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IDOSR JOURNAL OF APPLIED SCIENCES 11(1):26-34, 2026 ISSN: 2550-7931

https://doi.org/10.59298/IDOSRJAS/2026/1112634 IDOSRJAS11106

Health Professional Training for War Settings

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ABSTRACT

Armed conflicts create complex health challenges that strain local health systems and require specialized competencies for health professionals operating in these environments. Effective humanitarian response depends on training healthcare providers in clinical, public health, ethical, and operational skills tailored to conflict settings. Core competencies include trauma care, acute resuscitation, mental health and psychological first aid, infection prevention, hazardous materials management, triage, and ethical decision-making guided by humanitarian principles. Training delivery employs simulation-based exercises, field rotations, interprofessional education, and low-resource adaptations to prepare health workers for austere, high-risk conditions. Additional considerations include safety, legal protections, occupational health, cultural competence, communication, and stakeholder engagement. Integrating such training into existing medical curricula and evaluating outcomes through structured frameworks is essential for improving preparedness and response. Addressing gaps in training implementation, resource mobilization, and context-specific adaptation remains a priority to ensure effective and safe health service delivery in war-affected regions.

Keywords: Health professional training, armed conflict, humanitarian response, trauma care, simulation-based education.

INTRODUCTION

Armed conflicts impose significant challenges on health systems in affected areas, hindering the provision of medical care to injured and marginalized civilians. As a consequence, international humanitarian organizations deploy foreign healthcare teams to deliver assistance [1]. To meet local medical needs effectively, health professionals must possess foundational competencies suited to conflict settings. For instance, the World Health Organization and the International Committee of the Red Cross prioritize trauma care in their operational guidelines. Initiatives aimed at enhancing health professional training for war contexts must therefore address relevant competencies within the establishment of a broader training framework [2]. The objective of this work is to identify the core topics and skills that should be covered when training extrinsic healthcare providers to operate in war conditions. Critically evaluating different approaches to humanitarian assistance in war contexts reveals an ethical baseline and operational principles that guide the provision of health care to wounded individuals regardless of the underlying ethical justification [1, 2].

Historical and Ethical Foundations

The movement that led to the establishment of the Red Cross in 1863 resulted from the need to better care for wounded soldiers on the battlefield [13]. The first humanitarian principles formulated at that time, which have considerably shaped the evolution of humanitarian initiatives, call for an impartial and neutral approach to address human suffering [15]. In essence, they maintain that health interventions are justified, irrespective of the challenges posed by political, criminal, or military events that accompany wars and other complex emergencies, and they recommend that service providers be freed to attend strictly to those needs [17]. At the opposite end of the spectrum, the Health and Humanitarian Standards endorsed by the Sphere organization prescribe the desire to

address needs even in the presence of certain types of armed conflict [5]. They recommend that redirection is permitted, proffer suggestions to minimize harm during intervention, demand articulated operational choices, and impose an unconditional duty of care to remain engaged [3]. This ambiguity highlights that various frameworks articulating moral obligations remain available for consideration.

Core Competencies for War-Context Health Professionals

During armed conflict, the provision of health services invariably becomes more difficult, yet the need for those services increases exponentially [1]. The physical and psychological effects of armed violence, direct and indirect morbidity arising from the destruction of health services and infrastructures, and the logistical difficulties such as living and working under duress and the fear of violence from armed groups all affect the delivery of health interventions [20]. Health professionals working under these conditions encounter different problems than those of their colleagues in more stable environments [13]. A range of clinical, public health, and humanitarian practice skills that can be applied in these settings are outlined in various frameworks [14].

