinking water quality on the occurrence of osteoporosis in Gaza Strip, Palestine. *Ethiopian Journal of Health Sciences*, 33, 814–850.
- Abuzerr, S., Hadi, M., Zinszer, K., Nasser, S., Yunesian, M., Mahvi, A. H., Nabizadeh, R., & Mohammed, S. H. (2024). Quantitative microbial risk assessment for *Escherichia Coli* O157: H7 via drinking water in the Gaza Strip, Palestine. *SAGE Open Medicine*, 12, 20503121241258071.
- Abuzerr, S., & Zinszer, K. (2024). Amplifying the voices of women in the Gaza Strip. *The Lancet*, 403(10439), 1848–1849.
- Addressing the Effects of War on Gaza's Healthcare System | Cureus [Internet]. [cited 2024 Sep 17]. Available from: https://www.cureus.com/articles/209346-addressing-the-effects-of-war-on-gazas-healthcare-system?score_article=true#!/
- admin. Dershowitz and Finkelstein Rekindle Decades-Old Debate on Israel-Palestine Conflict [Internet]. GV Wire. 2023 [cited 2024 Sep 17]. Available from: <https://gvwire.com/2023/12/19/dershowitz-and-finkelstein-rekindle-decades-old-debate-on-israel-palestine-conflict/>
- admin. Environmental Impact of Gaza War 'Unprecedented' - United Nations [Internet]. Palest. Chron. 2024a [cited 2024 Aug 31]. Available from: <https://www.palestinechronicle.com/environmental-impact-of-gaza-war-unprecedented-united-nations/>
- admin. (2024b). Law for palestine releases database with 500+ instances of Israeli incitement to genocide – continuously updated [Internet]. *Law Palest.* [cited 2024 Sep 22]. Available from: <https://law4palestine.org/law-for-palestine-releases-database-with-500-instances-of-israeli-incitement-to-genocide-continuously-updated/>
- A Textbook Case of Genocide [Internet]. Jew. Curr. [cited 2024 Sep 17]. Available from: <https://jewishcurrents.org/a-textbook-case-of-genocide>

- A Threshold Crossed: Israeli Authorities and the Crimes of Apartheid and Persecution | HRW [Internet]. [cited 2024 Sep 21]. Available from: <https://www.hrw.org/report/2021/04/27/threshold-crossed/israeli-authorities-and-crimes-apartheid-and-persecution>
- Administrator. Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted [Internet]. World Health Organ. - Reg. Off. East. Mediterr. [cited 2024a Jun 23]. Available from: <http://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html>
- Administrator. WHO appeals for protection of the health system from further attacks and degradation of its capacity [Internet]. World Health Organ. - Reg. Off. East. Mediterr. [cited 2024b Jul 21]. Available from: <http://www.emro.who.int/media/news/who-appeals-for-protection-of-the-health-system-from-further-attacks-and-degradation-of-its-capacity.html>
- Ahmed, K., Gayle, D., & Mousa, A. 'Ecocide in Gaza': does scale of environmental destruction amount to a war crime? The Guardian [Internet]. 2024 Mar 29 [cited 2024 Aug 31]; Available from: <https://www.theguardian.com/environment/2024/mar/29/gaza-israel-palestinian-war-ecocide-environmental-destruction-pollution-rome-statute-war-crimes-aoe>
- Albhaisi, S. (2024). The impossible mission: To save and support science in Gaza. *The Lancet*, 403, 806.
- Al-Jadba, G., Zeidan, W., Spiegel, P. B., Shaer, T., Najjar, S., & Seita, A. (2024). UNRWA at the frontlines: Managing health care in Gaza during catastrophe. *The Lancet*, 403, 723–726.
- Alkhalidi, M., Coghlan, R., Miller, S., Basuoni, A. A., Tanous, O., & Asi, Y. M. (2022). State accountability for the good health of Palestinians has failed. *Health and Human Rights*, 24, 77–84.
- Alser, K., Mallah, S. I., El-Oun, Y. R. A., Ghayada, M., Sammour, A. A.-K., Gilbert, M., Fitzgerald, S., Shaikh, Z., & Alser, O. (2024). Trauma care supported through a global telemedicine initiative during the 2023–24 military assault on the Gaza Strip, occupied Palestinian territory: A case series. *The Lancet*, 404, 874–886.
- Alser, O., & Alser, M. (2023). Urgent call for protecting health-care workers in Palestine. *The Lancet*, 402, 1746–1747.
- APPLICATION INSTITUTING PROCEEDINGS [Internet]. [cited 2024 Sep 22]. Available from: <https://www.courthousenews.com/wp-content/uploads/2023/12/South-Africa-v-Israel.pdf>
- aqu2020. (2024a). *Gastrointestinal diseases in the context of the war in Gaza* [Internet]. Al-Quds Univ. [cited 2024 Jul 6]. Available from: <https://www.alquds.edu/en/news/staff-news/43421/gastrointestinal-diseases-in-the-context-of-the-war-in-gaza/>
- aqu2020. Epidemiology of skin diseases in the context of the war in Gaza (2) Written by Prof. Dr. Ahmad Amro [Internet]. Al-Quds Univ. 2024 [cited 2024b Jul 6]. Available from: <https://www.alquds.edu/en/news/staff-news/43380/epidemiology-of-skin-diseases-in-the-context-of-the-war-in-gaza-2-written-by-prof-dr-ahmad-amro/>
- Arraf, J. Medical groups challenge Israel's ban on evacuations from Gaza. Is Israel relenting? NPR [Internet]. 2024 Jun 28 [cited 2024 Jul 22]; Available from: <https://www.npr.org/sections/goats-and-soda/2024/06/26/nx-s1-5020522/gaza-israel-medical-evacuations-war>
- As a former IDF soldier and historian of genocide, I was deeply disturbed by my recent visit to Israel. The Guardian [Internet]. 2024 Aug 13 [cited 2024 Sep 17]; Available from: <https://www.theguardian.com/world/article/2024/aug/13/israel-gaza-historian-omer-bartov>
- As Civilian Casualties Reach Record Levels in Gaza, Third Committee Underscores Need to End War, Lift Blockade of Essential Needs, Hold Parties Accountable | Meetings Coverage and Press Releases [Internet]. [cited 2024 Sep 1]. Available from: <https://press.un.org/en/2023/gashc4390.doc.htm>
- Ashour, Y., Jlambo, A., & Abuzerr, S. (2024). Patients in Gaza with chronic conditions need urgent interventions. *The Lancet*, 403, 1847–1848.
- Assi, S. Israeli Soldiers Flaunt War Crimes on Social Media. Why Aren't They Held Accountable? [Internet]. Truthout. 2024 [cited 2024 Sep 22]. Available from: <https://truthout.org/articles/israeli-soldiers-flaunt-war-crimes-online-why-arent-they-held-accountable/>
- Banerjee, A. (2024). The conflict in Gaza—Are data ever enough? *The Lancet*, 403, 27.
- Barely a drop of safe water to drink in Gaza, UN aid agency warns | UN News [Internet]. 2023 [cited 2024 Jun 23]. Available from: <https://news.un.org/en/story/2023/12/1144972>
- Beiraghdar, F., Momeni, J., Hosseini, E., Panahi, Y., & Negah, S. S. (2023). Health crisis in Gaza: The urgent need for international action. *Iranian Journal of Public Health*, 52, 2478–2483.
- Bird, S. M. (2024). Threat level in the Gaza Strip: Fatalities per 1000 person-years. *The Lancet*, 403, 1139–1140.
- Bjertness, E., Bjertness, M. S., Nyquist, C. B., Kromberg, M., Eleksi, K., & Lien, L. (2023). Save the remaining people of Gaza—Save the children. *The Lancet*, 402, 2072–2073.
- Van Boetelaer, E., Franco, O. H., Moussally, K., Khammash, U., & Escobio, F. (2023). The disproportionate vulnerability of older people in humanitarian emergencies. *The Lancet*, 402, 1621.
- Boston 677 Huntington Avenue, Ma 02115. Press Release: New Study of Satellite Data Shows: Israel's assault on hospitals, schools, and water infrastructure in the Gaza Strip was not "random" [Internet]. FXB Cent. Health Hum. Rights Harv. Univ. 2024 [cited 2024 Sep 17]. Available from: <https://fxb.harvard.edu/2024/04/09/press->



release-new-study-of-satellite-data-shows-israels-assault-on-hospitals-schools-and-water-infrastructure-in-the-gaza-strip-was-not-random/

