

# Journal of Conventional Weapons Destruction

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Volume 22  
Issue 2 *The Journal of Conventional Weapons  
Destruction Issue 22.2*

Article 4

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August 2018

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### Recommended Citation

Frontières, Médecins Sans (2018) "Shattered Lives and Bodies: Recovery of Survivors of Improvised Explosive Devices and Explosive Remnants of War in Northeast Syria," *Journal of Conventional Weapons Destruction*: Vol. 22 : Iss. 2 , Article 4.

Available at: <https://commons.lib.jmu.edu/cisr-journal/vol22/iss2/4>

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# Shattered Lives and Bodies: Recovery of Survivors of Improvised Explosive Devices and Explosive Remnants of War in Northeast Syria

by Médecins Sans Frontières (MSF)

In northeast Syria, fighting, airstrikes, and artillery shelling have led to the displacement of hundreds of thousands of civilians from the cities of Deir ez-Zor and Raqqa, as well as rural areas along the eastern bank of the Euphrates River. Now that active fighting has moved toward the Syrian-Iraqi border, the population is beginning to return home. However, explosive remnants of war (ERW), improvised explosive devices (IED), and booby traps (remaining from conflict or planted purposefully in homes) continue to put the returning population at immense risk and further obstruct vital humanitarian access.

From November 2017 to May 2018, Médecins Sans Frontières (MSF) treated more than 150 patients injured by ERW and IEDs, nearly one patient every day. There was a peak of 39 cases in December and 41 in January, correlating with the return of populations from displacement camps in the region. Seventy-five percent of those patients came from the Deir ez-Zor governorate, mostly from Abu Hamam and Dhiban in Mayadin district but also from Hajin in Abu Kamal district. Half of the patients were children. The victims were those with the means or necessary support to survive the journey's various obstacles and checkpoints. The 60 minutes after a traumatic injury (sometimes referred to as the golden hour) is a window of time in which the patient is thought to have the greatest chance of survival provided they receive adequate medical attention. One of the major issues for the context of Deir ez-Zor is the increasing difficulty to provide care within this timeframe, as medical assistance and the most basic health services are currently widely restricted across the governorate. An MSF surgeon explained that, "*Only those patients with less severe prognoses manage to come to us, the rest die.*"

Nizar, 14-years-old, was riding a motorcycle in Deir ez-Zor with his friend Hayyan.<sup>1</sup> Near Al-Mayadin bridge, some

children were playing when one of them took an object from the ground and threw it. They did not know it was a mine. It exploded immediately. Two of the children died. "I felt nothing," said Nizar, but he was bleeding profusely and had a fractured leg, shrapnel throughout his body, and multiple cuts. His uncle, Khalif, explained what happened: "We took the boy to Hakel Alomar camp, but there was no medical point there so we went to Dhiban hospital. Health services there were not functioning properly either with only two nurses. They needed gauzes, which I had to buy myself for 1,500 SYP in a pharmacy. After that we tried in Bussera, where a doctor put him on an IV. In Shadade they could not treat him because they lacked capacity to deal with that kind of injury. In another medical structure they refused to treat him because our car plate was from Deir ez-Zor. We went to another camp then, where they cleaned the wounds, wrapped the injury in some bandages and requested an ambulance that finally brought us here to the hospital."

For the victims and their relatives, reaching the health structure is only the first stage of a longer journey toward a complex and uncertain recovery. If a patient survives, they will need long rehabilitation, physical therapy, and psychosocial support. Some will suffer lifelong consequences requiring specific support.

Patients usually arrive at the MSF-supported facility by ambulances or in private cars, sometimes having already been stabilized at a field or private hospital, usually where basic care is provided before referring the patient to another facility. Often, the treatment in those facilities is insufficient due to limited surgical and wound-management capacity, and a lack of postoperative care or appropriate infection control measures. Moreover, availability of equipment, capacity, or conflicting priorities also limit their services and level of attention given to the patients.