Clinical Skill Sets in Resource-Limited Environments

As armed conflicts are increasingly recognized as a humanitarian and a health issue, international health institutions urge prioritization of the establishment of functional health services in war-torn settings [1]. A substantial gap exists, however, between the anticipated health professional competencies and the actual skill sets gained from medical curricula [3]. Health sector professionals remain largely unprepared to manage the health of affected populations in the complex social, political, and cultural settings that characterize most external health interventions in conflict zones [20, 21]. Competencies of primary importance when delivering health assistance in conflict settings involve clinical skill sets that are essential yet often neglected in conventional training. A pre-deployment competency framework that defines the essential health professional clinical skill sets for functioning in resource-limited environments and especially in conflict-affected areas has therefore been developed [17]. This framework identifies the following core competencies as fundamental to delivery of care at the individual and community levels: austere, essential-harm-reduction, and improvised medicine; trauma and acute resuscitation; mental health and psychological first aid; decontamination, prevention of infection transmission, and hazardous material management; triage and mass casualty management; and ethical decision-making in line with humanitarian principles concerning impartial and neutral health assistance[23].

Trauma Care and Acute Resuscitation

Control of hemorrhage, management of the airway, and rapid stabilization of the extremities represent priority measures in trauma care and acute resuscitation under conditions of extreme resource scarcity [5]. In settings where access to computed tomography (CT) and percutaneous aspiration (PA) are feasible, marking these options in the initial assessment can aid efficiency [4]. Trauma constitutes the leading cause of mortality and morbidity in young populations of low- and middle-income countries, with penetrating injuries featuring prominently in armed conflicts [2]. The trajectory of learning and training in trauma care and acute resuscitation must therefore be defined, in coordination with health professionals, educationalists, and stakeholders, and embedded within a suitable pedagogical framework [1].

Mental Health and Psychological First Aid

Primary stress reactions can be expected immediately after exposure to an overwhelming stressor. Increasing need for psychological support arises. Strategies focus on awareness of stress reactions, psychological first aid (PFA) principles, and referral [6]. PFA key elements include attentively listening to and observing distressed individuals, responding in culturally and contextually appropriate ways, informing individuals about common stress reactions, facilitating access to practical assistance, and helping individual's access social support [5]. Trauma-informed approaches establish a sense of safety, while non-intrusive contact and the offer to talk may enable expression of emotions and concerns. An important principle to reinforce is that only issues a person wishes to discuss and only when he or she wishes to do so should be addressed [8]. Tasks individuals frequently wish to address immediately post-impact include re-establishing family contact or other forms of social support. All such situations are commonly perceived as practical problems (i.e., greater access to clarity, food, water, fuel, shelter, sanitation, transportation, etc.; clearer lines of communication; the opportunity to take someone to hospital; etc. [5]. Secondary objective to determine training effectiveness, knowledge, skills, capabilities, and, subsequently, scaling-up pathways for institutionalization and continuum [5].

Decontamination, Infection Control, and Hazard Management

Personal protective equipment (PPE) serves as the frontline defense against chemical, biological, radiological, and nuclear (CBRN) hazards. Selection relies on the hazard type, exposure potential, and work activity; available guidance helps determine appropriate levels for different situations [6]. Infection prevention becomes even more critical in large-scale health emergencies where health systems are overwhelmed and infectious disease outbreaks are prevalent [4]. During outreach missions, the risk increases further due to interaction with individuals who

exhibit or have been exposed to infections; field activities add even more exposure [7]. Recognizing the associated IP hazards and planning accordingly is essential[22]. Implementing designated areas and procedures for decontamination of personnel and materials is also crucial[5]. Although such protocols may not be explicitly included in IPC curricula across various educational institutions, integrating training on established procedures is beneficial [7]. The hazardous area response team (HART) training program assists emergency medical personnel in recognizing hazardous materials in disasters or large-scale emergencies [8]. Health professionals provide essential first aid measures under difficult and dangerous conditions. Routine fieldwork with victims, particularly after a large-scale incidence of violence such as bomb attacks, presents an additional threat. Establishing a plan for initial evaluation at the accident site, determining the quantity of patients requiring immediate support, and developing procedures for supporting other medical practitioners is, therefore, vital[4].

