

Strengthening Collaboration to Build Operational Pathways for Reconstructive Care in Conflict Settings

Highlight



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Group Reporting & Next Steps

Open discussion & Q&A

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Introduction

Why?

In conflict-affected settings, saving lives is only the first step. Access to reconstructive surgery is essential to restore function, dignity, and social participation for survivors of severe injuries, blast wounds, and extensive burns. Modern warfare generates complex, long-term injuries resulting from explosions caused by air or drone strikes and shelling. These injuries place an overwhelming burden on frontline healthcare systems, creating critical gaps in surgical capacity and delaying essential interventions such as debridement, amputation, and tissue reconstruction.

Several examples illustrate the scale of reconstructive and rehabilitation needs in contemporary conflicts. Researchers from Duke University, Guy's and St. Thomas' NHS Foundation Trust in London, and Al Shifa Hospital in Gaza estimated that, as of May 2025, approximately 116,000 people had been injured in Gaza, with up to 46,000 requiring reconstructive surgery. In Ukraine, estimates suggest that more than 50,000 war survivors require specialized reconstructive surgery. Broader rehabilitation data indicate that approximately 300,000 people have been registered with physical disabilities resulting from war-related injuries, highlighting not only the immediate surgical burden but also the long-term need for prosthetics, rehabilitation, and comprehensive support to help survivors regain function and reintegrate into society.

Despite these immense needs, access to reconstructive surgical care remains extremely limited in many conflict-affected countries. Managing these patients requires a complex and coordinated continuum of care, spanning early identification and emergency treatment, surgical intervention, prosthetic provision, rehabilitation, long-term follow-up, and sustainable financing.

A wide range of actors, including humanitarian organizations, healthcare professionals, local health systems, and donors, are involved across this continuum. However, these efforts are often fragmented, limiting their overall impact and leaving critical gaps in patient care.

Integrating reconstructive care into emergency and post-conflict health strategies is therefore crucial. This includes training first responders, establishing referral networks to specialized centres, and strengthening local surgical capacity.

This workshop aims to:

- Develop a shared understanding of the stakeholders involved in the reconstructive surgery care pathway in wartime settings.
- Identify complementarities and opportunities for collaboration among medical organizations, clinical experts, humanitarian actors, donors and stakeholders from the diplomatic and policy communities to strengthen access to reconstructive care.
- Develop concrete strategies for establishing an integrated and coordinated care pathway.

Following four presentations by professionals involved in reconstructive surgery, participants will explore three key themes through an interactive workshop:

- Surgical Care - "How can we deliver safe and effective surgical care in conflict settings?". Facilitator: Rahul Koti, Chief Surgeon, International Committee of the Red Cross.
- Rehabilitation and Non-Surgical - Care "How can we sustainably support patients beyond surgery?". Facilitator: Erica Bleakley, Technical Officer, Emergency Medical Teams, World Health Organization
- Data and Research - "How can we generate and use reliable data to improve outcomes in conflict settings?". Facilitator: Olivia Keiser, Head of Infectious Diseases and Mathematical Modelling, Institute of Global Health, University of Geneva.

Why and what have changed in modern conflict and new weapons?

Roba Khundkar

Plastic and Reconstructive Surgeon, University of Sheffield and Founder of the Global Anaesthesia, Surgical and Obstetric Collaboration



Roba Khundkar presents an analysis of the major developments in modern conflicts and their implications for the medical care of the wounded.

She explains that contemporary conflicts are increasingly taking place in densely populated urban environments, exposing civilians to trauma patterns previously seen mainly among military personnel. Advances in emergency medicine now enable more lives to be saved, but they also result in a significant increase in survivors living with complex injuries and long-term disabilities. Consequently, the burden of conflict is shifting from mortality to long-term morbidity and disability.

Roba Khundkar also highlights the changing nature of warfare, particularly the increased use of improvised explosive devices (IEDs), and drones, which cause complex fragmentation injuries that are especially challenging to treat. These weapons frequently result in multiple traumatic injuries, particularly to the limbs, which account for approximately half of all civilian injuries in conflict settings.

In this context, she emphasizes the essential role of reconstructive plastic surgery, working in close collaboration with orthopedics and vascular surgeons. She underscores the importance of early multidisciplinary assessment to determine as quickly as possible whether limb salvage is feasible or whether amputation is the most appropriate option, thereby optimizing rehabilitation and minimizing long-term complications.