- Burga, S. Is what's happening in Gaza a Genocide? Experts Weigh In [Internet]. TIME. 2023 [cited 2024 Sep 17]. Available from: <https://time.com/6334409/is-whats-happening-gaza-genocide-experts/>
- Buss, P., Alcázar, S., & Souza, L. E. (2023). End the violence and help the victims in Gaza. *The Lancet*, 402, 1622–1623.
- Chinemere Nwobodo, D., Ugwu, M. C., Oliseloke Anie, C., Al-Ouqailli, M. T. S., Chinedu Ikem, J., Victor Chigozie, U., & Saki, M. (2022). Antibiotic resistance: The challenges and some emerging strategies for tackling a global menace. *Journal of Clinical Laboratory Analysis*, 36, e24655.
- Chokshi, A., Sifri, Z., Cennimo, D., & Horng, H. (2019). Global contributors to antibiotic resistance. *Journal of Global Infectious Diseases*, 11, 36–42.
- Coghlan, R., Smith, J., & Alser, O. (2024). Morphine for Gaza? Limits of care during genocidal violence. *The Lancet*, 403, 350–351.
- Correia, T. (2024). Two urgent actions related to international health emergencies amid the escalating conflict in Gaza. *The International Journal of Health Planning and Management*, 39, 160–163.
- Crowder, C. (2024). *Destroying the Lawn in Gaza* [Internet]. Inst. Policy Stud. [cited 2024 Sep 22]. Available from: <https://staging.ips-dc.org/destroying-the-lawn-in-gaza/>
- Damage to Gaza causing new risks to human health and long-term recovery - new UNEP assessment [Internet]. UN Environ. 2024 [cited 2024 Jun 23]. Available from: <http://www.unep.org/news-and-stories/press-release/damage-gaza-causing-new-risks-human-health-and-long-term-recovery>
- Dangerous skin diseases spreading among children in Gaza [Internet]. Hindustan Times. 2024 [cited 2024 Jul 6]. Available from: <https://www.hindustantimes.com/lifestyle/health/dangerous-skin-diseases-spreading-among-children-in-gaza-101719993375398.html>
- December 15 THOD, 2023. Norman Finkelstein vs. Alan Dershowitz: When Netanyahu Calls Palestinians “Amalek,” He Is Calling For Genocide [Internet]. [cited 2024 Sep 17]. Available from: https://www.realclearpolitics.com/video/2023/12/15/normal_finkelstein_vs_alan_dershowitz_when_netanyahu_calls_palestinians_amalek_he_is_calling_for_genocide.html
- Dehghan, R., Smith, J., Shahid, H. J., Hadley, D., & Hopkinshaw, B. (2024). Medical duty and advocacy for Palestine. *The Lancet*, 403(10424), 349.
- Delaš Aždajić, M., Bešlić, I., Gašić, A., Ferara, N., Pedić, L., & Lugović-Mihić, L. (2022). Increased scabies incidence at the beginning of the 21st century: What do reports from Europe and the world show? *Life*, 12, 1598.
- Di-Capua, Y. (2024). Genocidal mirroring in Israel/Palestine. *Journal of Genocide Research*, 1–15.
- Diseases, T. Cutaneous leishmaniasis in occupied Palestinian territory [Internet]. World Health Organ. - Reg. Off. East. Mediterr. [cited 2024 Jul 6]. Available from: <http://www.emro.who.int/neglected-tropical-diseases/countries/cl-palestinian.html>
- Dpr 3. Public Health Situation Analysis on Hostilities in the occupied Palestinian territory (oPt) - 02 May 2024 - WHO Report [Internet]. Quest. Palest. [cited 2024 Jul 6]. Available from: <https://www.un.org/unispal/document/public-health-situation-analysis-on-hostilities-in-the-occupied-palestinian-territory-opt-02-may-2024-who-report/>
- Ecocide in Gaza: Israel's genocide in Gaza will create an unprecedented environmental health crisis | UC Global Health Institute [Internet]. [cited 2024 Aug 31]. Available from: <https://ucghi.universityofcalifornia.edu/news/ecocide-gaza-israels-genocide-gaza-will-create-unprecedented-environmental-health-crisis>
- Efron, S., Fischbach, J. R., Blum, I., Karimov, R. I., & Moore, M. (2019). The public health impacts of gaza's water crisis: Analysis and policy options. *Rand Health Quarterly*, 8(3), 10.
- El-Affendi, A. (2024). The futility of genocide studies after Gaza. *Journal of Genocide Research*, 1–7.
- El-Affendi, A. (n.d.). Gaza and the dilemmas of genocide scholars [Internet]. Al Jazeera. [cited 2024 Sep 17]. Available from: <https://www.aljazeera.com/opinions/2024/2/3/gaza-and-the-dilemmas-of-genocide-scholars>
- Elessi, K. (2023). Save Gaza residents from imminent catastrophe. *The Lancet*, 402, 1522–1523.
- Elliott, L., editor LEE. UN report: 80% of Gaza inhabitants relied on international aid before war. The Guardian [Internet]. 2023 Oct 25 [cited 2024 Sep 22]; Available from: <https://www.theguardian.com/world/2023/oct/25/un-report-80-per-cent-of-gaza-inhabitants-relied-on-international-aid-before-war>
- Elnakib, S., Fair, M., Mayrhofer, E., Afifi, M., & Jamaluddine, Z. (2024). Pregnant women in Gaza require urgent protection. *The Lancet*, 403, 244.
- Faddoul, A., Shannon, G., Asghar, K., Boukari, Y., Smith, J., & Neilson, A. (2024). The health dimensions of violence in Palestine: A call to prevent genocide. *The Lancet*, 403, 25–26.
- Former ICC chief prosecutor: Israel's siege of Gaza is a 'genocide' [Internet]. Al Jazeera. [cited 2024 Sep 17]. Available from: <https://www.aljazeera.com/program/upfront/2023/12/1/former-icc-chief-prosecutor-israels-siege-of-gaza-is-a-genocide>
- Garcia, R. T. Don't ignore Israel's 'ecocide' [Internet]. Prism. 2024 [cited 2024 Aug 31]. Available from: <http://prismreports.org/2024/06/05/dont-ignore-israel-ecocide/>
- Gaza: UN rights chief slams 'unconscionable death and suffering' | UN News [Internet]. 2024a [cited 2024 Jun 23]. Available from: <https://news.un.org/en/story/2024/06/151136>

