Explosive Remnants of War – Lasting Harm in Deir Ez-Zor, Syria

© Asmar Al-Bahir/MSF.

© Asmar Al-Bahir/MSF.

The destruction in Deir Ez-Zor resulting from the war.

More than a year after the fall of the Assad government on 8 December 2024, the humanitarian situation in Syria remains challenging. Over 15.6 million people continue to require humanitarian assistance, as the consequences of 14 years of conflict, renewed instability, and prolonged neglect continue to shape daily life across the country. Civilian infrastructure has been severely weakened, with the healthcare system among the most affected sectors; MSF teams have consistently identified significant and recurrent gaps in both primary and secondary care. At the same time, explosive ordnance (EO) contamination remains one of the most serious protection risks facing civilians across Syria. Over the past year, as access has expanded, exposure to explosive ordnance has increased, especially in previously contested areas — many of which remain contaminated, unmarked, and unassessed.

One year after Médecins Sans Frontières/Doctors Without Borders (MSF) launched an intervention in support of the emergency room at Deir Ez-Zor National Hospital, this report presents an evidence-based analysis of the **direct and indirect impacts of explosive ordnance left behind after the conflict[1] in Deir Ez-Zor governorate**. Following December 2024, as front lines partially collapsed, population movements increased, and access to previously contested areas expanded, civilians' exposure to EO-related risks also increased exponentially. This report draws on MSF and the Directorate of Health (DoH) medical data from April 2025 to April 2026, as well as operational observations and interviews with patients, caretakers, and medical professionals involved in the provision of care. The report illustrates the human and health impacts of explosive ordnance contamination, identifies key barriers to accessing timely, comprehensive, and specialized care, and highlights the critical role of Mine Action (MA) actors in the governorate. Finally, it concludes with recommendations from MSF OCA to strengthen prevention and improve the medical and humanitarian response to EO in Deir Ez-Zor.

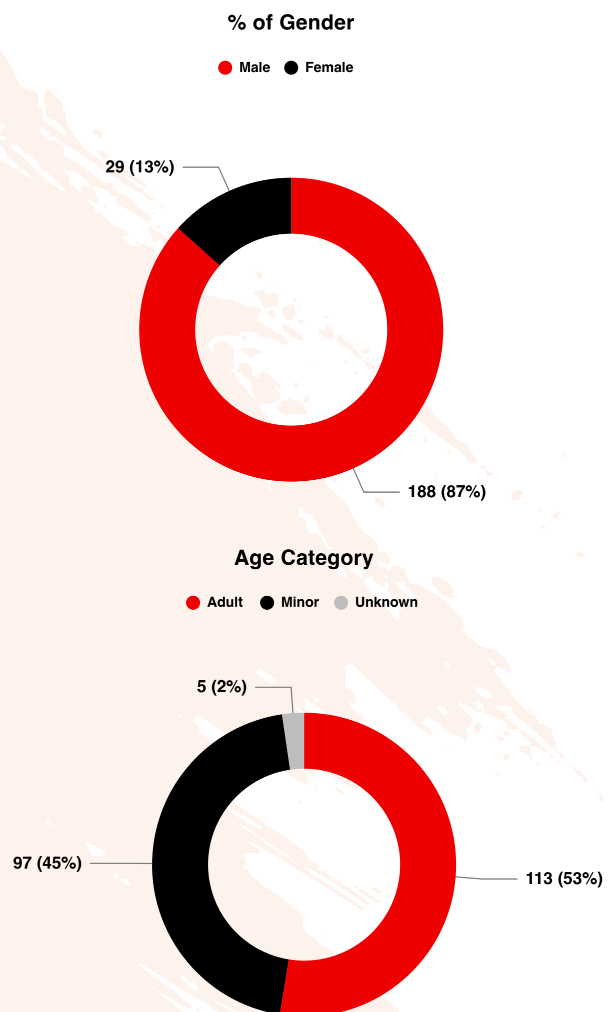
1 This analysis focuses on explosive hazards resulting from conflict contamination, including Explosive Remnants of War (ERW), landmines, and Improvised Explosive Devices (IED) that remain as remnants of war. It excludes IED incidents associated with active or targeted attacks. The term "explosive ordnance" will be used.

