

Bridging the Chemical, Biological, Radiological, and Nuclear (CBRN) and HAZardous MATerials (HAZMAT) Medical Preparedness Gap: the ICRC's Strategic Capacity Building Initiative*

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Introduction

In the ever-evolving landscape of modern conflict and emergent hazards, there is a clear need for Chemical, Biological, Radiological, and Nuclear (CBRN) and HAZardous MATerials (HAZMAT) preparedness. This article explores the nuanced landscape of such hazards through a humanitarian prism. The International Committee of the Red Cross (ICRC) fosters national and local capacities through strategic planning, equipment donations, procedural development and comprehensive training. This article discusses some of the intricacies of capacity building, emphasizing the need for adaptable, context-specific training at the right time, especially in the medical domain.

The relevance of CBRN/HAZMAT preparedness

CBRN/HAZMAT incidents may arise in conflicts through deliberate use or as collateral damage to critical infrastructure, such as chemical pipelines or nuclear power plants.

Concurrently, accidental HAZMAT releases, such as those involving toxic industrial chemicals (TICs), present substantial risks to both environment and population. The repercussions of safety lapses in industrial settings during conflicts (e.g., from staff absences, water or electricity cuts) compounded by routine maintenance challenges, further amplify these risks. A natural hazard can also have devastating consequences, as was seen in Fukushima in 2011.

The hazards disproportionately affect communities already facing adversity due to conflict, rendering particularly marginalized groups more vulnerable. In response, the ICRC strives to comprehend and navigate the intricacies of these challenges by recognizing the underlying complexities and addressing them accordingly.

The question of assistance

In contemplating the aftermath of CBRN and HAZMAT incidents, whether borne of conflict or natural disasters, a resolute med-

ical response is indispensable. Loye and Copuland's pertinent inquiry from 2007 is just as timely today: "Who will assist the victims of use of nuclear, radiological, biological or chemical weapons – and how?"¹ Emergency response personnel hold the key to mitigating the impact of CBRN/HAZMAT exposures and provide life-saving care, but often do not have the needed resources or training for such response to affected communities in conflict areas. An unprepared response will result in problems of cross-contamination and secondary contamination with injured healthcare workers, poor outcomes for the affected population, environmental impact, and potentially long-term disruption of essential services and humanitarian assistance.

The International Committee of the Red Cross (ICRC)

The ICRC is an independent humanitarian organization dedicated to protecting the lives and dignity of people affected by armed conflict and other situations of violence. As part of its mandate, the ICRC has the expertise to identify and evaluate the consequences of explosive weapons, as well as CBRN and HAZMAT hazards. The ICRC has already provided assistance in several armed conflicts where CBRN agents were used or allegedly used¹. On each occasion, it is a challenge both to ensure staff safety and operational continuity when bringing assistance and protection services to the affected populations. Rather than substituting emergency response services, the ICRC collaborates with national and local authorities to enhance

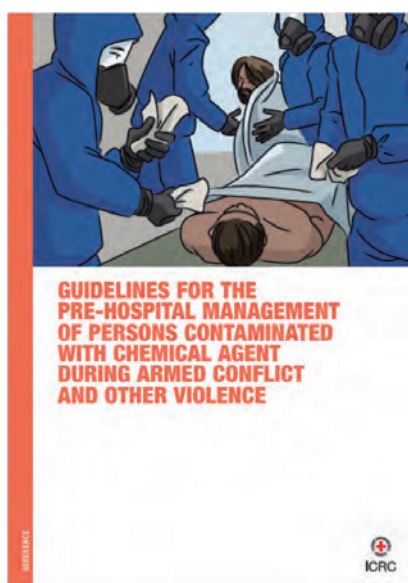
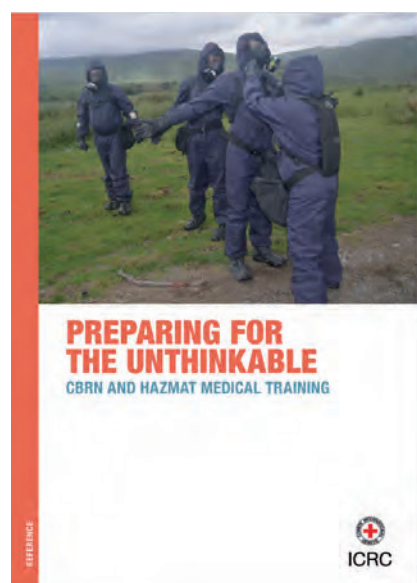