She illustrates this approach with a clinical case involving severe lower-limb trauma managed through debridement, bone stabilization, and reconstruction using a vascularized muscle and skin flap. She notes that such treatment, which would have been impossible only a few decades ago, now enables surgeons to salvage limbs that would previously have required amputation.

Finally, she addresses the situation in Gaza, where a large number of patients present with severe extremity injuries, amputations, and chronic infectious complications, resulting from inadequate initial care. Current estimates suggest that between 29,000 and 46,000 patients require complex reconstructive procedures. She concludes by emphasizing the need to integrate plastic and reconstructive surgeons into emergency medical teams from the earliest stages of conflict response in order to reduce long-term disability and improve the quality of life of survivors.

How can access to surgery be facilitated inside and outside Gaza?

Mahmoud Matar

Surgeon Al-Shifa Hospital | Gaza, Palestine



Dr. Mahmoud Matar, a surgeon at Al-Shifa Hospital, presents an analysis of the surgical situation in Gaza and the challenges of accessing specialized care in the context of the ongoing conflict.

He begins by describing the significant technical and logistical constraints affecting communication, reflecting the broader conditions under which the healthcare system is operating. Drawing on his extensive experience in reconstructive

limb surgery in Gaza, he emphasizes the exceptional severity of the current situation.

Dr. Matar describes a healthcare system that has been severely weakened by the conflict, characterized by an overwhelming number of injuries, critical shortages of healthcare personnel, medical equipment, and functional infrastructure. He notes that only a few hospitals, notably Nasser Hospital, Al-Aqsa Hospital, and, to a lesser extent, Al-Shifa Hospital, remain operational despite extensive damage and repeated attacks.

He also reports the loss of healthcare workers, including the deaths and arrests of several surgeons, and the resulting reduction in surgical capacity. This situation is further exacerbated by the isolation of the healthcare system, which limits collaboration with the international medical community and access to external expertise.

From an epidemiological perspective, Dr. Matar presents data from a census of injured patients. He estimates that the number of injured people is in the tens of thousands, a substantial proportion of whom require complex reconstructive surgical. However, many patients remain unregistered because of limited internet access and unreliable means of communication.

Based on the available data, approximately 2,200 patients were assessed, of whom 611 require major limb reconstruction due to extensive bone loss, complex fractures, or chronic infections such as osteomyelitis. He notes that these patients include a significant number of women and children.

Dr. Matar highlights the complexity of the care pathway, with many patients requiring multiple staged surgical procedures, substantially increasing the overall surgical workload. He also points to regional disparities, with variations in injury severity and uneven distribution of medical teams across hospitals in Gaza.

He further emphasized the absence of a functional microbiology laboratory as a major challenge. As a result, clinical teams are often forced to rely on empirical antimicrobial treatment, complicating the management of bone infections and delaying definitive reconstructive procedures.

Dr. Matar concludes by underscoring the immense need for reconstructive surgery and the urgent necessity of improving access to specialized care, both within Gaza and through referral pathways outside the territory, in order to address this unprecedented health crisis and prevent long-term disability for thousands of patients.

Integrated War Trauma Care in Ukraine: The Superhumans Model

Andriy Vilensky

Medical Director, Superhumans Center; Advisor to the Minister of Health of Ukraine

Andriy Vilensky, Medical Director of the Superhumans Center, shares his experience in the management of war trauma and reconstructive surgery in Ukraine within a charitable organization funded entirely through national and international donations.

He explains that the Superhumans Center operates as a multidisciplinary institution dedicated to the comprehensive care of war-wounded patients, providing surgical care, rehabilitation, prosthetic services, psychological support, and social reintegration.

The organization has established several centres in western and eastern Ukraine and continues to expand its capacity through the opening of new facilities.

Dr. Vilensky describes the pattern of conflict-related injuries, which are predominantly blast-related, with a high prevalence of lower-limb trauma and a significant proportion of severe thoracic injuries. Most patients are young soldiers presenting with complex polytrauma requiring highly specialized and repeated interventions.

He also highlights the growing prevalence of multidrug-resistant bacterial infections among war casualties in Ukraine as a major clinical challenge. Antibiotic resistance delays wound healing, increases the complexity of treatment, and frequently necessitates multiple surgical procedures.



