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Iran War 2026: Health Systems and Scientific Capacity Unraveling

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Dear Editor

As the United States and Israel have started attacking Iran militarily since February 2026, we are beginning to see many different types of military conflict in the Middle East, among them the consequences of war. The evidence available from war-torn countries indicates that the death of many people through war or other means is by no means a complete picture of human loss that has occurred during and after the conflict. Such experience also shows that conflicts not only cause direct loss of life to human beings, but they also destroy health care systems, limit access to health services, and disrupt the supply chain of medicines and medical supplies.

The World Health Organization (WHO) is expecting devastating health and environmental effects from future bombings close to sensitive sites, according to reports produced by international organizations. This statement confirms that the health effects of conflict can occur beyond the site of the attack and can affect a large number of people, as well as their environment (1).

There are also numerous reports documenting attacks on health care facilities and personnel. In some cases, health workers have died or been injured as a result of these attacks. Additionally, many medical facilities have been damaged or destroyed and most health care delivery systems have been interrupted (2).

The result of these disruptions to health care delivery systems is that the amount of health services provided is reduced and this greatly erodes the public trust in the continuity and access of health system services.

Armed conflict can cause disruptions in the supply chain of medicines and other medical supplies because many of them are manufactured and distributed globally by multiple channels. Any alteration made to transport routes, increasing fuel costs, or limited sources of logistics can cause countries to be unable to obtain medical supplies for patients (3). International humanitarian law requires that patients, healthcare professionals, and health facilities be protected as principles of law; therefore, all parties in armed conflict must not intentionally damage health facilities while they are in the armed conflict, and they must take measures to minimize harm to civilians (4). However, reports of damage to hospitals, emergency care centers, and ambulances continue to show that the operation of health systems and patients accessing life-saving services (5) can be significantly diminished.

In addition to health impacts, armed conflict can indirectly affect the well-being of affected populations through a variety of means. The interruption of essential services offered by the health system, such as chronic disease management, cancer treatment, emergency services, maternal and neonatal health, and infectious disease controls, will have an effect on the population's health indicators over time (4, 6). Critical infrastructure supports most of these services, so the loss or damage to infrastructure systems like electricity, fuel supply, and transportation will create operational burdens for healthcare providers. Reports have shown that many cultural heritage sites and historic centers have also been destroyed or damaged during armed conflict. While these impacts do not occur within the health sector, they do have a major societal consequence and impact the social fabric of a country. Destroying a community's cultural heritage

can create social and psychological impacts that may lead to higher levels of insecurity and psychological distress for those who have lost access to these resources (7). The ability of health systems to recover from crises depends on two factors. These factors include the presence of medical supplies and equipment and the operational status of communication networks. The current health systems rely on internet connectivity which enables them to perform emergency operations, patient transfers, telemedicine, and clinical information sharing. Emergency response operations together with critical medical services face disruption because of widespread internet service interruptions. The public health programs which include infectious disease tracking, vaccination initiatives, and screening activities depend on digital communication systems for their operations. The delivery of these services will be disrupted because of connectivity problems. Reliable internet access functions as a fundamental part of health system infrastructure which helps strengthen system resilience (3, 4, 8). Research shows that armed conflicts produce permanent population health effects because they destroy essential infrastructures and interrupt health service operations. Health system protection needs to become a main goal for both national emergency response and international crisis management operations according to public health experts (2, 4, 6). Armed conflict can also have deep direct and indirect effects on the research capacity of health systems. Research institution destruction which includes Pasteur Institute of Iran impacts reference laboratory operations and leads to the destruction of essential biological materials and research data. Researchers face substantial challenges because internet connection outages and broken communication systems prevent them from doing their work. Researchers experience difficulties accessing scientific materials databases and specialized software's which also affects the submission of research papers and peer reviews as well as the research collaboration with global networks. Health research systems face serious challenges which prevent them from creating scientific evidence and health policy support through diagnostic technology development (1, 9–11).

Periods of armed conflict severely impact the education of health professionals around the world, especially in the area of Medicine. Armed conflict disrupts hospitals and healthcare systems, where medical students, interns, and Residents receive much of their clinical training through observational experiences related to patient diagnosis and treatment, thereby significantly limiting opportunities to see clinical diagnostic and therapeutic processes being done, and have hands-on experience caring for patients. University closures and other interruptions to in-person instruction also restrict students' ability to receive much of their theoretical education and complete their formal educational programs. Communication issues and limited or interrupted internet access add another layer of complexity to the education of health professionals, by restricting access to scientific literature, online education, academic interaction with faculty members and national/global collaboration with other educational institutions. As a consequence, it is possible that there may be long-term effects on the education and training of health professionals as a result of these interruptions, which could ultimately undermine health systems' capacity to meet the population's health needs (11).

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