- Gaza: Israelis Attacking Known Aid Worker Locations | Human Rights Watch [Internet]. 2024b [cited 2024 Jul 23]. Available from: <https://www.hrw.org/news/2024/05/14/gaza-israelis-attacking-known-aid-worker-locations>
- Gaza before 7 October | MSF [Internet]. [cited 2024 Sep 22]. Available from: <https://www.msf.org/gaza-7-october>
- Gaza faces imminent typhoid, cholera outbreak, health bodies warn – POLITICO [Internet]. [cited 2024 Jul 6]. Available from: <https://www.politico.eu/article/health-chiefs-warn-of-imminent-typhoid-cholera-outbreaks-in-gaza/>
- Gaza Genocide's Environmental Damage Assessed - HLRN [Internet]. [cited 2024 Aug 31]. Available from: <https://www.hlrn.org/activitydetails.php?id=qGikZQ>
- Gazans face threat of cholera and other infectious diseases, says Oxfam [Internet]. Oxfam Int. 2023 [cited 2024 Jul 6]. Available from: <https://www.oxfam.org/en/press-releases/gazans-face-threat-cholera-and-other-infectious-diseases-says-oxfam>
- Gaza's Health Ministry reports meningitis, hepatitis outbreak among displaced Palestinians [Internet]. [cited 2024 Jul 24]. Available from: <https://www.aa.com.tr/en/middle-east/gaza-s-health-ministry-reports-meningitis-hepatitis-outbreak-among-displaced-palestinians/3201507>
- Gaza's Water Crisis Puts Thousands at Risk of Preventable Death - occupied Palestinian territory | ReliefWeb [Internet]. 2023 [cited 2024 Sep 2]. Available from: <https://reliefweb.int/report/occupied-palestinian-territory/gazas-water-crisis-puts-thousands-risk-preventable-death>
- Genocide in Gaza [Internet]. Univ. Netw. Hum. Rights. [cited 2024 Sep 1]. Available from: <https://www.humanrightsnetwork.org/genocide-in-gaza>
- Ghanem, N. Database exposes 500 instances of Israeli incitement to genocide in Gaza [Internet]. Database Expo. 500 Instances Isr. Incitement Genocide Gaza. [cited 2024 Sep 22]. Available from: <https://www.trtworld.com/middle-east/database-exposes-500-instances-of-israeli-incitement-to-genocide-in-gaza-16537146>
- Gloom about the 'day after' the Gaza war pervasive among Mideast scholars [Internet]. Brookings. [cited 2024 Sep 17]. Available from: <https://www.brookings.edu/articles/gloom-about-the-day-after-the-gaza-war-pervasive-among-mideast-scholars/>
- Graham-Harrison, E., & Kierszenbaum, Q. (2024). Israeli public figures accuse judiciary of ignoring incitement to genocide in Gaza. *The Guardian* [Internet]. Jan 3 [cited 2024 Sep 17]; Available from: <https://www.theguardian.com/world/2024/jan/03/israeli-public-figures-accuse-judiciary-of-ignoring-incitement-to-genocide-in-gaza>
- Haar, R., Abbata, A., Rubenstein, L., Spiegel, P., & Alnahhas, H. (2023). Attacks on health are war crimes and a public health catastrophe. *The Lancet*, 402, 1971.
- Half of Israeli Jews say Israel should not obey international law in Gaza [Internet]. Middle East Eye. [cited 2024 Sep 22]. Available from: <https://www.middleeasteye.net/news/half-israeli-jews-say-israel-should-not-obey-international-law-gaza>
- Hall, N., Kirschenbaum, A., & Michel, D. The Siege of Gaza's Water. 2024 [cited 2024 Jun 23]; Available from: <https://www.csis.org/analysis/siege-gazas-water>
- Haque, A. A. (2024). Halt: The international court of justice and the rafah offensive [Internet]. *Just Secur.* [cited 2024 Sep 17]. Available from: <https://www.justsecurity.org/96123/icj-gaza-israeli-operations/>
- Hasan, A. I., Wajahath, M., Nasser, E., Nasser, M., & Saleh, K. J. (2024). Transforming global orthopaedic missions through adversity, lessons learned, and sustainable planning using quality assurance principles: The FAJR methodology. *Journal of Bone and Joint Surgery*, 106, 1338–1349. <https://doi.org/10.2106/JBJS.23.01272>
- Hass, A. 2,279 calories per person: How Israel made sure Gaza didn't starve. *Haaretz* [Internet]. 2012 Oct 17 [cited 2024 Sep 22]; Available from: <https://www.haaretz.com/2012-10-17/ty-article/premium/israels-gaza-quota-2-279-calories-a-day/0000017f-e0f2-d7b2-a77f-e3f75550000>
- Hays, J. P., Ruiz-Alvarez, M. J., Roson-Calero, N., Amin, R., Murugaiyan, J., van Dongen, M. B. M., et al. (2022). Perspectives on the ethics of antibiotic overuse and on the implementation of (New) antibiotics. *Infectious Diseases and Therapy*, 11, 1315–1326.
- van der Heijden, M. R. (2023). Attacks on hospitals: Current legal protections are insufficient. *The Lancet*, 402, 2293–2294.
- Highly infectious poliovirus found in Gaza sewage samples | Gaza | The Guardian [Internet]. [cited 2024 Jul 21]. Available from: <https://www.theguardian.com/world/article/2024/jul/19/israel-gaza-war-polio-sewage-samples>
- Homer, C. S. E., Abajobir, A., Agarwal, K., Agustina, R., Ahmed, A. T. N., AlBuhairan, F., Ariff, S., Arora, N., Aryeetey, R., Ashorn, P., Azzopardi, P., Bazirete, O., Berkley, J. A., Darmstadt, G. L., Dewey, K. G., Duke, T., El Kak, F., Homer, C., Jehan, F., ... Zlotkin, S. (2024). End humanitarian catastrophe in conflict settings. *The Lancet*, 403, 24–25.
- Hussein, S., Ahmed, S. K., Qurbani, K., Fareeq, A., & Essa, R. A. (2024). Infectious diseases threat amidst the war in Gaza. *Journal of Medicine, Surgery, and Public Health*, 2, 100067.
- Huynh, B. Q., Chin, E. T., & Spiegel, P. B. (2024). No evidence of inflated mortality reporting from the Gaza ministry of health. *The Lancet*, 403, 23–24.
- Ibrahim, K., Tahsin, M., Rahman, A., Rahman, S. M., & Rahman, M. M. (2024). Surveillance of bacterial load and multidrug-resistant bacteria on surfaces of public restrooms. *International Journal of Environmental Research and Public Health*, 21, 574.