To address these challenges, the Superhumans Center has implemented an orthoplastic and microsurgical model of care, integrating orthopedic and reconstructive plastic surgery. To date, more than 3,000 prostheses have been fitted and over 1,500 reconstructive procedures have been performed, primarily involving limb and facial reconstruction. This model has helped address the initial shortage of microsurgical expertise within the Ukrainian healthcare system.

Dr. Vilensky emphasizes the importance of centralizing care within a single specialized facility, enabling close coordination between surgical teams, rehabilitation specialists, prosthetists, and mental health professionals. He also describes the benefits of rapid evacuation from the front lines to the specialized centres, which has significantly reduced waiting times, infection rates, and the number of surgical procedures required.

By comparing different models of care, he demonstrates that shorter evacuation times are associated with improved functional outcomes, fewer operations per patient, and shorter hospital stays. He illustrates these findings with clinical cases in which limbs that would previously have required amputation were successfully salvaged.

Dr. Vilensky concluded by highlighting the key lessons learned from the war in Ukraine: the importance of early orthoplastic intervention, the centralization of specialized services, and the integration of all disciplines within a single centre to reduce complications and improve patients' quality of life.

Field experience from Tigray and Sudan

Amanuel Tebeke

Reconstructive Surgeon, 2nd Chance, Ethiopia

Amanuel Tebeke shares insights from his experience working in conflict settings, particularly in Tigray, Sudan, and during international humanitarian missions.

He described his training in reconstructive surgery, supported by 2nd Chance, and his subsequent clinical work in regions affected by armed conflict and severe resource constraints. He initially treated war-wounded patients in Ethiopia before participating in humanitarian missions with the International Committee of the Red Cross in the Middle East.



Drawing on these experiences, he observes that trauma systems in conflict settings are primarily designed to save lives and manage acute emergencies. While this approach has substantially reduced mortality, it often overlooks the long-term functional consequences of injuries. According to Dr. Tebeke, many nerve, tendon, and soft tissue injuries are not diagnosed or treated early enough, resulting in preventable permanent disabilities. He emphasizes that this is not due to individual clinical errors but rather reflects the composition of deployed surgical teams, which are often staffed predominantly by general surgeons. Patients with severe burns, complex limb injuries, or chronic infections such as osteomyelitis are particularly affected by these limitations.

Dr. Tebeke stresses that war injuries extend far beyond fractures. He explains that even when a fracture is correctly stabilized, a patient may still be left with permanent paralysis if associated nerve or tendon injuries are not identified and repaired in a timely manner. Once the optimal treatment window has passed, some reconstructive procedures are no longer possible.

Drawing on data from multiple conflict settings, he notes that the majority of patients admitted to field hospitals present with complex extremity injuries. He therefore advocates for an integrated orthoplastic approach that combines orthopedic and reconstructive surgery from the acute phase of care onward, improving functional outcomes while reducing long-term healthcare costs.

In conclusion, Dr. Tebeke calls on policymakers, donors, and governments to rethink current models of war surgery by integrating reconstructive expertise into emergency surgical teams. According to him, saving a patient's life is only the first step; the ultimate objective should also be to preserve function, independence, and the long-term socioeconomic well-being of survivors.

How can we deliver safe and effective surgical care in conflict settings?

The discussions highlighted the need to recognize reconstructive surgery as an essential component of war-trauma care. Participants structured their deliberations around six themes.

1. What are the main gaps in the surgical care pathway in conflict settings?

Participants highlighted the absence of a truly integrated trauma care system in conflict settings. Unlike military or civilian systems in high-income countries, there is no standardized trauma registry or systematic data collection. Patient referral and transfer pathways are often fragmented, while prolonged conflicts place additional strain on already fragile health systems. The gaps identified include limited coordination, a shortage of skilled human resources, inadequate infrastructure, and the absence of structured patient follow-up.

2. How can reconstructive surgery be integrated into the acute phase of care?

A strong consensus emerged on the need to integrate reconstructive surgery expertise from the earliest stages of patient management. Injuries sustained in modern conflicts predominantly affect the limbs and often involve complex tissue loss, requiring early decisions regarding limb salvage versus amputation. Participants emphasized that decisions made during the initial days of care directly influence future reconstructive options. Consequently, reconstructive

surgery expertise should be integrated into emergency surgical teams to improve limb salvage rates, long-term functional outcomes, and patients' quality of life.

