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FROM THE INSIDE

October 7th 2023 attacks in Israel: frontline experience of a single tertiary center

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During Saturday, October 7th 2023, southern Israel experienced the largest terror attack in the history of the country, and one of the largest terror attacks in human history considering the number of casualties. By the end of the day, more than 1144 people were killed, 1600 were wounded and evacuated to hospitals and more than 239 were kidnapped to Gaza.

Soroka University Medical Center (SUMC), located in Beer-Sheva, Israel, is the only tertiary medical center in Southern Israel and operates the only level 1 trauma center in the region. The catchment area of SUMC covers approximately 60% of the area of Israel and about 1 million people. SUMC is located 40 km from the Gaza strip, and terrorist activity took place as close as 10 km from the medical center. SUMC has been in the forefront of medical care in all of Israel's wars in the south and has well established protocols for mass casualty incidents (MCI) and significant experience in applying them in emergency situations.

At 6:30 am, the war began with a barrage of rockets fired into Israel and simultaneous attacks by Hamas terrorists targeting civilian population in the area. The terrorists used attack rifles, grenades, rocket launchers and various forms of explosives causing associated penetrating and blast injuries. The burning down of civilians' homes led to many burn victims as well.

As air raid sirens started to blare, SUMC emergency response team convened to prepare the medical center for an attack, the magnitude of which was, at this point, unclear. Per protocol, departments located in unsheltered areas, under the risk of being hit by rockets, were moved to pre-assigned protected locations. The first casualty arrived at the Emergency Department (ED) at 7:37, and at 8 am an mass casualty incident (MCI) was declared, based on initial information from the area surrounding the Gaza strip. This announcement calls for the immediate arrival at the medical center of all critical clinical and ancillary staff in preparation for casualty arrival. By 9 am, there were hundreds of physicians and nurses on hand, and 59 casualties had already arrived.

By 1 pm, 281 casualties were brought in to the ED. They were evacuated by ambulances, private vehicles who had passed by, and a minority—by helicopters. During this time, 42 air raid sirens went off in Beer-Sheva, 18 of them for rockets expected to hit around SUMC. These rockets attacks halted triage of arriving casualties and highlighted the risk to the treating personnel and their families while they were at battle to save lives of casualties arriving from the attacked areas.

By 9 pm, the number of casualties treated at SUMC was 572, rising to 626 by midnight and to 676 in the first 24 h. During this period, 120 patients who were critically wounded were cared for in our trauma unit. Ninety-six surgeries were performed and 200 blood units were transfused as additional blood supplies were rushed to SUMC. Two-hundred and nine patients required hospital admission due to their injuries. Details of casualty arrival rate are depicted in Figure 1.

Among 676 casualties treated during the first day, 34 were under the age of 16 years (5%) and 26 were over 65 years (4%). The wounds were classified as severe in 136 (20%), moderate in 131 (19%) and minor in 409 (61%). Four patients were pronounced dead on arrival and two died during treatment in the trauma unit. The number of casualties treated that day was more than quadruple the largest number ever treated before in the same time period.