MSF Activities in Deir Ez-Zor

In Deir Ez-Zor, MSF began supporting the emergency department and related transversal departments at Deir Ez-Zor National Hospital in April 2025, in partnership with the DoH, with activities planned to continue until June 2026. The support includes the emergency room (ER) as well as laboratory, sterilization, infection prevention and control, and water, sanitation, and hygiene (WASH) services. MSF has rehabilitated the hospital's waste management zone, including by installing two incinerators and a new X-ray machine. In Al Bukamal city, the MSF team supports basic emergency obstetric and newborn care (BEmONC) while rehabilitating a polyclinic and its waste zone, which will provide comprehensive maternal and newborn care (CEmONC). In addition to medical activities, MSF has rehabilitated boreholes and water stations serving communities in the Deir Ez-Zor countryside.

Patients and Incidents: An Overview

Deir Ez-Zor National Hospital is the **primary facility providing emergency trauma care** in Deir Ez-Zor governorate and currently absorbs a significant share of patients injured by EO incidents from across the region. Through its daily presence in the hospital, MSF has directly witnessed the **deadly, widespread and indiscriminate impact** that explosive ordnance continues to have on the life and health of civilians. Between **7 April 2025 and 30 April 2026**, MSF and DoH teams in the ER of Deir Ez-Zor National Hospital provided emergency trauma care to **217 patients** injured by explosive ordnance, including unexploded and abandoned ordnance and landmines. **Children accounted for 45% (97) of all patients admitted**, and **87% (188)** were **male**. Although the risk from explosive ordnance remains indiscriminate and broadly affects the civilian population, these figures highlight the **severe impact on children**, who represent nearly half of all cases.



"It's tragic to see that children are disproportionately affected. They go out to play and, at any moment, they might lose a limb. Their life changes forever."

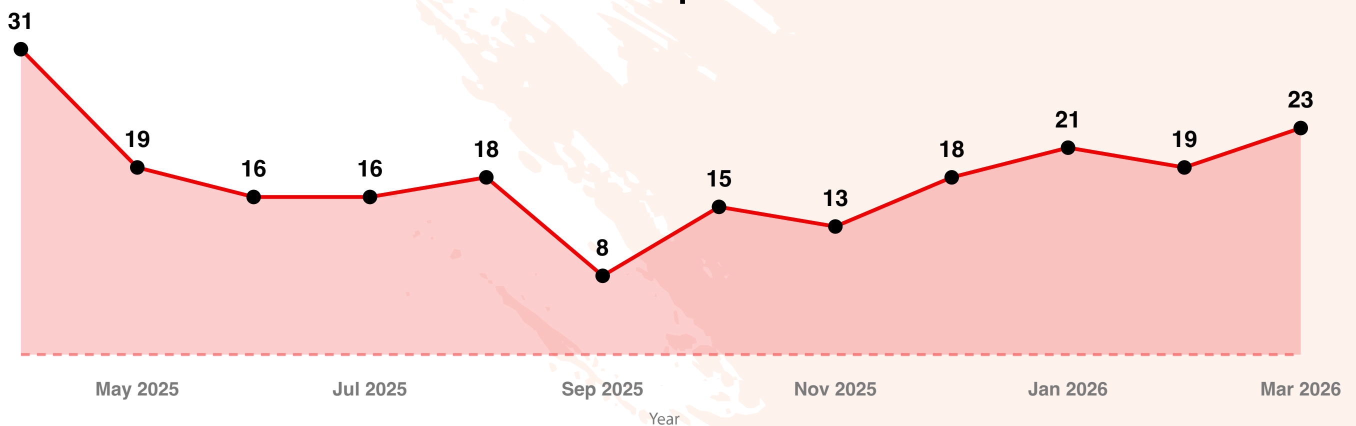
– Dr. Yaman Alsara, MSF Medical Doctor, Emergency Room

Male patients are disproportionately impacted, compared to female patients (13%), as incidents frequently occur while they **attempt to secure basic livelihoods — including through livestock grazing, agricultural activities or seasonal truffle gathering —** regular activities that frequently take place in heavily contaminated areas. Children are particularly exposed to these risks both while engaging in livelihood-related activities and while playing in open areas or in abandoned buildings. Where information on the circumstances of injury was available, MSF recorded that children were most commonly **injured while playin**g (46) and among both adults and children 70 patients were recorded as being injured during livelihood activities, including sheep herding (57) and truffle gathering (13).