3. How can coordination and governance among stakeholders be improved?

Discussions highlighted the wide range of stakeholders involved, including ministries of health, military organizations, NGOs, universities, and hospitals. While this diversity is a significant asset, it also creates coordination challenges. Participants proposed establishing multidisciplinary teams comprising reconstructive surgeons, trauma specialists, anesthesiologists, nurses, rehabilitation specialists, administrators, logisticians, and public health experts. These teams could operate either on-site or remotely, supported by clearly defined coordination mechanisms. Governance should remain locally led, with national health authorities playing a central role.

4. How can a seamless patient pathway be ensured, from injury to rehabilitation?

Care cannot be limited to surgical procedure alone. Participants emphasized the importance of the entire



continuum of care, including triage, timely transfer to appropriate facilities, perioperative management, rehabilitation, and long-term follow-up. Many adverse outcomes result from breakdowns at different points along this continuum. The goal must be to ensure that every patient receives the right treatment, in the right place, and at the right time. Achieving this requires clear referral pathways, adequate logistical capacity, and stronger coordination among civilian, military, and humanitarian health systems.

5. How can local capacity be strengthened sustainably?

Strengthening local capacity was identified as a key priority. In many conflict settings, access to international surgical teams remains limited or intermittent. It is therefore essential to equip local healthcare professionals with the knowledge and skills required for reconstructive surgery and the management of complex wounds. Participants placed particular emphasis on the importance of debridement, identifying it as a core surgical competency. Continuing professional education, simulation-based training, academic partnerships, and the development of locally led research were proposed as sustainable approaches to building expertise that is adapted to the

needs of the affected populations.

6. How can the necessary human, technical, and financial resources be mobilized?

Finally, discussions highlighted the challenges involved in recruiting and mobilizing experienced reconstructive surgeons for humanitarian missions. Professional, institutional, and financial constraints can limit their availability. Several potential solutions were proposed, including dedicated funding mechanisms, greater support from public and academic institutions, the creation of expert networks that can be rapidly deployed, and stronger involvement from international professional societies. Beyond equipment and financial resources, participants emphasized that the availability and quality of skilled human resources remain the fundamental prerequisites for delivering effective reconstructive care in conflict settings.

Overall, the discussions point toward an integrated vision of reconstructive surgery that combines early intervention, multidisciplinary coordination, local capacity building, and continuous quality improvement. These elements provide the foundation for a more resilient, sustainable, and equitable model to address the growing needs of populations affected by armed conflict.

Recommendations

1. Deploy multidisciplinary teams dedicated to trauma care and reconstructive surgery.

Effective care for war-wounded patients requires the mobilization of both clinical and non-clinical expertise. These multidisciplinary teams should include reconstructive surgeons, trauma specialists, anesthesiologists, rehabilitation specialists, nurses, logisticians, administrators, and public health experts. Depending on the context, they may be deployed on-site or provide remote support through virtual consultation platforms.

2. Structure care pathways and strengthen logistical coordination.

Improving reconstructive outcomes depends on a well-organized continuum of care. This requires establishing clear referral and evacuation pathways, identifying appropriate referral centres and strengthening coordination among all stakeholders. The goal is to ensure that every patient receives the appropriate level of care, at the right place and at the right time, throughout the entire care pathway, from emergency treatment to reconstructive surgery, rehabilitation and long-term follow-up.

3. Invest sustainably in local capacity building.

Strengthening local capacity is essential to ensuring continuity of care in conflict settings. Participants emphasized the importance of training healthcare professionals, supporting applied research, developing international academic partnerships, and actively engaging ministries of health. Developing local expertise strengthens the resilience of health systems, enhancing their capacity to respond effectively to future crises.

Together, these three pillars—multidisciplinary coordination, well-structured care pathways, and sustainable local capacity building—provide the foundation for an integrated approach to improving access to high-quality reconstructive care for populations affected by armed conflict.

How can we support patients sustainably beyond surgery?

The discussions highlighted the importance of a approach that integrates long-term follow-up, rehabilitation, psychosocial support, local capacity building, and equitable access to care. This collective reflection identified several challenges and strategic recommendations for establishing sustainable care pathways adapted to the realities of humanitarian settings.