Triage and Mass Casualty Management

In mass casualty situations, life-saving resources will always be limited. Therefore, prioritization is essential and should follow triage algorithms [16]. While various triage systems exist, and although modifications might make them more suitable for armed conflict settings, the START (Simple Triage and Rapid Treatment) and SALVAGE algorithms remain the most appropriate for low and middle-income countries that lack advanced logistics [9]. START encourages subjective triage decisions where limited data support an objective assessment [10]. Thus, maximising potential survival is possible even with incomplete information [25]. Under START, individuals are scored as immediate, delayed, minor, or deceased based on the capacity to evacuate from the scene. Individuals can be declared deceased when there are no observable signs of life, and the criteria for minor can be waived entirely. Furthermore, when using START in trauma situations, the emphasis placed on evacuation from a location may be unreasonable [17]. The SALVAGE algorithm expands upon this by considering other potentially lifeligtening injuries. Nevertheless, where CT or PA structures exist and enable full evaluation of individuals to determine priority for evacuation remains supportive of the overarching goal of mass-casualty management [23].

Ethical Decision-Making and Humanitarian Principles

Ethical dilemmas can take many forms and include questions of resource allocation, equity, the degree of harm, or violation of consent. Humanitarian assistance introduces impartiality and non-discrimination principles, although these principles may not alleviate ethical dilemmas in triage equity versus needs[5]. Distributive justice, i.e. "the fairness of a distribution of a benefit or a burden," is a key ethical concept also in triage [6]. Traditional triage principles (needs, equity, minimization) do not guarantee the consideration of distributive justice in practice, thus it becomes vital to guarantee no pre-existing inequity in the allocation of time and resources. Consequently, more options are necessary other than limiting allocation of time and resources; one option can be permission to use non-standard approaches such as harm to oneself or non-consensual treatment [11]. Such reports from among humanitarian personnel in conflict situations offer evidence of service provision with no feasible guarantee of consent. Extremist groups in particular are described to apply conditions that make rationally impossible to hold an informed and voluntary opinion (Knebel et al., 2022)[19]. Not every person in intending to serve humanitarian a role should compulsory accept duties under conditions that render holding an informed or voluntary opinion unattainable [20].

Training Delivery Modalities

Training delivery modalities focus on effective methods for guaranteeing learning progress, facilitating learning activities, and ensuring the availability of necessary materials and resources [9]. Grouping involves identifying who is involved in the learning process, with considerations for timing and location to optimize learning [10]. A military general practitioner's key capabilities include military knowledge and skills, understanding healthcare systems, diagnosing and managing diseases, and participating in prevention and public health [8]. They must be capable of handling casualties, performing triage, caring for trauma victims, and managing CBRNE casualties. Additionally, they should be skilled in disaster medicine, physical fitness, utilizing scientific resources, and conducting military medicine training and research [7]. Developing trauma training programs in asymmetric warfare is essential to reduce mortality and morbidity, improve trauma preparedness, and enhance training effectiveness through a needs-based, operational approach [2].

Simulation-Based Training and Low-Resource Adaptations

Training health professionals for work in armed conflict settings poses specific challenges as well as significant opportunities for creativity [5]. Competency-based curricula traditionally rely heavily on simulation-based training. Those who develop materials and approaches for low-resource contexts have gathered valuable insights into how to meet these needs [10]. Wide-ranging initiatives in the health-sector literature cite the applicability of simulation-based medical education (SBME) to low-resource environments, notably in low- and middle-income countries [12]. Enabling learners to acquire and hone skills in a risk-free arena minimizes threats to patients and instructors alike. Curriculum developers emphasize that modern SBME techniques can provide realistic,

contextually appropriate interventions while deterring skills decay [16]. Adaptations to achieve low-resource SBME include low-cost simulators, improvisation with classroom and clinical items, in-situ simulations, and task-trainer-based formative assessments [13]. Perioperative curricula using low-cost task trainers with a structured training plan and formative assessment exhibit marked improvements in knowledge and practice techniques under local conditions.