.

A resident doctor at Deir Ez-Zor National Hospital highlights the economic drivers behind these risks: ***"The economic pressure is so high that some people knowingly take the risk of entering mined areas to graze their flocks or gather truffles,"*** says Dr. Waseem Awak, a resident doctor in the ER and orthopedic departments. ***"In some cases, we have been treating members of the same family."***

Admissions for explosive ordnance-related injuries have remained **relatively consistent over time**, mostly fluctuating between 15 to 20 cases per month, as shown in the chart below.



MSF staff at the National Hospital in Deir Ez-Zor.

© Asmar Al-Bahir/MSF.

© Asmar Al-Bahir/MSF.

Ali, 28, was injured after stepping on a landmine near the town of Subaykhan on 12 May 2025, resulting in the amputation of his left leg. He received emergency treatment in Al-Mayadin before undergoing surgery at the National Hospital in Deir Ez-Zor.

The month of **April recorded the highest number of cases** in both 2025 and 2026. MSF witnessed a peak at the very start of the intervention, in April 2025, when **31 patients were admitted in just 24 days**. This may be associated with population returns earlier in 2025, when formerly displaced people began returning to destroyed homes littered with explosive ordnance, against the backdrop of the change of power on 8 December 2024. April 2026 recorded the second-highest number of cases (23 patients), with incidents largely linked to the resumption of outdoor livelihood activities, including livestock grazing and seasonal truffle gathering. Over the course of the intervention, MSF documented several major incidents affecting three or more people. One such incident occurred in February 2026, when eight members of the same family were injured by a landmine on a road. Most of the casualties were children, two of whom died — the youngest was only 45 days old. In total, **77 patients were injured in single-casualty incidents, while 60 of the admitted patients were involved in major incidents affecting three or more people.**

Despite some reduction in immediate risk due to increased awareness and clearance, **Deir Ez-Zor remains one of the most heavily contaminated governorates in Syria** and continues to record high number of incidents related to war remnants. International NGO Safety Organisation (INSO) data[1] show 227 incidents in Deir Ez-Zor alone since December 2024, out of 1,208 nationwide. Several areas remain heavily contaminated, including Al-Merei'iye near the former military airport, Al-Badia in the southwest desert, and the Seven Villages area between Geneina and Tabya east of the Euphrates. Following the March–April 2026 floods, landmines have reportedly shifted, increasing risks as previously identified hazardous locations can no longer be relied upon. In urban centers such as Al Bukamal and Hajin, unexploded ordnance remains widespread in abandoned and damaged houses, exposing returnees to persistent and often invisible danger.

Similar issues are also reported across other areas in the country. For instance, around 32 villages in Ein Issa subdistrict are reported to be full of explosives, especially around the former front lines, which poses a risk to the population returning. According to an MSF assessment, Ein Issa Hospital reportedly receives EO-related injuries each day, with extremely limited emergency care capacity.

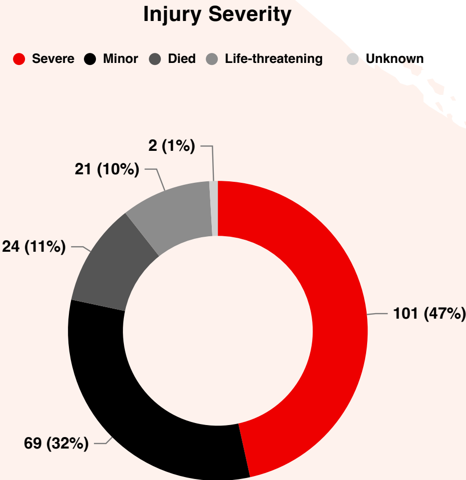
1 Data shared by Syria Mine Action Area of Responsibility, as of May 1 2026

The National Hospital in Deir Ez-Zor.

© Asmar Al-Bahir/MSF.