1. How can long-term patient follow-up be ensured after surgery?

A key conclusion of the round-table discussion was that the success of reconstructive surgery depends not only on the operation itself but, above all, on the ability to provide long-term follow-up. In conflict settings, many patients are lost to follow-up after hospital discharge because of insecurity, or lack of support. Participants emphasized the need to develop community-based follow-up mechanisms involving social workers, case managers, and community health workers. The goal is to detect complications early, facilitate follow-up consultations, and ensure that patients do not face treatable problems in isolation. Long-term follow-up was therefore recognized as a critical component of the continuum of care and an essential determinant of successful surgical outcomes.

2. How can we go beyond surgery to reconstruct the whole person?

Discussions highlighted that an approach focused solely on physical reconstruction is insufficient. War injuries affect every aspect of a person's life, including

autonomy, identity, family relationships, and social participation. Participants advocated for a holistic approach that integrates nutritional support, pain management, mental healthcare, the management of co-morbidities, and social support. Reconstructing a limb or a face alone does not guarantee a return to a fulfilling life. Care should therefore be conceived as a comprehensive continuum that supports patients throughout every stage and dimension of their recovery.

3. How can mental health and psychosocial support be integrated into the heart of care?

Psychosocial issues were a recurring theme throughout the discussions. Participants noted that physical trauma is often accompanied by significant psychological distress, including anxiety, depression, trauma-related disorders, or loss of self-confidence. Visible injuries can also lead to social withdrawal and difficulties in resuming a normal life. From this perspective, psychosocial support should not be viewed as an optional component but as an essential element of comprehensive care. The involvement of psychologists,



social workers, and appropriate support systems is vital to helping patients reintegrate into their families, communities, and workplaces.

4. How can sustainable healthcare systems tailored to local realities be built?

Finally, discussions highlighted the need to frame interventions within a long-term perspective. Reconstructive care is often costly and resource-intensive; however, participants emphasized that early, comprehensive management can prevent greater human and economic costs in the future. This approach also requires fostering local ownership by involving affected communities in the design and implementation of programs. Interventions must be adapted to the cultural, social, and institutional contexts of each country. Sustainability therefore depends on achieving a balance between specialized expertise, long-term investment, community engagement, and local capacity building.

5. How can stigma be combated and equitable access to care ensured?

Another major theme concerned the social and cultural barriers that limit access to care. In some contexts, war-wounded individuals, veterans, or people associated with a party to the conflict may hesitate to seek care in health facilities due to fear of being identified, discriminated against, or stigmatized. Participants emphasized the importance of creating services that are safe, inclusive, and built on trust. Respect for the principles of international humanitarian law, non-discrimination, and patient protection must

remain central priorities. Combating stigma also requires addressing perceptions of disability: care should promote autonomy and social participation rather than reinforce negative stereotypes.

6. How can multidisciplinary skills suited to conflict settings be developed?

The round-table discussion highlighted the frequent shortage of specialized skills in conflict-affected settings. Reconstructive surgery requires not only qualified surgeons but also nurses, physiotherapists, occupational therapists, psychologists, and pain management specialists capable of providing pre- and post-operative care. Participants underscored the importance of training, skills transfer, and the strategic sharing of tasks between specialists and non-specialists. Strengthening local capacity is essential to ensuring sustainable access to care and reducing reliance on external assistance.

7. Conclusion

Beyond the technical aspects of reconstructive surgery, the round-table discussion highlighted the need for a holistic approach to conflict-related injuries. Participants emphasized the importance of long-term follow-up, rehabilitation, psychosocial support, stigma reduction, skills development, and ensuring that interventions are grounded in local contexts. The goal extends beyond treating injuries to enabling affected individuals to regain autonomy, dignity and achieve full participation in their communities.

Recommendations

1. Establish structured long-term follow-up mechanisms for injured patients

Long-term follow-up is essential to ensuring sustainable surgical outcomes. This requires structured case management systems that support continuity of care and facilitate early detection of complications.

2. Develop multidisciplinary care pathways integrating rehabilitation, mental health, and social support

Patient recovery requires a multidisciplinary approach that integrates rehabilitation, pain management, psychosocial support, and social services to promote long-term autonomy and well-being.

3. Strengthen local capacity through training and skills transfer

Strengthening local capacity through training and skills transfer is essential to improving the continuity and quality of care while reducing dependence on external support.