Field Exercises and Rotations in Conflict Zones

Health professional training for conflict settings where HS must be performed in war ice and/or under austere conditions is imperative [12]. Objectives include assess safety, patient load, and HS provision capacity; identify appropriate duties, duration of stay, and skill set; determine feasibility for untrained individuals in austere/conflict settings; and guide instructions for safe pre-deployment training and preparation; and disseminate these worldwide amongst healthcare workers[17]. Defence Health and HMT have already made unprecedented establishment efforts. The UK Defence Medical Services (DMS) provide operational medical support to Armed Forces engaged in combat, peacekeeping, and humanitarian assistance while under threat from ill-health or injury. To systematically guide the international humanitarian response a shared responsibility by national authorities, international and non-governmental organisations, volunteer organisations/groups, and the armed forces the "Inter Agency Standing Committee (IASC): Guidelines for the Health Sector: Adapted to the COVID-19 Pandemic" serves as a key reference text [15]. To guarantee relevance, the "IASC Health Sector COVID-19 Preparedness and Response Plan" will be incorporated within the Health Mission Transition Plan of the Health System Support Strategy. Per the DMS Cyclone Idai Enhancing National Capacity To Respond (ENCORE), several priority areas may be targeted [17].

Interprofessional Education and Team Coordination

Interprofessional education for health professional students must start early and progress through all stages of education [14]. Curriculum team coordinators should define how interprofessional education fits the overall curriculum and ensure that all students and staff in different disciplines, programs, and faculties involved in the teaching and learning process understand its rationale, learning goals, and expected outcomes[18]. The next step is to clarify the educational processes to be used, the teaching/learning experiences, and, where appropriate, the associated teaching and learning materials [24]. Finally, communication strategies, both macro and micro, should be developed to inform colleagues and prospective students about the interprofessional education components in the curriculum [12]. Interprofessional education for health professional students must start early and progress through all stages of education. Curriculum team coordinators should define how interprofessional education fits the overall curriculum and ensure that all students and staff in different disciplines, programs, and faculties involved in the teaching and learning process understand its rationale, learning goals, and expected outcomes[13]. Active learning strategies such as problem-based learning, case studies, role-play, simulations, or team teaching are used together with innovative methods such as drama, visual arts, and storytelling to reach non-mainstream or "hard-to-reach" learners [11]. Traditional teacher-centred approaches lectures, reading assignments, and e-learning modules are also included, as long as they are balanced with active learning strategies. The choice of educational processes also reflects a conscious desire to integrate and diversify the curriculum. Different health professions form different curricular teams, each pursuing its own disciplinary aims and outcomes; hence, the idea is to enable students to experience multiple perspectives while learning together as collaborative teams and grounding themselves subsequently[15].

Cultural Competence and Communication in Crisis

The ability to effectively communicate in the context of humanitarian crises, i.e. rapid-onset disasters due to natural hazards, remains an important but often neglected consideration within the preparedness framework[3]. A Key Informant Survey commissioned by the World Health Organization (WHO) highlighted a number of essential planning and communication activities relevant to disaster-prone countries [15]. Emergency health organisations should, therefore, prioritise the detailed standardisation of key messages, and their appropriate adaptation to country-specific contexts, as well as pre-empting the chain of command, escalations of situations, and capacity within the organisation prior to any emergency or outbreak [3]. Similarly, ensuring that feedback from affected communities can be communicated upwards has been shown to be of critical importance[26]. Adapting crisis communication practices to specific types of crisis is also an important determinant of effectiveness, e.g. as analysed by Haverkamp et al. in the context of humanitarian missions [1]. Although internationally relevant, considerations such as planning for language access, tailoring messages to a particular community, involving a representative of the affected population, and attending to the socio-cultural dimensions of a crisis yet warrant greater attention within humanitarian health sectors[22].