Patterns and severity of explosive ordnance-related injuries

EO-related incidents result in **immediate physical and psychological harm** and frequently cause injuries that permanently affect **survivors' mobility, functional capacity, ability to work, and carry out daily tasks**. During one year of intervention, **24 patients (12%) died after being injured** by EO; **122 patients (57%) presented with severe or life-threatening injuries; and** in **69 cases** **(32%)**, injuries were reported to be **minor**.



The severity and types of injuries vary depending on the type of explosive ordnance. **Landmines** predominantly affect **lower limbs**, often causing extensive soft tissue damage, including degloving and fractures. **Unexploded and abandoned ordnance** (**UXO/AXO**) usually causes fragmentation and blast injuries **affecting multiple body parts**, commonly involving the upper limbs, face, chest, and abdomen. According to MSF data, **53% of the admitted patients were injured by UXO/AXOs and 37% were injured by landmines**, while the type of explosive ordnance could not be determined in 10% of cases.

Mohammed, a 23-year-old from Hawiqa in Deir Ez-Zor city, was injured by a landmine in June 2025 while he was working his land. He does not recall the incident. Memory loss is common in such incidents. Survivors may experience **partial or complete amnesia surrounding the event**, which can be temporary or persist for years, particularly in the absence of mental health support.

© Asmar Al-Bahir/MSF.

Abdulrazzaq, 12, was injured by an explosion while herding sheep in Deir Ez-Zor countryside.

Traumatic amputation

During the one-year period of MSF support, **58 patients (27%)** who were treated for explosive ordnance-related injuries at Deir Ez-Zor National Hospital **underwent traumatic amputations.** Of these, **43 patients lost one limb, 14 lost two limbs,** and **one patient** had an **arm, a leg and a foot amputated.** Amputations most frequently involved lower limbs, with **27%** of amputees losing **one or both legs. Hands were affected in 24%** of cases, **arms in 15%**, while **23% involved finger or toe** amputations and **11% affected the foot or feet**. According to Dr. Rajab, landmine explosions most often result in lower limb amputations, whereas amputations of fingers, hands, and arms are more commonly associated with UXOs. In some cases, explosive ordnance causes **severe multi-trauma affecting the entire body**, in which limb amputation is not a viable lifesaving option and injuries **can be fatal**.

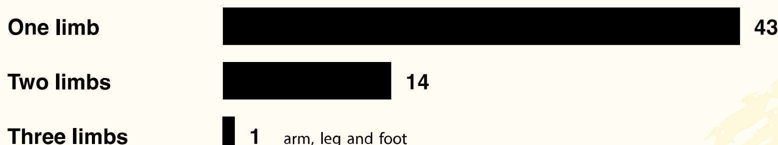
Beyond the immediate physical consequences, amputations have devastating long-term effects on survivors, their families, and healthcare providers. Abdulrazaq, a teenage boy from Hawaji, 50 kilometers southeast of Deir Ez-Zor city, lost his right leg and part of his left foot while herding sheep in the desert. ***"I feel sad now, because I can't run anymore,"*** he says.

Mohammad was displaced from Deir Ez-Zor during the conflict and worked as a chef before returning to the city, where he then took up delivery work and resumed farming his family's land. Following his injury and the amputation of both his legs above the knees, he was forced to stop working and now spends most of his time at home. ***"Everything has changed,"*** he says. ***"I used to wake up early and work all day, then go out with my friends every evening. Now I can only stay home. My family and I had to move to a new house on the ground floor, as our own house was no longer accessible for me."***

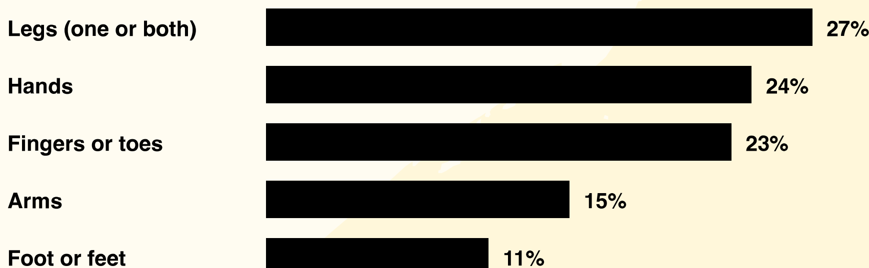
The psychological and social impact of amputations is profound, particularly among children. Andalib Moutlak, emergency room nurse supervisor, recalls the case of a child who died several months after losing his leg: ***"He spent the last months of his life in sadness and despair because he could not play with his friends anymore. There is a strong stigma around amputations, especially when the victim is a child. Many stop going to school; they feel ashamed and schools are often not equipped to support their needs."***