4. Ensure safe, non-discriminatory access to care tailored to vulnerable populations

Programs must be grounded in the principles of international humanitarian law, promote disability-inclusive approaches, and take local cultural and social realities into account to ensure equitable access to care.

How can we generate and use reliable data to improve impact in conflict settings?

The discussions highlighted the need to recognize reconstructive surgery as an essential component of war-trauma care, rather than as a secondary intervention. Participants structured their deliberations around six key questions.

1. Why do reconstructive surgery needs remain poorly understood in conflict settings?

Despite the scale of injuries and long-term consequences caused by armed conflicts, the need for reconstructive surgery remains significantly underestimated and insufficiently documented. Health systems operating in conflict settings understandably prioritize emergency care and the immediate survival of injured patients, leaving limited capacity to systematically document complications, disabilities, and long-term reconstructive needs. As a result, important gaps remain in understanding the true burden of unmet reconstructive care needs among affected populations.

2. Which populations and needs are most often overlooked?

Existing data rarely capture the experiences of the most vulnerable groups, including civilians, displaced populations, people living in rural or isolated areas, and patients who cross borders to access care. Individuals who survive their initial injuries but do not receive appropriate reconstructive treatment are particularly underrepresented in available statistics,

contributing to a substantial underestimation of the overall need for reconstructive services.

3. What data sources are available, and what are their limitations?

Potential sources of information include military medical systems, hospitals, ministries of health, humanitarian organizations, universities, and research institutions. However, no single source provides a comprehensive picture of the situation. Military datasets may be relatively structured but often fail to reflect civilian realities; hospital records capture only patients who successfully reach healthcare facilities; and humanitarian organizations typically collect data limited to their own programs. This fragmentation remains a major obstacle to accurately assessing reconstructive surgery needs.

4. What are the major knowledge gaps?

Participants highlighted the frequent absence of baseline data needed to assess the true impact of conflict on surgical needs. Information on preventable deaths, disabilities that could have been avoided



through earlier surgical intervention or rehabilitation, and long-term patient outcomes is often lacking. Existing information systems tend to focus primarily on acute care while providing limited insight into functional recovery, and social reintegration.

5. How can the quality, reliability, and acceptability of data be ensured?

Data collection in conflict settings presents significant challenges related to completeness, bias, confidentiality, and the protection of affected populations. Trust is a critical issue, particularly when data collection is associated with state or military actors. Participants emphasized that a multi-stakeholder approach involving health authorities, healthcare providers, humanitarian organizations, academic institutions, and local communities is essential to strengthen both the credibility and legitimacy of collected data.

6. How can data support planning and improvements in care?

Research and data collection should ultimately

generate knowledge that is directly relevant to action. Data should help estimate the number of patients requiring reconstructive surgery, identify the most common injury patterns, locate areas with limited access to care, and assess long-term treatment outcomes. Such information is essential for service planning, resource allocation, health system strengthening, and advocacy efforts.

7. What priorities should guide future research and monitoring efforts?

Participants agreed that data collection should begin as early as possible during a conflict and continue throughout both the conflict and post-conflict phases. Information systems should move beyond hospital-based data alone and seek to identify individuals who never access healthcare services. Above all, data collection should contribute to improving patient pathways, referral mechanisms, rehabilitation services, and long-term care. Equity should remain a guiding principle to ensure that the most vulnerable and least visible populations are adequately represented in future research and monitoring initiatives.

Recommendations

1. Increase the visibility of reconstructive surgery needs in conflict and post-conflict settings

Participants highlighted that the need for reconstructive surgery remains significantly under-documented, particularly among civilian and displaced populations, as well as people living in rural or hard-to-reach areas. A better understanding of the scale and nature of these needs is a prerequisite for effective service planning and more appropriate resource allocation.

2. Foster a coordinated, multisectoral approach to data generation

Currently, no single actor has a comprehensive overview of the situation. Discussions underscored the importance of strengthening collaboration among health facilities, public authorities, humanitarian organizations, academic institutions, and other stakeholders to improve the coherence, complementarity, and credibility of available data.

3. Ensure ethical and inclusive approaches built on community trust

Data collection and use in conflict settings must be grounded in principles of confidentiality, informed consent, and the protection of individuals. Discussions also highlighted the importance of deliberately including less visible populations in information systems to reduce existing biases and better reflect the diversity of needs.