- Increasing disease and humanitarian strain in Gaza amid aid shortages | UN News [Internet]. 2024 [cited 2024 Jun 23]. Available from: <https://news.un.org/en/story/2024/05/1150181>
- International laws against genocide exist: so why don't they work? CBC Radio [Internet]. 2024 Jun 28 [cited 2024 Sep 17]; Available from: <https://www.cbc.ca/radio/ideas/genocide-convention-william-schabas-1.7249721>
- Iraqi, A. Israeli society's dehumanization of Palestinians is now absolute [Internet]. 972 Mag. 2024 [cited 2024 Sep 22]. Available from: <https://www.972mag.com/dehumanization-moral-abyss-israelis/>
- Irfan, B., Abu Shammala, A., & Saleh, K. (2024). Will there be a future for newborns in Gaza? *Lancet*, 404(10464), 1725–1726. [https://doi.org/10.1016/S0140-6736\(24\)02249-9](https://doi.org/10.1016/S0140-6736(24)02249-9)
- Irfan, B., Sultan, M. J., Khawaja, H., Wajahath, M., Nasser, E., Hasan, A. I. (2024b). Infection control in conflict zones: Practical insights from recent medical missions to Gaza. *J Hosp Infect* [Internet], [cited 2024 Jul 9];0. Available from: <https://www.journalofhospitalinfection.com/article/S0195-6701>
- Irfan, B., Yasin, I., & Kirschner, D. (2024a). Extensive drug-resistant typhoid fever prevention and management in Pakistan: A challenge to public health. *University of Michigan Undergraduate Research Journal* [Internet], 17. [cited 2024 Jul 23];17. Available from: <https://journals.publishing.umich.edu/umurj/article/id/5505/>
- Is Israel Committing Genocide in Gaza? New Report from BU School of Law's International Human Rights Clinic Lays Out Case [Internet]. Boston Univ. 2024 [cited 2024 Sep 1]. Available from: <https://www.bu.edu/articles/2024/is-israel-committing-genocide-in-gaza/>
- Israel: Unlawful Gaza Blockade Deadly for Children | Human Rights Watch [Internet]. 2023a [cited 2024 Sep 1]. Available from: <https://www.hrw.org/news/2023/10/18/israel-unlawful-gaza-blockade-deadly-children>
- Israel: Starvation Used as Weapon of War in Gaza | Human Rights Watch [Internet]. 2023b [cited 2024 Sep 1]. Available from: <https://www.hrw.org/news/2023/12/18/israel-starvation-used-weapon-war-gaza>
- Israel: Palestinian Healthcare Workers Tortured | Human Rights Watch [Internet]. 2024 [cited 2024 Aug 31]. Available from: <https://www.hrw.org/news/2024/08/26/israel-palestinian-healthcare-workers-tortured>
- Israel attacks on Gaza leave massive carbon footprint: Study [Internet]. Middle East Monit. 2024 [cited 2024 Aug 31]. Available from: <https://www.middleeastmonitor.com/20240710-israel-attacks-on-gaza-leave-massive-carbon-footprint-study/>
- Israel Counted Calories Needed for Gazans in Blockade - The New York Times [Internet]. [cited 2024 Sep 22]. Available from: <https://www.nytimes.com/2012/10/18/world/middleeast/israel-counted-calories-needed-for-gazans-in-blockade.html>
- Israel defying ICJ ruling to prevent genocide by failing to allow aid into Gaza [Internet]. Amnesty Int. 2024 [cited 2024 Sep 1]. Available from: <https://www.amnesty.org/en/latest/news/2024/02/israel-defying-icj-ruling-to-prevent-genocide-by-failing-to-allow-adequate-humanitarian-aid-to-reach-gaza/>
- Israel Gaza blockade study calculated Palestinians' calories. Reuters [Internet]. 2012 Oct 17 [cited 2024 Sep 22]; Available from: <https://www.reuters.com/article/world/israel-gaza-blockade-study-calculated-palestinians-calories-idUSBRE89G0NM/>
- Israel Hamas War. Dangerous Skin Diseases Spreading Among Malnourished Children In Gaza [Internet]. [cited 2024 Jul 24]. Available from: <https://www.ndtv.com/world-news/israel-hamas-war-dangerous-skin-diseases-spreading-among-malnourished-children-in-gaza-6022471>
- Israel has denied access to many planned aid missions to northern Gaza Strip: UN [Internet]. [cited 2024 Jul 23]. Available from: <https://www.aa.com.tr/en/world/israel-has-denied-access-to-many-planned-aid-missions-to-northern-gaza-strip-un/3143376>
- Israel must lift illegal and inhumane blockade on Gaza [Internet]. Amnesty Int. 2023 [cited 2024 Sep 2]. Available from: <https://www.amnesty.org/en/latest/news/2023/10/israel-opt-israel-must-lift-illegal-and-inhumane-blockade-on-gaza-as-power-plant-runs-out-of-fuel/>
- Israel/OPT: Palestinians face drastic escalation in unlawful killings, displacement as Israel launches West Bank military operation [Internet]. Amnesty Int. 2024 [cited 2024 Sep 22]. Available from: <https://www.amnesty.org/en/latest/news/2024/08/israel-opt-palestinians-face-drastic-escalation-in-unlawful-killings-displacement-as-israel-launches-west-bank-military-operation/>
- Israeli Army Commanders Gave Order to Blow Up Rafah Reservoir. IDF Suspects Breach of Int'l Law - Israel News - Haaretz.com [Internet]. [cited 2024 Jul 29]. Available from: <https://www.haaretz.com/israel-news/2024-07-29/ty-article/.premium/idf-commanders-gave-order-to-blow-up-rafah-reservoir-army-suspects-breach-of-intl-law/00000190-fd90-d5ef-a5fe-ff9ec3ea0000>
- Israeli attacks wipe out entire families in Gaza [Internet]. Amnesty Int. 2023 [cited 2024 Sep 2]. Available from: <https://www.amnesty.org/en/latest/news/2023/10/damning-evidence-of-war-crimes-as-israeli-attacks-wipe-out-entire-families-in-gaza/>
- Israeli Authorities' Cutting of Water Leading to Public Health Crisis in Gaza | Human Rights Watch [Internet]. [cited 2024 Jul 6]. Available from: <https://www.hrw.org/news/2023/11/16/israeli-authorities-cutting-water-leading-public-health-crisis-gaza>
- Israeli Forces' Conduct in Gaza | Human Rights Watch [Internet]. 2024 [cited 2024 Sep 21]. Available from: <https://www.hrw.org/news/2024/03/19/israeli-forces-conduct-gaza>