Amputations also take a heavy emotional toll on healthcare workers: ***"We see children losing their legs and fingers because of war remnants,"*** says Dr. Yaman Alsara, MSF emergency room doctor. ***"When we realize that amputation is the only way for the patient, it deeply affects the whole team."***

NUMBER OF LIMBS AMPUTATED



BODY REGION AFFECTED · SHARE OF AMPUTEES



Obstacles to accessing care

Access to care for patients with EO-related injuries in Deir Ez-Zor governorate remains limited and compromised by multiple, compounding barriers that affect patients throughout the continuum of care — from emergency trauma care and surgery to post-operative follow-up and rehabilitation.

Deir Ez-Zor National Hospital remains the main trauma referral facility in the governorate and receives patients from across the Euphrates River and the Badia or desert area. Patients admitted to the ER often come from **remote areas**, including Al Bukamal, located 130 kilometers from Deir Ez-Zor city. This underscores the limited availability of emergency trauma care outside the city. A few patients who can afford it seek initial stabilization in private facilities before being referred to Deir Ez-Zor National Hospital. Most patients **(179, or 82%)** reached the hospital **by private transportation**, such as cars and motorbikes, while only 35 **(16%)** arrived **by ambulance**. Although the ambulance system has improved over the past year, its **capacity remains insufficient**, particularly for emergencies occurring in remote areas.

"Patients coming from the eastern side of the river and who get injured at night might have to wait until the next morning to come to the hospital, because the dirt bridge is not always fully functional after dark."

– Dr. Alsara, MSF emergency room doctor

As a result, the **provision of lifesaving care is often delayed, increasing the risks of complications** and death. Severe bleeding remains a major risk, as caretakers often lack basic knowledge on how to transport patients with open fractures. While some basic first aid measures, such as tourniquets, have occasionally been applied, **uncontrolled blood loss has led to fatalities**. Delays within the emergency room can also be critical, particularly at night, when staffing constraints limit the facility's ability to respond to major incidents.

Beyond the limited emergency response capacity and the challenges related to geographical distance and transportation, a major **gap persists in the management of multi-trauma cases**, which require coordinated, multidisciplinary care. Over the past year, MSF collaborated with the DoH to support ER staff with training, establishing a triage system, and improving the flow of patients. However, gaps persist. Limited inter-departmental consultation, including between the ER, general surgery, orthopedic surgery, and other relevant departments, can lead to inaccurate or delayed diagnoses and sub-optimal clinical responses, sometimes with fatal consequences. **Shortages in human resources** limit such a response, in particular the absence of a dedicated specialist to coordinate multi-departmental responses to multi-trauma cases. There are currently only 20 emergency medicine specialists nationwide; none of them are in Deir Ez-Zor.

The **orthopedic department**, which receives the majority of patients injured by explosive ordnance, is particularly **overstretched**. "Resident doctors do very long shifts of up to 18 hours and may perform eight or nine surgeries a day, although their capacity is three to four," says Dr. Ammar Rajab, head of the orthopedic department at Deir Ez-Zor National Hospital. "By the last surgeries, exhaustion increases the risk of mistakes." The limited number of rooms and beds, shortages of medical supplies, and the intermittent availability of an anesthesiologist further constrain surgical capacity. As a result, patients are often **discharged early** with pain medication.

Explosive remnants of war in Deir Ez-Zor.

© Asmar Al-Bahir/MSF

As of May 2026, complex cases requiring specialized surgery continue to be referred to private hospitals or to Damascus, approximately 500 kilometers away. **Some specialized care remains unavailable anywhere in the country**. Following a landmine explosion, Mohammad required inner ear surgery and a corneal transplant in his right eye; neither service has been accessible within Syria, leaving him with severely impaired hearing and vision.