Figure 1: Guidelines can be downloaded from here: shop.icrc.org/preparing-for-the-unthinkable-cbrn-and-hazmat-medical-training-en-pdf.html

¹ Loye D, Coupland R. Who will assist the victims of use of nuclear, radiological, biological or chemical weapons – and how? *International Review of the Red Cross*. 2007;89(866):329-344. doi:10.1017/S1816383107001166



Figure 2: From training course in Ukraine. Photo: L. Robert/ICRC.

their response capabilities. This involves strategic planning, equipment donations, and comprehensive training programs. The emphasis is on facilitating sustainable, locally tailored responses to CBRN/HAZMAT incidents, acknowledging the intricate political, legal, and logistical challenges inherent in such interventions.

Capacity building

A spectrum of CBRN/HAZMAT hazards necessitates a comprehensive response capability. Decontamination training, a cornerstone of such preparedness, can be complemented by a medical add-on com-

ponent for healthcare workers and first aiders. The training program is designed as a versatile package, necessitating customization to align with the specific nuances of the local context. This adaptation is crucial, considering the diverse array of hazards, variations in healthcare systems, and disparities in resource levels across different regions. However, the challenge lies in securing sufficient preparatory time at the destination, and an adequate level of engagement to address central challenges such as the lack of, or an insufficiently coordinated emergency response system. The biggest constraint is however being prepared in time, as support is often requested

when there is a need for immediate response rather than preparedness. At such times access constraints and delays in procurement of needed equipment compound the problem of program delivery, as well as the availability of emergency responders for the capacity building activities. As the acute conflict transitions into a protracted conflict, this can change.

Competent instructors with technical proficiency, situational awareness, and diplomatic skills are required for timely adaption of the material. Their work is supported by a pack of material for the instructors which includes presentations and two course handbooks. Both are open-access to further support the capacity building efforts: "Guidelines for the Pre-Hospital Management of Persons Contaminated with Chemical Agent during Armed Conflict and Other Violence" and "Preparing for the Unthinkable; CBRN and HAZMAT Medical Training"². As an example, in Ukraine, ICRC engaged with various actors to address a potential need for emergency decontamination. Prior to the full-scale invasion of Ukraine in 2022, work had already started with the State Emergency Services of Ukraine (SESU) to improve its preparedness for industrial emergencies in the Luhansk oblast. Such capacity building activities has increased since then, providing emergency decontamination training and equipment to SESU and one hospital in Zaporizhzhia and identifying several potential recipients in other critical oblasts for further support.

Conclusion

A robust local medical response capability is indispensable to mitigate the multifaceted impact of CBRN/HAZMAT incidents. Many communities in conflict areas do not have services with capabilities to respond to such incidents, and this article describes some of the challenges and opportunities for capacity building. There is a critical importance of anticipating needs before crises emerge, emphasizing the timely capacity building of local emergency services as the backbone of effective CBRN/HAZMAT medical preparedness.

² ICRC, Preparing for the Unthinkable; CBRN and HAZMAT Medical Training, ICRC, Geneva, 2023: <https://www.icrc.org/en/publication/4713-preparing-unthinkable-cbrn-and-hazmat-medical-training>

* This article reflects the views of the author alone and not necessarily that/those of the ICRC.



Figure 3: From training course in Ukraine. Photo: L. Robert/ICRC.