Assessment and Competency Verification

In war contexts, Objective Structured Clinical Examinations (OSCEs) should define stations, relevant scenarios, scoring rubrics, and ethical considerations. Constructing OSCEs that align closely with planned training objectives also reinforces the rationale and relevance of the overall curriculum [1]. Students must demonstrate skill sets considered essential for the intervention and restoration of acute and immediate health-care functions, aligned with instructional design principles. Table 1 provides a framework and examples of OSCE components for curriculum planning [11]. Continuous competency and performance feedback is vital for both educational and operational purposes. Implementing longitudinal tracking alongside feedback loops improves situational awareness and equips decision-makers to better meet both individual and occupational needs [16]. Competencies, practice exposure, and the level of supervision or oversight required should all be recorded systematically. Remediation pathways addressing urgent or critical aspects of competency can then be put in place as required[3].

Objective Structured Clinical Examinations in Conflict Contexts

Objective Structured Clinical Examinations (OSCEs) form the basis of competency-based assessments in medical training for both pre- and post-registration students worldwide [17]. Even under the exigencies of war, these examinations can be adapted to verify critical skills by ensuring certain responsibilities are taken onboard, hence their inclusion among the suggested core competencies in humanitarian settings [7]. Available OSCE stations, relevant clinical scenarios, ethical issues, and proposed scoring rubrics for war-context health professionals are summarized [8]. Modifications to traditional OSCE practices are recommended in light of resource constraints and cultural considerations. Scenarios are shaped, in part, by the very context in which these displaced medical systems find themselves, where exposure to a wide range of critical medical situations increasingly characterizes the health care practice of those who nevertheless remain [9].

Continuous Competency and Performance Feedback

Competency verification takes myriad forms; a single-snapshot approach would consider a trainee "competent" after the validation of relevant knowledge and skill sets. Such dichotomies poorly fit the nature of many skills in clinical disciplines [5]. Multiple variables like clinical context, human factors, health system constraints, and team coordination impact the precise modalities of care delivered [1]. For complex domains such as surgery, oversight by a trained supervisor remains imperative. Medicine's multifaceted systems of knowledge understood variously as "competency pillars," "entrustable professional activities," or "domains and frameworks" resist clear-cut categorization. Knowledge in these systems travels in cycles: "knowledge about knowledge," "knowledge of knowledge and knowledge about oneself," and "knowledge beyond oneself" naturally overlap with continuous feedback loops [6]. Considerable room remains to enhance the professionalism competencies expected of medical trainees pursuing a career in areas where unanticipated interruptions frequently arise and supervision rates remain low. Trainees departing to humanitarian missions may unexpectedly encounter complex surgical challenges due to prolonged supply chain disruptions [8]. En-route guidance from a supervising consultant may not always prove feasible. Some countries impose embassy notifications for departing personnel, making pre- or post-deployment renewal of essential skills unmanageable[7].

Safety, Security, and Legal Considerations

Health professionals conducting operations in war situations may face personal risks associated with physical safety and professional practice. Crisis events in conflict-affected areas can affect infrastructure and public order, disrupting telecommunications, transport routes, and supply chains, and restricting the movement of humanitarian personnel [17]. Important engineering services and vital power networks may be degraded or destroyed. Conflict-affected individuals can be radicalized and involved in rioting, assassination, civil war, and guerrilla warfare [14]. Prior attacks against health facilities and personnel by armed groups may occur, resulting in destruction of clinics and deaths of staff. Advance preparation and contingency planning may help to mitigate these risks [13]. To frame the concept of safety planning for humanitarian work before, during, and after community activity, the INTERACTION sectoral group produced initial presentations on the topic on web pages and incorporated them into their humanitarian training guide broadened by the Humanitarian Accountability Partnership in Nepal in July 1997[24]. Specific considerations relevant to safety planning for training are indicated: a description of the places and communities where the training will take place, and the surroundings and temporal elements involved, taking into account the main humanitarian concern of infected corpses to be buried and the necessity of gathering a minimum number of persons before the training can commence [18].