- Israeli forces “destroy” Rafah crossing's departure hall [Internet]. Middle East Eye. [cited 2024 Sep 2]. Available from: <https://www.middleeasteye.net/news/israeli-forces-set-fire-rafah-crossings-departure-hall>
- Israeli Historian: This Is Exactly What Genocide Looks Like [Internet]. [cited 2024 Sep 17]. Available from: <https://jacobin.com/2024/07/amos-goldberg-genocide-gaza-israel>
- Israeli military is destroying hospitals and targeting medical staff in Gaza, doctors and nurses there say [Internet]. NBC News. 2024 [cited 2024 Sep 2]. Available from: <https://www.nbcnews.com/news/world/israel-hamas-war-investigation-doctors-hospitals-targeted-gaza-rcna162684>
- Israel's apartheid against Palestinians [Internet]. Amnesty Int. 2022 [cited 2024 Sep 21]. Available from: <https://www.amnesty.org/en/latest/campaigns/2022/02/israels-system-of-apartheid/>
- Israel's progression from Apartheid to Genocide [Internet]. Mondoweiss. 2024 [cited 2024 Sep 21]. Available from: <https://mondoweiss.net/2024/06/israels-progression-from-apartheid-to-genocide/>
- Israel's Unfolding Crime of Genocide of the Palestinian People & U.S. Failure to Prevent and Complicity in Genocide [Internet]. Cent. Const. Rights. [cited 2024 Sep 21]. Available from: <https://ccrjustice.org/node/10061>
- Jamaluddine, Z., Checchi, F., & Campbell, O. M. R. (2023). Excess mortality in Gaza: Oct 7–26, 2023. *The Lancet*, 402, 2189–2190.
- Jawad, M., Hone, T., Vamos, E. P., Roderick, P., Sullivan, R., & Millett, C. (2020). Estimating indirect mortality impacts of armed conflict in civilian populations: Panel regression analyses of 193 countries, 1990–2017. *BMC Medicine*, 18, 266.
- Jewish Israelis believe IDF is using appropriate force in Gaza, Arab Israelis broadly do not - poll [Internet]. Jerus. Post JPostcom. 2024 [cited 2024 Sep 22]. Available from: <https://www.jpost.com/israel-news/article-783849>
- Joint Communication to the Office of the Prosecutor of the International Criminal Court Regarding the Perpetration of the Crime of Genocide by Members of the Israeli War Cabinet [Internet]. [cited 2024 Sep 22]. Available from: <https://law4palestine.org/wp-content/uploads/2024/04/Joint-Communication-to-the-Office-of-the-Prosecutor-of-the-International-Criminal-Court-Regarding-the-Perpetration-of-the-Crime-of-Genocide-by-Members-of-the-Israeli-War-Cabinet-Law-for-Palestine.pdf>
- Kadir, A., & Kampalath, V. (2023). Children pay the price for our silence, again. *The Lancet*, 402, 1745–1746.
- Khan, M. S., & Tinua, A. T. (2024). Israel–Palestine: Dehumanisation and silencing. *The Lancet*, 403, 805–806.
- Khwaja, A., Bell, I., Hadley, D., Price, H., & Turnbull, C. (2023). Gaza: A plea to reclaim our collective humanity. *The Lancet*, 402, 1975.
- Kim, J. As polio vaccinations begin in Gaza, U.N. says success hinges on a pause in fighting. NPR [Internet]. 2024 Aug 31 [cited 2024 Sep 2]; Available from: <https://www.npr.org/2024/08/31/nx-s1-5096742/gaza-polio-vaccination-israel-pause>
- Komnienic, A. (2023). Experts, advocates deeply divided on question of “genocide” in Gaza. *CBC News* [Internet]. Dec 2 [cited 2024 Sep 17]; Available from: <https://www.cbc.ca/news/world/genocide-gaza-debate-1.7042809>
- Kosugi, K., Zenke, Y., Sato, N., Hamada, D., Ando, K., Okada, Y., Yamanaka, Y., & Sakai, A. (2022). Potential of continuous local antibiotic perfusion therapy for fracture-related infections. *Infectious Diseases and Therapy*, 11, 1741–1755.
- Kotloff, K. L. (2017). Shigella infection in children and adults: A formidable foe. *The Lancet Global Health*, 5, e1166–e1167.
- Lien, G., & Heymann, D. L. (2013). The problems with polio: Toward eradication. *Infectious Diseases and Therapy*, 2, 167–174.
- Llor, C., & Bjerrum, L. (2014). Antimicrobial resistance: Risk associated with antibiotic overuse and initiatives to reduce the problem. *Therapeutic Advances in Drug Safety*, 5, 229–241.
- Lyons, E. Gaza doctor describes conditions inside his overwhelmed hospital as Israeli forces advance [Internet]. 2024 [cited 2024 Aug 31]. Available from: <https://www.cbsnews.com/news/israel-hamas-war-gaza-european-hospital-palestinians/>
- Mahmoud, H., & Abuzerr, S. (2023). State of the health-care system in Gaza during the Israel–Hamas war. *The Lancet*, 402, 2294.
- Majority of Israelis want censorship of social media posts sympathetic to Palestinians in Gaza [Internet]. Middle East Eye. [cited 2024 Sep 22]. Available from: <https://www.middleeasteye.net/news/majority-israelis-want-censorship-social-media-posts-sympathetic-gazas-civilians>
- Maraqa, B., Nazzal, Z., Hamshari, S., Matani, N., Assi, Y., Aabed, M., & Alameri, F. (2023). Palestinian physicians' self-reported practice regarding antibiotic use for upper respiratory tract infections in primary healthcare. *Frontiers in Medicine*, 10, 1139871.
- Masih, N., & Brown, C. (2024). Israel bars six medical NGOs from entry to Gaza, WHO says. *The Washington Post*. <https://www.washingtonpost.com/world/2024/10/18/israel-gaza-war-aid-hospitals-doctors/>
- Masoud, B., & Salem, S. (2023). Gaza faces “perfect storm” of deadly diseases. *Reuters* [Internet]. [cited 2024 Jul 6]; Available from: <https://www.reuters.com/world/middle-east/gaza-faces-perfect-storm-deadly-diseases-2023-12-14/>
- Media, A. I. (2024). The language of genocide: Israel's extermination rhetoric [Internet]. *Int. Solidar. Mov.* [cited 2024 Sep 22]. Available from: <https://palsolidarity.org/2024/01/the-language-of-genocide-israels-extermination-rhetoric/>



- M.I. Detailed findings on the military operations and attacks carried out in the Occupied Palestinian Territory from 7 October to 31 December 2023 - Report by the Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel (A/HRC/56/CRP.4) [Internet]. Quest. Palest. [cited 2024a Jul 22]. Available from: <https://www.un.org/unispal/document/coi-report-detailed-findings-on-military-operations-in-opt-10jun24/>
- M.I. Action by UN System and Intergovernmental Organizations Relevant to the Question of Palestine (April 2024 Monthly Bulletin) [Internet]. Quest. Palest. [cited 2024b Sep 2]. Available from: <https://www.un.org/unispal/document/monthly-bulletin-30apr24/>
- M.I. Anatomy of a Genocide - Report of the Special Rapporteur on the situation of human rights in the Palestinian territory occupied since 1967 to Human Rights Council - Advance unedited version (A/HRC/55/73) [Internet]. Quest. Palest. [cited 2024c Sep 13]. Available from: <https://www.un.org/unispal/document/anatomy-of-a-genocide-report-of-the-special-rapporteur-on-the-situation-of-human-rights-in-the-palestinian-territory-occupied-since-1967-to-human-rights-council-advance-unedited-version-a-hrc-55/>
- Middle East Scholar Barometer | University of Maryland | Critical Issues Poll [Internet]. [cited 2024 Sep 17]. Available from: <https://criticalissues.umd.edu/middle-east-scholar-barometer>
- Monitor, N. G. O. Compilation of NGO Statements on October 7 Massacre and Aftermath - ngomonitor [Internet]. 2023 [cited 2024 Sep 21]. Available from: <https://www.ngo-monitor.org/reports/compilation-of-ngo-statements-on-october-7-massacre-and-aftermath/>
- Moscatelli, A., Spiga, G., Rosati, U., Fanton, C., & Ligarotti, G. K. (2024). Medical evacuation challenges of children from Gaza. *The Lancet*, 403, 1540.
- Moses, A. D. More than Genocide. Boston Rev [Internet]. 2023 Nov 14 [cited 2024 Sep 17]; Available from: <https://www.bostonreview.net/articles/more-than-genocide/>
- Moussally, K., Abu-Sittah, G., Gomez, F. G., Fayad, A. A., & Farra, A. (2023). Antimicrobial resistance in the ongoing Gaza war: A silent threat. *The Lancet*, 402, 1972–1973.
- MSF health facilities across Gaza face critical shortage of medical supplies | MSF [Internet]. [cited 2024 Jul 23]. Available from: <https://www.msf.org/msf-health-facilities-across-gaza-face-critical-shortage-medical-supplies>
- Musa, A., Crawley, J., Haj-Hassan, T., Inglis, R., & Maynard, N. (2023). Gaza, 9 years on: A humanitarian catastrophe. *The Lancet*, 402, 2292–2293.
- Muteeb, G., Rehman, M. T., Shahwan, M., & Aatif, M. (2023). Origin of antibiotics and antibiotic resistance, and their impacts on drug development: A narrative review. *Pharmaceuticals*, 16, 1615.
- Nair, P. A., Vora, R. V., Jivani, N. B., & Gandhi, S. S. (2016). A study of clinical profile and quality of life in patients with scabies at a rural tertiary care centre. *J Journal of Clinical and Diagnostic Research*, 10, WC01–WC05.
- Nasser, E., Alshaer, N., Wajahath, M., Irfan, B., Tahir, M., Nasser, M., & Saleh, K. J. (2024). Management of fracture-related infection in conflict zones: Lessons learned from medical missions to Gaza. *Antibiotics*, 13(11), 1020. <https://doi.org/10.3390/antibiotics13111020>
- News ABC. IDF's conduct, ethics under scrutiny following soldiers' social media posts [Internet]. ABC News. [cited 2024 Sep 22]. Available from: <https://abcnews.go.com/International/ids-conduct-ethics-scrutiny-soldiers-social-media-posts/story?id=109035616>
- Number of 'zero-dose' children increased by more than one third last year in the Middle East and North Africa [Internet]. [cited 2024 Jul 24]. Available from: <https://www.unicef.org/mena/press-releases/number-zero-dose-children-increased-more-one-third-last-year-middle-east-and-north>
- Ogunshe, A., & Adinmonyema, P. (2014). Evaluation of bacteriostatic potency of expired oral paediatric antibiotics and implications on infant health. *Pan African Medical Journal*, 19, 378.
- On GPS: The charges against Israel | CNN [Internet]. 2024 [cited 2024 Sep 17]. Available from: <https://www.cnn.com/videos/world/2024/05/26/gps-0526-icc-charges-against-israel.cnn>
- Oxfam International. (2024). *Inflicting Unprecedented Suffering and Destruction: Seven ways the government of Israel is deliberately blocking and/or undermining the international humanitarian response in the Gaza Strip* [Internet]. Oxfam International. Mar Available from: <http://hdl.handle.net/10546/621591>
- Palestine as a Litmus Test for Transitional Justice | International Journal of Transitional Justice | Oxford Academic [Internet]. [cited 2024 Sep 17]. Available from: <https://academic.oup.com/ijtj/article/18/1/162/7681852>
- Palestinian Healthcare Workers Chained, Starved, Sexually Abused: New Report [Internet]. Democr. Now. [cited 2024 Sep 2]. Available from: https://www.democracynow.org/2024/8/27/hrw_report
- Palestinian medics taken from Gaza, tortured while detained: Report [Internet]. Al Jazeera. [cited 2024 Sep 2]. Available from: <https://www.aljazeera.com/news/2024/8/26/palestinian-medics-deported-from-gaza-tortured-while-detained-report>
- People in northern Gaza forced to survive on 245 calories a day, less than a can of beans – Oxfam | Oxfam International [Internet]. [cited 2024 Sep 22]. Available from: <https://www.oxfam.org/en/press-releases/people-northern-gaza-forced-survive-245-calories-day-less-can-beans-oxfam>