Access to **post-operative and follow-up care is also significantly constrained**. Distance, transport costs, and reduced mobility discourage many patients, especially those living far from Deir Ez-Zor city, from returning to Deir Ez-Zor National Hospital for follow-up, particularly after minor surgeries. As a result, some seek care in nearby private facilities, while those unable to afford this often rely on pharmacies or change dressings at home without professional supervision, increasing the risk of infections. In some areas, **primary healthcare centers remain partially functional** or non-functional, further limiting options for safe follow-up care.

Victim assistance gaps

Beyond emergency trauma and surgical care, **comprehensive victim assistance** for people injured by explosive ordnance should include **physical rehabilitation**, including **prosthetics and orthotics; mental health support; and socio-economic inclusion,** as well as **protection and legal assistance**. Despite the high burden of war-related and post-conflict injuries in Deir Ez-Zor governorate, such extensive and targeted support remains **largely absent**. As a result, survivors are left to cope with the long-term consequences of their injuries, placing a heavy and sustained burden on their families and primary caretakers.

Physical rehabilitation is currently **limited to physiotherapy**, and the whole department relies on technicians who are struggling to cope with the high number of patients — an estimated 200 per week. **Free prosthetic and orthotic services have never been available in Deir Ez-Zor**, despite the scale of needs. As of May 2026, other humanitarian actors have initiated efforts to establish these services at Deir Ez-Zor National Hospital; however, the lack of technicians and professionals available to staff the department continues to delay operationalization. Each delay has significant consequences for survivors, many of whom have put their lives on hold while waiting for artificial limbs to regain mobility and functional independence.

"Losing my ability to move has been the greatest challenge so far. I know health comes from God, but if I had access to artificial limbs I could partially return to my old life, to work and support myself."

– Mohammad, patient

Similarly, while some protection actors have established safe spaces and support services for vulnerable groups, **dedicated socio-economic inclusion programs are largely absent**. Many survivors have lost their livelihoods because of their injury, leading to **long-term economic dependency** and **social exclusion**. Likewise, **specialized mental health and psychosocial support is largely unavailable**, despite their critical role in addressing trauma, stigma, and long-term psychological distress. The burden of long-term care therefore falls almost entirely on families. Mohammad, injured by a landmine, now relies entirely on relatives to carry out daily activities. His family, already affected by displacement and their return to a destroyed neighborhood lacking basic services, struggles to cover the cost of repeated medical referrals to Damascus.

"We are trying our best, but our best is not enough. Other actors must step in to ensure adequate rehabilitation and recovery support, particularly in this region of Syria."

– Anonymous MSF doctor

Mine action and humanitarian access

While the presence and activities of mine action actors in Deir Ez-Zor have scaled up, **current capacity remains insufficient** to address the scale and severity of explosive ordnance contamination. Entire areas remain heavily affected and, in some cases, completely inaccessible — not only to communities, but also to humanitarian organizations seeking to deliver assistance. In Deir Ez-Zor, MSF assessments and interventions, including in the waste zone of Deir Ez-Zor National Hospital, were delayed for an extended period due to contamination. MSF has also been witnessing this in other areas of operations. In Daraa governate in the south of Syria, humanitarian access to internally displaced people living in tented areas across the governorate has been limited due to the risk of contamination and the lack of clear and up-to-date mapping of contaminated areas, which exposes an already extremely vulnerable population to protection risks and limited humanitarian assistance.

MSF's operational experience confirms that mine action is a **critical enabler of humanitarian response**. Safe access to communities, health facilities, and essential infrastructure is often contingent on **survey, clearance and explosive ordnance disposal (EOD) activities**. In Deir Ez-Zor, MSF has relied on the support of three different mine action organizations to conduct surveys and EOD in two health facilities — including the waste zone at Deir Ez-Zor National Hospital and the compound of a CEmONC in Al Bukamal — enabling rehabilitation works to proceed safely and ensuring continued access to essential healthcare services.