Occupational Health and Personal Protective Equipment

Occupational health protection during humanitarian operations performed in situations of armed conflict constitutes a foundational safeguarding of the workforce involved in addressing humanitarian need [19]. Humanitarian health workers exposed to hazards associated with those activities ought to be protected by the same framework that governs occupational health for other working persons worldwide [20]. The Occupational

safety and health administration has defined personal protective equipment (PPE) as "the equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses; the hazards addressed by the standard include chemical, radiological, physical, electrical, chemical, nuclear, and respiratory hazards" (OSHA, 2020)[25]. During the COVID 19 pandemic, the necessity of having competent multiprofessional teams trained to plan and organize the use of PPE became evident through the mounting work on a global scale and the need for elaborate planning to organize the supply and use of PPE during humanitarian work in the field for healthcare workers [19, 20]. Requirements for PPE selection need not be limited to those currently considered by many who organize the provision of health care given the political constraints linked to sporadic violence [1].

Legal Protections, Neutrality, and Accountability

Health-care systems face unprecedented pressure during armed conflict, putting patients at risk and hampering efforts to fulfill humanitarian obligations [2]. The presence of illicit combatants raises additional challenges. Health professionals interested in mitigating war-context health challenges must distinguish clearly between medical and military roles [28]. Participants in the Geneva Conventions and the Additional Protocols of 1977 prohibit attacks against health personnel, for unsafe health-care provision endangers the injured andsick [1]. Broadly defined, health personnel include those individuals engaged solely in the health sector, private-sector professionals, and volunteers who may coordinate service delivery within vulnerable communities and civil-society projects [16]. More than 1,200 attacks on health facilities or personnel occurred in 2016 to 18 [21]. Such strikes became commonplace during the COVID-19 pandemic, with attackers pledging allegiance to ISIS and other terrorist organizations [19]. Counterterrorism measures violate G7 commitments to access the vulnerable and address discriminatory policies against populations considered security threats [22]. Similarly, deespotratising their knowledge and skills enables health professionals to mitigate damage to the health sector and share life-saving principles with broader audiences [23]. Health professionals may become illicit combatants and forfeit legal protection upon undertaking any military activity, even in training simulators. Detention, incarceration, and forced submission to military service threaten such individuals [20]. Violation of the role distinction affords significant leverage to law enforcement and the military, even after committing no crime. Engaging the legal apparatus may mitigate risks but otherwise attracts scrutiny, so avoidance is unsurprisingly preferred. Attaining cover for personal safety and, where applicable, continuing to assist the at-risk population encumbered by threats and seeking restitution are common objectives [17]. In small, resource-depleted health systems, assailants may deliberately target the primary facilitating retraining function of the remaining health system. Pursuing outside advisory arrangements further minimizes exposure at the locality of operation [24]. Countries are urged to complement the fundamental obligations under Articles 30 and 31 of the 1949 Geneva Conventions by mitigating the legal risk associated with large-scale health training in nonformal humanitarian settings, finding a feasible formula for rigorous, practice-oriented training and enhancing the safety of trainees, trainers, and populations engaged [25].

Program Implementation and Policy Implications

Health professional training initiatives focused on practice in war settings exhibit implementation challenges common to broader low-income training initiatives [20]. Adapting high-impact teaching and evaluation strategies from obstetric practice in challenging settings would enhance training uptake and effectiveness in armed conflict and other emergency contexts. Frameworks for policy analysis help identify, investigate, and communicate the implications of training practice and intervention decisions and investments [23]. Implementing humanitarian health professional training in low- and middle-income countries is complicated by stretched bureaucracies, heavy workloads on local trainers, insufficient fiscal and administrative capacity, and pervasive cultural differences between funders and users [25]. These challenges echo universal change-management obstacles. Capacity-building frameworks, drawn from closer-to-home training experience, promote local administrative capacity and infrastructure as prerequisites for broader professional and public-health interventions, facilitate wider personnel engagement across diverse implementation domains, and safeguard constituent ownership over design, organization, execution, and follow-up[26].