- Pernot, P. Ecocide in Gaza: The environmental impact of Israel's war [Internet]. <https://www.newarab.com/>. The New Arab; 2024 [cited 2024 Aug 31]. Available from: <https://www.newarab.com/analysis/ecocide-gaza-environmental-impact-israels-war>
- Perugini, N., & Gordon, N. (2024). Medical lawfare: The Nakba and Israel's attacks on Palestinian healthcare. *Journal of Palestine Studies*, 53, 68–91.
- Pita, A. (2024). 'Wipe Gazagaza off the face of the earth': Thethe statements made by Israeli politicians on which South Africa supports its genocide case [Internet]. EL PAÍS Engl[cited 2024 Sep 22]. Available from <https://english.elpais.com/international/2024-01-11/wipe-gaza-off-the-face-of-the-earth-the-statements-made-by-israeli-politicians-on-which-south-africa-supports-its-genocide-case.html>
- Polio returns to Gaza: Where else has the virus re-emerged? | Health News | Al Jazeera [Internet]. [cited 2024 Sep 2]. Available from: <https://www.aljazeera.com/news/2024/9/2/polio-returns-to-gaza-where-else-has-the-virus-re-emerged>
- Press, A. (2012). Israel used "calorie count" to limit Gaza food during blockade, critics claim. *The Guardian* [Internet]. Oct 17 [cited 2024 Sep 22]; Available from: <https://www.theguardian.com/world/2012/oct/17/israeli-military-calorie-limit-gaza>
- Press, A. (2024). Facing horrific conditions, foreign doctors treating Gaza wounded volunteer to stay [Internet]. *Voice Am.* [cited 2024 Jul 23]. Available from: <https://www.voanews.com/a/facing-horrific-conditions-foreign-doctors-treating-gaza-wounded-volunteer-to-stay-7617238.html>
- Qassem-Hassan, L., & Walden, R. (2023). A Palestinian and an Israeli physician speak out for medical ethics. *The Lancet*, 402, 1619–1620.
- 3 questions to MSF: Antimicrobial resistance in the ongoing Gaza war – 2023 [Internet]. ReAct. [cited 2024 Jul 21]. Available from: <https://www.reactgroup.org/news-and-views/news-and-opinions/2023-2/3-questions-to-msf-antibiotic-resistance-in-the-ongoing-gaza-war/>
- Qurbani, K., Ahmed, S. K., Hussein, S., & Omar, R. M. (2024). Urgent attention needed for the mental health of people in Gaza: A call for global action. *Asian Journal of Psychiatry*, 91, 103851.
- Rafah a ghost town as Israeli military claims victory in Gaza's southernmost city [Internet]. NBC News. 2024 [cited 2024 Sep 17]. Available from: <https://www.nbcnews.com/news/world/rafah-gaza-israel-military-victory-destruction-rcna170991>
- Rantissi, T., Gitis, V., Zong, Z., & Hankins, N. (2024). Transforming the water-energy nexus in Gaza: A systems approach. *Global Challenges*, 8, 2300304.
- Razum, O., Agha, H., Davidovitch, N., McCall, T., & Shapira, S. (2024). Gaza ceasefire: Improve WASH, promote cooperation. *International Journal of Public Health*, 69, 1607412.
- Report of the independent international commission of inquiry on the protests in the Occupied Palestinian Territory (A/HRC/40/74) (Advance Edited Version) - occupied Palestinian territory | ReliefWeb [Internet]. 2019 [cited 2024 Sep 2]. Available from: <https://reliefweb.int/report/occupied-palestinian-territory/report-independent-international-commission-inquiry-protests>
- Rights AMC for H. Genocide Scholars and 100 Palestinian and International Civil Society Organisations Call on Prosecutor Khan to Issue Arrest Warrants, Investigate Israeli Crimes and Intervene to Deter Incitement to Commit Genocide in Gaza [Internet]. Al Mezan Cent. Hum. Rights. [cited 2024 Sep 17]. Available from: <https://www.mezan.org/public/en/post/46295>
- Rights expert finds 'reasonable grounds' genocide is being committed in Gaza | UN News [Internet]. [cited 2024 Sep 1]. Available from: <https://news.un.org/en/story/2024/03/1147976>
- Salam (2024). There is no way to leave Gaza. *The Lancet*, 403, 26–27.
- Salmiya, M. A. (2023a). Urgent humanitarian call to save lives in Gaza. *The Lancet*, 402, 1523–1524.
- Salmiya, M. A. (2023b). Gaza hospitals: Military siege and bombings. *The Lancet*, 402, 2191.
- Salmiya, M. A. (2024). Stop the Gaza genocide immediately. *The Lancet*, 403, 2286–2287.
- Samreen, Ahmad, I., Malak, H. A., & Abulreesh, H. H. (2021). Environmental antimicrobial resistance and its drivers: A potential threat to public health. *Journal of Global Antimicrobial Resistance*, 27, 101–111.
- Samudzi, Z. (2024). "We are fighting Nazis": Genocidal fashionings of Gaza(ns) after 7 October. *Journal of Genocide Research*, 26, 1–9.
- Scholars. (2024). civil society call on ICC Prosecutor to issue arrest warrants, investigate Israeli crimes in Gaza [Internet] WAFA Agency. [cited Sep 17]. Available from: <http://wafa.ps/Pages/Details/138509>
- Scholle, O., Rasmussen, L., Reilev, M., Viebrock, J., & Haug, U. (2024). Comparative analysis of outpatient antibiotic prescribing in early life: A population-based study across birth cohorts in Denmark and Germany. *Infectious Diseases and Therapy*, 13, 299–312.
- Scorched-earth: making Gaza uninhabitable for generations to come [Internet]. Greenpeace Malays. [cited 2024 Aug 31]. Available from: <https://www.greenpeace.org/malaysia/story/55042/scorched-earth-making-gaza-uninhabitable-for-generations-to-come/>
- Segal, R., & Daniele, L. (2024). Gaza as twilight of Israel exceptionalism: Holocaust and genocide studies from unprecedented crisis to unprecedented change. *Journal of Genocide Research*, 26, 1–10.