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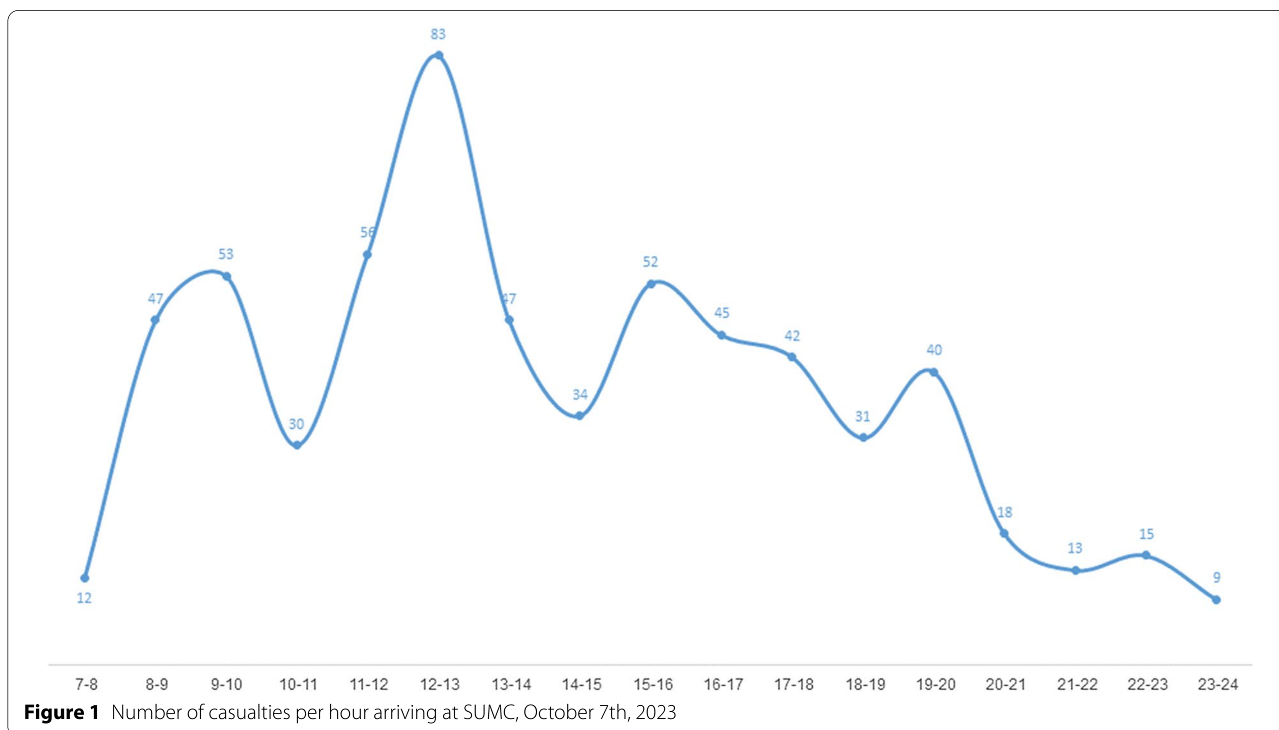

Figure 1 Number of casualties per hour arriving at SUMC, October 7th, 2023

During the critical initial hours, in order to increase capacity, we doubled the number of treatment bays in our trauma unit, to treat 12 casualties simultaneously, instead of the six routinely available. To address the need for admission beds, a designated 8-bed intensive care unit was opened, and a 40-bed internal medicine ward was transformed into an acute surgical ward. Surgical capacity was increased by using operating theaters in our obstetrics and gynecology and other procedure rooms in the medical center for emergency surgeries. We discharged 190 patients to their homes in order to make room for incoming casualties. We also requested assistance of medical personnel from other medical centers and received help from 28 nurses and 18 physicians by 6 pm.

In order to address the increased need for computed tomography (CT) scans, we utilized two additional scanners in the medical center—the CT simulator used for radiotherapy planning and the CT part of our positron emission tomography–computed tomography (PET-CT). These two scanners are located in sheltered areas and can be used during rocket attacks. The CT scanner in the ED performed 132 scans during the first day of the war, all for seriously wounded casualties, and the additional CTs performed 55 scans, for a total of 187 scans.

As the events of the day unfolded and the public became aware of the large number of victims and missing people, the medical center became inundated with families looking for their loved ones. An information center for the public was opened, providing for these needs both in person and by phone, based on the staff of our social workers. During the coming days, this effort was shifted to government agencies.

At 9 pm, as the flow of casualties ebbed to about 15–20 patients per hour, the focus shifted to the patients admitted earlier in the day without definitive treatment. In the coming eight hours, 80 casualties were sent to hospitals in other areas of the country for continuing treatment. This took place in 20 ambulances and 5 helicopters. During the next few days, 50 additional patients were transferred to other hospitals, to make room for the possibility of more casualties arriving to SUMC.

During the following week, SUMC replenished its depleted supplies, purchased much needed medical equipment to increase capacity and be optimally prepared for what might come and planned for staffing future events. Care for the hospital staff takes many forms. Firstly, caring for the many staff members and families who were directly affected by the deadly events of October 7th, including the death or kidnapping of staff members or of close relatives. Day care facilities were opened on day 2 of the war, caring for hundreds of staff's children, a service without which the parents could not attend to their life-saving duties.

Supportive care is also provided to the caregivers and first responders who cared for the endless flow of casualties on October 7th.

On the morning of October 7th, 2023, SUMC faced the largest MCI in the country's history. While under direct rocket fire, 680 casualties were treated within the first 24 h, with a large percent of severe wounds requiring emergency surgery. Key elements in the management of this event were: (1) early, independent, mobilization, (2) simultaneous action to protect other patients, (3) increasing capacity for imaging, surgery and hospitalization (4) recruitment of external staffing, and (5) secondary transfer of many patients for definitive care in other medical centers.

We believe that key lessons learned during this MCI can serve for planning and preparedness of other medical centers.

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Declaration

Conflict of interest
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