Stakeholder Engagement and Resource Mobilization

In post-conflict settings, health systems must rebuild rapidly after complex emergencies. Allocation of limited resources is guided by stakeholder assessments of priority health needs and existing institutional capacities [20]. International training personnel must identify which stakeholders perceive urgent gaps relevant to their missions and activities [21]. In countries recovering from armed conflict, attempts to engage may be obstructed by chronic instability. An alternative strategy is to concentrate on countries which are, or are returning to, post-conflict situations [24]. Funding models described in the literature do not apply to the specificities of training health professionals in preparation for humanitarian operations in war contexts [23]. Stakeholder engagement to identify priority needs and resource-mobilisation strategies should remain the priority.

Curriculum Integration within Existing Medical Education

Health professionals tend to hold tacit notions of 'war, conflict, crisis, or disaster' that seldom enter conversations about education and professional development [19]. Students sometimes demonstrate similar naïve understanding. Nevertheless, over the past decades health professionals have consistently reported on the urgent need for training that equips them to practice, contribute and make a difference to the well-being of individuals and communities in complex and extended crisis environments [25]. Absorbing this experience and the humanitarianism underpinning much of it several national and international consortia of educators, researchers and policymakers active in higher medical education have proposed sets of competencies essential for health professionals working effectively in crisis environments [26]. In both multidisciplinary workshops globally and national university-specific workshops in 2021, participants from diverse backgrounds and specialties identified these competencies, while also designing strategies to foster them early in the education continuum and throughout the careers of aspiring and experienced health professionals[23]. Two curricular entry points emerged most frequently. A proportion of students in large, inclusive, multidisciplinary undergraduate and entry-to-practice programmes are exposed to the principles of caring for people under professional duress. These already document regional or systematic gaps many health disciplines notice in the early experience of their students [27].

Evaluation Frameworks and Outcome Metrics

A Training Evaluation Framework tailored to health professional training programs in war settings offers a structured yet flexible methodology for evaluation planning, enabling practitioners to determine desired results, appropriate measurements, and data collection strategies according to specific contexts [28-35]. Key Performance Indicators (KPIs) should encompass Health Systems Strengthening, Knowledge and Competencies, Skills Utilization, and Health Improvements. Information about participant perceptions, training delivery details, barriers encountered, usage of learned skills, and observed changes in service delivery or health outcomes should also be routinely collected [27].

Challenges, Gaps, and Future Directions

Realistic training sessions often require scarce materials and equipment impossible to bring back from conflict areas. As a result, some institutions have developed inexpensive manikin simulators from easily sourced, low-cost items such as foam rubber, paper, and plastic containers [36-39]. Others have built simulators capable of significant improvisation, enabling flexible scenario settings to train adaptable practitioner ability and foster decision-making under uncertainty [28]. Adapting widely used, small-scale models to comply with local safety constraints supports low-cost, readily available overview awareness sessions. Framing discussions around curricular competency fosters collaborative exchange concerning the poorest countries' specific needs, compulsory provisions for wide-area delivery, and fundamental political anchor fixes critical to official proposals' acceptance [29].

CONCLUSION

Health professional training for war settings is essential to equip healthcare providers with the knowledge, skills, and judgment necessary to deliver safe and effective care in conflict-affected environments. Competency-based approaches, including simulation exercises, field rotations, and interprofessional education, allow trainees to develop practical, context-specific expertise while addressing clinical, ethical, and psychosocial challenges. Ensuring safety, legal protections, and cultural competence further supports the ability of health professionals to operate effectively under duress. Integrating war-context training into medical education and establishing robust evaluation frameworks enhances preparedness and service quality. Future efforts should focus on overcoming resource constraints, standardizing core competencies, and fostering sustainable, locally adapted training programs to strengthen humanitarian response and improve health outcomes for populations affected by armed conflict.

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CITE AS: Ngugi Mwaura J. (2026). Health Professional Training for War Settings. IDOSR JOURNAL OF APPLIED SCIENCES 11(1):26-34. https://doi.org/10.59298/IDOSRJAS/2026/1112634