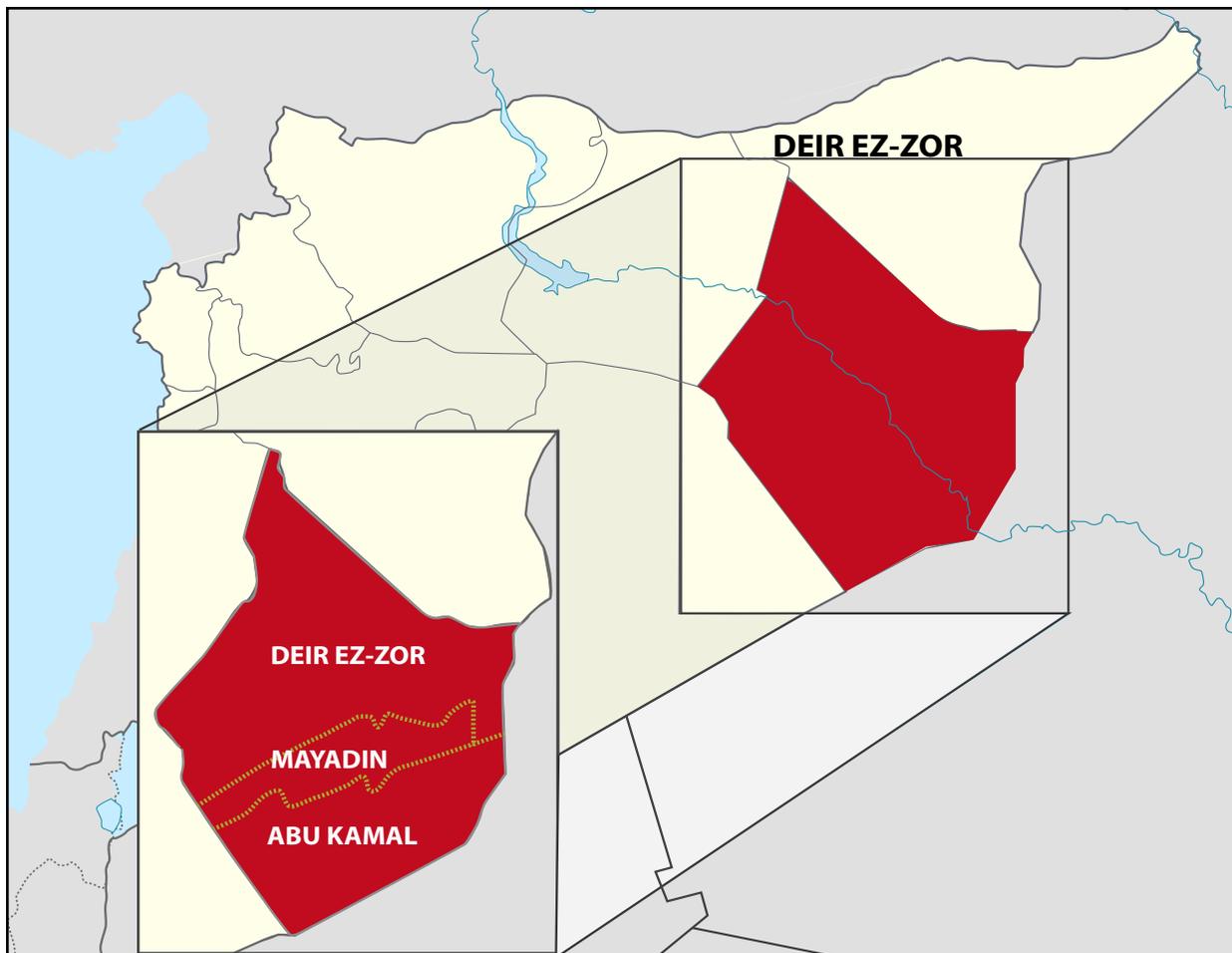


Figure 1. Deir ez-Zor.  
Figure courtesy of MSF.

“Ayla was going to fetch water from the river with my daughter and other children. She then stepped on a land-mine. ‘My foot! My foot! My foot!’ they told me she screamed. Bleeding, crying... It was terrible for her. She didn’t faint, so she was fully aware of everything and is now worried that she will not be able to walk again, that her friends have two feet and she will not have one anymore.” At the time of the interview, Ayla was receiving treatment in the intensive care unit and about to enter the operating theatre for an amputation of her leg at the knee. According to the MSF surgeon, if the tourniquet that initially was applied had been removed earlier, it would have been possible to save more of her limb.

Patients are then directly admitted to triage and the emergency room, where their status is assessed according to the severity of trauma they suffer. Green for minor injuries, yellow for semi-critical injuries, and red for severe and immediately life-threatening injuries. One percent of patients receive red status, which usually means multiple traumas, as is often the case with explosion-related injuries. The first steps are to

control any hemorrhaging, keep the patients still if they have open fractures, and provide blood transfusions to compensate for the loss of blood, which poses further challenges in conflict zones because of the shortage of available blood. It is a very resource-demanding process, as it takes significant time and personnel, especially when several people have been wounded in the same explosion.

Everyone is involved, from doctors and nurses to laboratory specialists, surgeons, and anesthetists. Special equipment is also needed such as tourniquets to stop the bleeding and splints for broken bones. The surgical team then assess who will require surgery first and what is needed, as each case often requires multiple types of surgery depending on injuries: abdominal, shrapnel extraction, amputation, internal bleeding, or burns. Conservative surgery is performed when possible but in most cases amputation is decided from the onset for these types of wounds.