Despite these efforts, few organizations are currently operational in the governorate, and **most activities are limited to non-technical surveys and explosive ordnance risk education (EORE)**, while EOD is mostly restricted to spot tasks, as existing capacities are insufficient to conduct systematic clearance. In addition, **unsafe explosive ordnance disposal** practices continue to pose a serious risk to civilians. MSF has recorded at least **18 patients injured during demining or clearance activities**, including one fatality and six patients who sustained one or more amputations. These incidents highlight the urgent need for mine action activities to be conducted in line with international safety standards, with adequate training, equipment, and oversight to prevent further harm.

Public infrastructure across the governorate remains contaminated. According to Abdullkarim Mohammed, sub-national mine action coordinator for Deir Ez-Zor, reports continue to be received of facilities that are in urgent need of mine action support, including at **water stations, water and sewage networks, health facilities, and schools**. While mine action actors are prioritizing spot tasks in schools, water pumping stations, and irrigation canals, explosive hazards continue to directly undermine access to healthcare, safe water, and other essential services across Deir Ez-Zor.

Chronic underfunding remains the main operational constraint for mine action organizations. One partner reported being forced to downsize and lay off specialized staff due to funding shortages. Insufficient funding also limits the procurement and use of **specialized equipment required for complex and large-scale clearance operations**. In addition, the lack of accessible emergency trauma care, particularly in remote areas, further constrains mine action activities and increases risks for demining personnel.

The National Hospital in Deir Ez-Zor.

© Asmar Al-Bahir/MSF.

Recommendations

On mine action:

1. **Increase and sustain funding for mine action organizations in Deir Ez-Zor** to improve and maintain their capacity for survey and clearance efforts across the governorate and respond to the high needs. Sustained support remains essential to ensure that **staff are trained and retained**, and to ensure the availability of **specialized equipment** required to conduct more complex demining operations.

2. **Strengthen prevention through increased risk education activities, including the systematic integration of explosive ordnance awareness into health programs and across other sectors** such as education and livelihood programs that target groups that are most at risk, including children and farmers. The need for clearly marking contaminated areas remains urgent to deter people from trying to access them.

3. **Ensure all mine action activities are conducted in line with international safety standards** — with adequate training, equipment, and oversight — to prevent injuries during demining and clearance.

4. **Enhance support and funding to strengthen and further develop the national mine action capacity through strengthened coordination between mine action organizations and national actors,** including the Syrian National Mine Action Center, to improve the safety, geographic coverage, and sustainability of mine action activities.

Recommendations

On victim assistance:

1. Urgently ensure that the newly established physical rehabilitation program at Deir Ez-Zor National Hospital is adequately staffed to start providing **free prosthetics and orthotics to patients in need and support the currently overstretched physiotherapy department.**

2. **Scale up assistance for specialized mental health and psychosocial support programs** for EO survivors and their families, with particular attention to children, amputees, and their caretakers.

3. **Develop targeted socio-economic inclusion and livelihood programs** for survivors who have lost their ability to work, in order to reduce long-term dependency and social exclusion.

4. **Strengthen general livelihood programs** in the governorate to reduce risk-taking behaviors driven by severe economic vulnerability.

The Orthopedic Surgery Department at the Deir Ez-Zor National Hospital.

© Asmar Al-Bahir/MSF.

Recommendations

On access to care:

1. **Restore and improve emergency trauma care capacity beyond Deir Ez-Zor city,** particularly in remote and hard-to-reach areas, to reduce delays in lifesaving care. This entails enhanced support to ERs in public hospitals and to pre-hospital care and referral systems, including ambulance coverage and basic first-aid capacity at the community level.

2. Strengthen the **capacity of Deir Ez-Zor National Hospital to manage severe, multi-trauma cases** by ensuring the presence of a dedicated emergency medicine specialist to coordinate multi-departmental response.

3. **Expand the surgical capacity of Deir Ez-Zor National Hospital, including through targeted support to the orthopedic department,** to increase bed capacity and to ensure the availability of medical supplies and increased staffing to adequately respond to the high caseload.

4. Ensure the continuity and quality of emergency care a tDeir Ez-Zor National Hospital through a **reliable and uninterrupted supply of essential medications and consumables.**

5. **Expand access to post-operative and follow-up care in peripheral and remote areas** by integrating such services into primary healthcare facilities where feasible.

Explosive remnants of war in Deir Ez-Zor.

© Asmar Al-Bahir/MSF.

MEDECINS
SANS FRONTIERES