4. Develop a minimum data set for reconstructive surgery patients based on care pathway mapping

Building on this workshop's findings regarding fragmented and incomplete data sources, a standardized minimum data set should be developed to capture essential information on injury patterns, treatments received, unmet reconstructive needs, complications, disability, and follow-up outcomes. Once informed by care pathway mapping, the minimum data set should be piloted in selected hospitals and partner organizations, in collaboration with academic institutions and local health authorities. This process would generate practical evidence to support service planning, advocacy, and future scale-up.

Key Messages

7 Key Messages

1. Reconstructive surgery is an essential component of conflict trauma care and must be integrated throughout the continuum of care.
2. The objective of care extends beyond survival to the preservation of function, autonomy, and quality of life.
3. Early involvement of reconstructive surgery expertise improves long-term outcomes and reduces disability.
4. Modern conflicts generate complex injuries that require coordinated, multidisciplinary, and long-term management.
5. Recovery depends on integrated care pathways linking surgery, rehabilitation, mental health support, and social reintegration.
6. Continuity of care, including long-term follow-up, is critical to achieving sustainable patient outcomes.
7. Strengthening local capacities is fundamental to building resilient and sustainable health systems in crisis-affected settings.
8. Effective responses require collaboration among humanitarian organizations, health authorities, academic institutions, and local healthcare providers.
9. Reliable, ethical, and patient-centred data are essential for understanding needs, improving care, and informing decision-making.
10. All patients affected by conflict must have access to safe, inclusive, and non-discriminatory care, with particular attention to vulnerable populations.

Action Points

- **Sustain the network and connect it to the WHO ECO (Integrated emergency, critical & operative care) agenda.** Establish a shared mailing list of all workshop participants and other relevant stakeholders to create a network for collaboration and information sharing on reconstructive surgery. In parallel, share the workshop report with WHO's Acute Care Action Network (ACAN) to support the implementation of Resolution WHA76.2 and ensure reconstructive surgery is appropriately represented within its "operative care" component.
- **Create a rapidly mobilizable roster of reconstructive surgeons and multidisciplinary experts** (including surgery, rehabilitation, anaesthesia, and mental health specialists) available for humanitarian missions, in partnership with international professional societies and surgeons trained through 2nd Chance.
- **Strengthen capacity building through debridement training.** Identify an initial cohort of surgeons already working in conflict settings and provide targeted training on debridement, which was repeatedly identified as a critical skill. A first training initiative could be organized by 2nd Chance in 2027. Explore the possibility of co-developing an accredited online debridement module with SFITS (Swiss Foundation for Innovation and Training in Surgery, Geneva), drawing on its existing e-learning resources.
- **Pilot an integrated care pathway within an existing deployment.** Embed reconstructive expertise into at least one existing emergency surgical deployment (for example with the ICRC), applying current ICRC and WHO EMT frameworks for decision-making on limb salvage, amputation, and debridement. Documenting limb salvage rates and functional outcomes would contribute to building the evidence base required for broader adoption.
- **Define a minimum data set.** Develop a minimum data set informed by a comprehensive characterization of the patient care pathway. Mapping this pathway will identify delays, gaps in care, and loss to follow-up, thereby providing the evidence needed to inform the design of the data set.
- **Document the injuries caused by drones and emerging weapons.** Together with existing clinical partners in Gaza and Ukraine, conduct an initial descriptive analysis of the injury patterns associated with drones and other emerging weapons. Understanding how these mechanisms differ from those observed in previous conflicts is essential to adapting surgical practices, anticipating future needs, and informing training materials and clinical protocols. Methodological support could be provided by the Institute of Global Health at the University of Geneva.



The Geneva Health Forum is a non-profit initiative launched in 2006 by Geneva University Hospitals and the University of Geneva. It provides a neutral platform for dialogue and collaboration between public stakeholders, academia, civil society, and the private sector.

It collaborates with its partners to create synergies to address public health challenges.



2nd Chance is a Swiss humanitarian NGO dedicated to supporting vulnerable populations. It backs projects in emergency aid, education, health, and social integration, aiming to offer new opportunities and foster the long-term autonomy of communities.



Contact GHF :

contact@genevahealthforum.com

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