With ERW and IEDs, the pattern of injuries and devastation observed varies according to the type of device, the amount of

explosive, and the situation. Effects are always substantial considering the velocity of the projectiles, the accompanying high temperatures, and the extremely violent shocks. From a surgical point of view, there are usually three types of patterns observed with IED/ERW injuries, which are linked to how the incident happened.

Firstly, when a victim steps on a mine, this primarily affects the feet, perineum, scrotum, and waist. Secondly, when a victim is exposed to a fragmentation explosion such as a landmine or an anti-tank mine, different kinds of high velocity shrapnel may affect the body, often requiring intra-abdominal exploration for bowel injuries. Finally, when the victim picks up the explosive device, it can wound and maim fingers, hands, and arms as well as the head. This often happens with children who are naturally curious and tend to be more affected by this type of pattern. An MSF surgeon explains

*It takes a lot of time and a lot of patience. We are able to manage main injuries, but cannot do everything ideally required such as neurosurgery, advanced chest surgery, perforated eardrums or eye operations (although with shrapnel, eyes are often affected and end up being lost). There is a big gap in specialists. Often, you can save a patient with good post-operative management, with a full-fledged intensive care unit but in war zones it is often not possible. We do the maximum with the minimum.*

When patients affected by explosions come out of surgery and are moved into the inpatient department, there is always an initial chaos for a few minutes. Relatives are nervous and agitated, while patients, especially children, often find themselves in a state of shock. The violence, shock, and lack of understanding of what has happened to the patient produces a state of stupefaction. This is an emotional stupor in which the patient blocks everything to protect and distance themselves from their suffering, to the point that emotions seem almost absent. This contrasts with the chaotic atmosphere around them, which is disturbing to the patient who has no preparation or time to comprehend what happened to them or their limbs.

Post-surgery, the first phase of the treatment is ensuring proximity care, which means closely monitoring patients via the continuous presence of caretakers. This is when the understanding of what has happened begins to develop and when the patient's status is closely monitored to prevent complications, which can include the occurrence of phantom pain, a particularly difficult sensation generated by the remaining nerves of the severed limbs that continue to transmit information to the



Child survivor of improvised explosive devices and explosive remnants of war. Image courtesy of Louise Annaud/MSF.

body as if the limbs are still present. From time to time, juxtaposing a mirror in front of the stump as if the limb appears whole is used to alleviate suffering. Mirror therapy is simple but has positive effects in half of the cases.

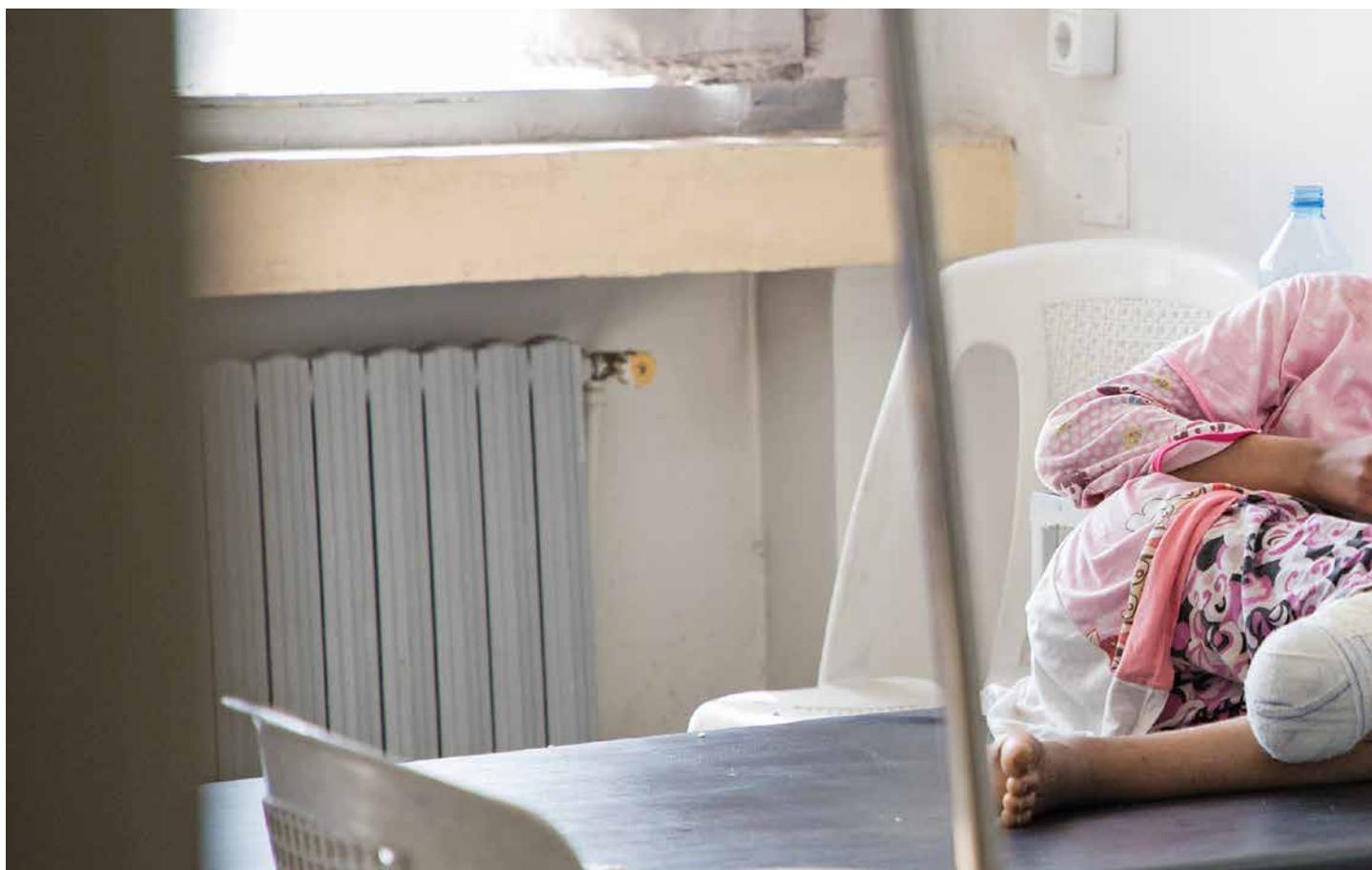
Pain management is generally a challenge in itself because it is not culturally accepted. We use several scales to understand the pain depending on the age and situation of the