- Seita, A., & Al-Jadba, G. (2023). Gaza is facing a humanitarian catastrophe. *The Lancet*, 402, 1745.
- Semerdjian, E. (2024). A world without civilians. *Journal of Genocide Research*, 26, 1–6.
- Sidhwa, F. (2024). 65 doctors, nurses and paramedics: What we saw in Gaza. *The New York times*. <https://www.nytimes.com/interactive/2024/10/09/opinion/gaza-doctor-interviews.html>
- Shafat, T., Shimoni, O., Nikonov, A., & Nesher, L. (2021). The kinetics of an antibiotic stewardship intervention: A Quasi-Experimental study. *Infectious Diseases and Therapy*, 10, 613–619.
- Sharma, S., Chauhan, A., Ranjan, A., Mathkor, D. M., Haque, S., Ramniwas, S., et al. (2024). Emerging challenges in antimicrobial resistance: Implications for pathogenic microorganisms, novel antibiotics, and their impact on sustainability. *Frontiers in Microbiology [Internet]*, 15. [cited 2024 Jul 21];15. Available from: <https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2024.1403168/full>
- Shaw, M. (2024). Inescapably genocidal. *Journal of Genocide Research*, 26, 1–5.
- Shaw, M. (n.d.). The uses and abuses of the term 'Genocide' in Gaza [Internet]. New Lines Mag. 2023 [cited 2024 Sep 17]. Available from: <https://newlinesmag.com/spotlight/the-uses-and-abuses-of-the-term-genocide-in-gaza/>
- Shellah, D. (2023). How much suffering is enough? A look at what is happening in Gaza. *The Lancet*, 402, 2072.
- Shellah, D. (2024). War on Gaza: Attacks on science are erasing the future. *The Lancet*, 404, 27–28.
- Shomar, B., & Rovira, J. (2023). Human health risks associated with the consumption of groundwater in the Gaza Strip. *Heliyon*, 9, e21989.
- Siddiqui MM Usaid. Israel yet to show plan to protect civilians in Rafah operation: US [Internet]. Al Jazeera. [cited 2024 Sep 17]. Available from: <https://www.aljazeera.com/news/liveblog/2024/3/11/israels-war-on-gaza-live-ramadan-begins-with-no-end-to-israels-siege>
- Siege and Starvation: How Israel Obstructs Aid to Gaza [Internet]. Refug. Int. [cited 2024 Aug 31]. Available from: <https://www.refugeesinternational.org/reports-briefs/siege-and-starvation-how-israel-obstructs-aid-to-gaza/>
- Smerkovich, M. (2024). Many Israelis say social media content about the Israel-Hamas war should be censored [Internet]. Pew Research Center [cited 2024 Sep 22]. Available from: <https://www.pewresearch.org/short-reads/2024/08/26/many-israelis-say-social-media-content-about-the-israel-hamas-war-should-be-censored/>
- Smith-Amara, J. (2024). Medical voices against Dr Muhammad Abu Salmiya's detention. *The Lancet*, 403, 2285–2286.
- South Africa accuses Israel of genocide: Everything we know about the case [Internet]. ITV News. 2024 [cited 2024 Sep 17]. Available from: <https://www.itv.com/news/2024-01-10/south-africa-accuses-israel-of-genocide-everything-we-know-about-the-case>
- Souza, L. E., Buss, P., & Alcázar, S. (2024). Wars are never necessary: Gaza is the best example. *The Lancet*, 403, 349–350.
- Stacey, D. Pedro Arrojo, UN Special Rapporteur: 'The Gaza war is heading towards genocide' [Internet]. EL PAÍS Engl. 2023 [cited 2024 Sep 17]. Available from: <https://english.elpais.com/international/2023-11-04/pedro-arrojo-un-special-rapporteur-the-gaza-war-is-heading-towards-genocide.html>
- Staffthe, C. W. Document: Israel calculated calorie needs for embargoed Gazans [Internet]. CNN. 2012 [cited 2024 Sep 22]. Available from: <https://www.cnn.com/2012/10/17/world/meast/israel-calorie-count-gaza/index.html>
- Statement on the UNEP Assessment on Environmental Damage in Gaza [Internet]. Cent. Int. Environ. Law. [cited 2024 Aug 31]. Available from: <https://www.ciel.org/news/unep-report-environmental-damage-gaza/>
- Stepansky US Joseph. Israel's war on Gaza updates. School strike contradicts 'all moral values' [Internet]. Al Jazeera. [cited 2024 Sep 17]. Available from: <https://www.aljazeera.com/news/liveblog/2024/6/6/israels-war-on-gaza-live-relentless-israeli-strikes-kill-102-palestinians>
- Sultany, N. (2024). A threshold crossed: On genocidal intent and the duty to prevent genocide in Palestine. *Journal of Genocide Research*, 26, 1–26.
- Symochko, L., Pereira, P., Demyanyuk, O., Pinheiro, M. N. C., & Barcelo, D. (2024). Resistome in a changing environment: Hotspots and vectors of spreading with a focus on the Russian-Ukrainian War. *Heliyon*, 10, e32716.
- Taylor, A. (2021). With strikes targeting rockets and tunnels, the Israeli tactic of 'mowing the grass' returns to Gaza. *Wash Post [Internet]*. May 14 [cited 2024 Sep 22]; Available from: <https://www.washingtonpost.com/world/2021/05/14/israel-gaza-history/>
- The Gaza Strip | The humanitarian impact of 15 years of blockade - June 2022 | UNICEF Middle East and North Africa [Internet]. [cited 2024 Sep 22]. Available from: <https://www.unicef.org/mena/documents/gaza-strip-humanitarian-impact-15-years-blockade-june-2022>
- The near impossible task of getting lifesaving supplies into Gaza [EN/AR] - occupied Palestinian territory | ReliefWeb [Internet]. 2024 [cited 2024 Jul 23]. Available from: <https://reliefweb.int/report/occupied-palestinian-territory/near-impossible-task-getting-lifesaving-supplies-gaza-enar>
- The New Humanitarian | Inside the siege on Gaza's largest remaining hospital [Internet]. 2024 [cited 2024 Aug 31]. Available from: <https://www.thenewhumanitarian.org/2024/02/12/inside-siege-gaza-largest-remaining-hospital-nasser-khan-younis>
- The Unprecedented Environmental Cost of Israel's Genocide in Gaza [Internet]. Stop War. [cited 2024 Aug 31]. Available from: <https://www.stopwar.org.uk/article/the-unprecedented-environmental-cost-of-israels-genocide-in-gaza/>

- UN experts declare famine has spread throughout Gaza strip | OHCHR [Internet]. (n.d.). [cited 2024 Aug 29]. Available from: <https://www.ohchr.org/en/press-releases/2024/07/un-experts-declare-famine-has-spread-throughout-gaza-strip>
- Üngör, U. U. (2024). Screaming, silence, and mass violence in Israel/Palestine. *Journal of Genocide Research*, 26, 1–9.
- United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory | Reported impact snapshot | Gaza Strip (28 August 2024) [Internet]. U. N. Off. Coord. Humanit. Aff. - Occup. Palest. Territ. 2024 [cited 2024 Sep 4]. Available from: <http://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-28-august-2024>
- Variant type 2 poliovirus isolated from sewage samples in Gaza – GPEI [Internet]. [cited 2024 Jul 21]. Available from: <https://polioeradication.org/news-post/variant-type-2-poliovirus-isolated-from-sewage-samples-in-gaza/>
- Ventola, C. L. (2015). The antibiotic resistance crisis. *P & T: A peer-reviewed journal for formulary management*, 40, 277–283.
- Watch: 22-Minute Speech Details Israeli Officials' Genocidal Statements at ICJ [Internet]. Common Dreams. 2024 [cited 2024 Sep 22]. Available from: <https://www.commondreams.org/news/israel-genocidal-statements-2666930604>
- What is fuelling the world's antimicrobial resistance crisis? [Internet]. 2023 [cited 2024 Jul 21]. Available from: <https://www.unep.org/news-and-stories/story/what-fuelling-worlds-antimicrobial-resistance-crisis>
- What We have Witnessed in Gaza? [Internet]. 2024 [cited 2024 Sep 4]. Available from: <https://www.youtube.com/watch?v=RX3TGJ83iZ0>
- Yang, Y. T. (2023). The need for medical sanctity in conflict zones. *The Lancet*, 402, 2191–2192.
- Yaqub, S., Sparrelied, E., Sampaio-Neto, J., Lassen, K., & Wigmore, S. J. (2023). Israel and Gaza: The killing of civilians must stop. *The Lancet*, 402, 2069–2070.
- Zhang, S. UN Agency Records 360,000 Infectious Disease Cases in Gaza Shelters — 1 for Every 6 Palestinians in Region [Internet]. Truthout. 2023 [cited 2024 Sep 2]. Available from: <https://truthout.org/articles/un-agency-reports-over-360000-infectious-disease-cases-in-gaza-shelters/>
- Zhu, D. T., Zinszer, K., & Abuzerr, S. (2024). Oral diseases in Palestine. *The Lancet*, 404, 26–27.
- Zugbur, M. R. (2023). Protect civilians' lives and health care in Gaza. *The Lancet*, 402, 1620–1621.
- 'This Terrible War Must End', Secretary-General's Chef de Cabinet Urges Security Council, amid Growing Calls for Immediate Ceasefire to End Bloodshed in Gaza | Meetings Coverage and Press Releases [Internet]. [cited 2024 Sep 2]. Available from: <https://press.un.org/en/2024/sc15767.doc.htm>
- 'Ticking time bomb': Poliovirus found in Gaza sewage [Internet]. Al Jazeera. [cited 2024 Jul 21]. Available from: <https://www.aljazeera.com/news/2024/7/19/ticking-time-bomb-poliovirus-found-in-gaza-sewage>
- 'We Are All Sick': Infectious Diseases Spread Across Gaza - The New York Times [Internet]. [cited 2024 Jul 6]. Available from: <https://www.nytimes.com/2023/12/11/world/middleeast/gaza-health-infectious-disease.html>
- 'Yes, it is genocide' in Gaza says Israeli professor of Holocaust studies [Internet]. Middle East Monit. 2024 [cited 2024 Sep 17]. Available from: <https://www.middleeastmonitor.com/20240430-yes-it-is-genocide-in-gaza-says-israeli-professor-of-holocaust-studies/>

AUTHOR BIOGRAPHIES

Bilal Irfan, Center for Bioethics, Harvard Medical School, Boston, MA, USA. FAJR Scientific, Houston, Texas, USA. Correspondence in the *Lancet* titled *Will there be a future for newborns in Gaza?* The *Lancet*, 404(10464), (2024): 1725–1726. (bilal_irfan@hms.harvard.edu).

Izzeddin Lulu, Al-Shifa Hospital, Gaza City, Gaza Strip, Palestine.

Adam Hamawy, Penn Medicine Princeton Medical Center, Plainsboro, New Jersey, USA. FAJR Scientific, Houston, Texas, USA.

Abdallah Abu Shammala, European Gaza Hospital, Khan Yunis, Gaza Strip, Palestine. Correspondence in the *Lancet* titled *Will there be a future for newborns in Gaza?* The *Lancet*, 404(10464), (2024): 1725–1726

Susan Kullab, King Hussein Cancer Center, Amman, Jordan. Palestine American Medical Association, Fairfax, Virginia, USA.



Mohamed Fawaz, University of Michigan Medical School, Ann Arbor, MI, USA. FAJR Scientific, Houston, Texas, USA.

Abd Al-Karim Sammour, Islamic University of Gaza, Gaza City, Gaza Strip, Palestine. FAJR Scientific, Houston, Texas, USA.

Haseeb Khawaja, Canton Medical Clinic, Canton, MI, USA. FAJR Scientific, Houston, Texas, USA.

Nour Alshaer, Islamic University of Gaza, Gaza City, Gaza Strip, Palestine. FAJR Scientific, Houston, Texas, USA.

Ghassan Abu-Sittah, American University of Beirut, Beirut, Lebanon. Doctors Without Borders (MSF).

Osaid Alser, Islamic University of Gaza, Gaza City, Gaza Strip, Palestine. Recent publication in the Lancet titled *Trauma care supported through a global telemedicine initiative during the 2023–24 military assault on the Gaza Strip, occupied Palestinian territory: a case series*.

Mark Perlmutter, Palestine American Medical Association, Fairfax, Virginia, USA.

Anas Al-Shembari, European Gaza Hospital, Khan Yunis, Gaza Strip, Palestine. FAJR Scientific, Houston, Texas, USA.

Jeremy Hickey, Sir Charles Gairdner Hospital, Nedlands, Western Australia, Australia. FAJR Scientific, Houston, Texas, USA.

Tariq Nayfeh, Greater Washington Orthopedic Group, USA. FAJR Scientific, Houston, Texas, USA.

Mohammed Tahir, Bart's Health, London, United Kingdom. FAJR Scientific, Houston, Texas, USA.

Muhammad Junaid Sultan, Department of Vascular Surgery, Hull University Hospitals, Hull, UK. FAJR Scientific, Houston, Texas, USA.

Elias Nasser, The University of Texas Southwestern Medical Center, Dallas, Texas, USA. FAJR Scientific, Houston, Texas, USA.

Muaaz Wajahath, Michigan State University College of Human Medicine, Lansing, MI, USA. FAJR Scientific, Houston, Texas, USA.

Aneela Yaqoob, Corewell Beaumont Health, Taylor, MI, USA. FAJR Scientific, Houston, Texas, USA.

Ahmad Hasan, Department of Orthopaedic Surgery, Detroit Medical Center, Detroit, MI, USA. FAJR Scientific, Houston, Texas, USA.

Ali Elaydi, FAJR Scientific, Houston, Texas, USA.



Abdullah Ghali, Baylor College of Medicine, Houston, Texas, USA. FAJR Scientific, Houston, Texas, USA.

Mosab Nasser, FAJR Scientific, Houston, Texas, USA.

Khaled J. Saleh, Michigan State University College of Human Medicine, Lansing, MI, USA. FAJR Scientific, Houston, Texas, USA (kjsaleh@gmail.com).

How to cite this article: Irfan, B., Lulu, I., Hamawy, A., Shammala, A. A., Kullab, S., Fawaz, M., Sammour, A.-K., Khawaja, H., Alshaer, N., Abu-Sittah, G., Alser, O., Perlmutter, M., Al-Shembari, A., Hickey, J., Nayfeh, T., Tahir, M., Sultan, M. J., Nasser, E., Wajahath, M., ...Saleh, K. J. (2025). Combating Infections Under Siege: Healthcare Challenges Amidst the military assault in Gaza. *World Medical & Health Policy*, 17, 188–213. <https://doi.org/10.1002/wmh3.642>