patient. For children, we have faces that express the levels of pain (see Figure 2).

Patients are then transferred to a hospital ward to continue the healing process. Depending on the severity of the case, they return to the surgical block every two or three days for dressing changes. This is often accompanied by apprehension, as memories of the intervention and of the incident reemerge.

For others, dressing changes are made in the ward with a doctor. Caretakers are involved as early as possible in the patient's recovery and are crucial in preventing further complications such as phlebitis (when the veins become inflamed); skin retraction, which further impedes movement (when the skin is altered through the operation, it retracts in on itself and therefore limits movement); bleeding of the wounds; muscle



Child survivor of improvised explosive devices and explosive remnants of war.  
Image courtesy of Louise Annaud/MSF.

Items	Scoring		
	0	1	2
<b>Face</b>	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
<b>Legs</b>	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
<b>Activity</b>	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
<b>Cry</b>	No cry (awake or sleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
<b>Consolability</b>	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractible	Difficult to console or comfort

Figure 2. FLACC scale (Face, Limb, Activity, Cry, Consolability).  
Figure courtesy of MSF.

loss; and atrophy. They also help the patient with early rising. Following surgery, a patient is encouraged to move as soon as possible, which improves circulation and healing during the recovery period. The risk of additional infections is also very present because fragmentations can leave lots of shrapnel in the body. Whereas some shards will come out naturally, others will need further intervention.

The recovery process varies according to the wounds. For instance, abdominal wounds can have greater consequences on diet, food absorption, and also bed rest, more so than with limbs. It often means a long healing period because the wounds are easily soiled by the content of the bowels. At the same time, although orthopedics is much cleaner than abdominal surgery, it has an extremely long rehabilitation and



hospitalization period with long-term effects. If the surgical intervention has not taken the orthopedic aspect sufficiently into consideration and failed to create a clean flap to close the stump and allow for a prosthetic to be put in place in the future, the patient's best chances of resuming movement are sharply reduced.

Little information is available about the levels of ERW and IEDs in Deir ez-Zor. However, the number of patients treated and the stories they tell suggests a dramatic situation requiring an urgent need for a comprehensive mine response. This includes risk education, victim assistance, and mine clearance in order to avoid more preventable deaths, injuries, and psychological trauma. The situation is also very acute in Raqqa, where MSF treated close to 500 victims of ERW and IEDs over the same period of time, thanks to the better proximity of stabilization points prior to referrals. Along with the tremendous humanitarian impact these incidents are having on the population, the high levels of contamination are also hindering the arrival of much-needed humanitarian support. The scale of the contamination shows that a greater coordinated

effort is needed from the international community to fund, support, and facilitate demining and other mine action activities in Deir ez-Zor and Raqqa. ©

*See endnotes page 62*

*The author would like to thank colleagues for providing their experience and support in writing this article.*

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