

Israeli Attacks on Health Care Personnel in Gaza; Immediate and Long-Term Impact on The Future of Palestine Gaza Health System in Context

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It has long been recognised that the health predicament in which Palestinians have been placed is inexcusable.¹ The health-care systems in Gaza were already struggling with demand, with a total of 3412 beds catering to a population exceeding 2.1 million people.²

The Israeli air strikes have displaced more than 80% of the population, leaving them with limited access to healthcare, food, water and other essential services. The few remaining hospitals in Gaza can only offer limited maternity, trauma and emergency care services and the humanitarian need is catastrophic.

Since 2007, Israel has placed Gaza under siege, with the

movement of people and goods being heavily restricted. This has rendered the training of medical personnel by international standards virtually impossible. Yet it is recognised internationally that the health workforce is an integral part of the health system, and no health service can be delivered, no person cared for, and no health outcome achieved without properly trained people.³

Such highly skilled people take years to train⁴ and a lifetime to educate.⁵ There is no formal approved training programme for reconstructive plastic surgery and burn care in Palestine – either in the West Bank or Gaza. Plastic surgeons play various roles in trauma centres, such as in the management of facial injuries and hand

injuries, performing limb-saving free tissue transfers, managing burns and complex wound reconstruction with flaps or skin grafts⁶ and are involved in 40% of military trauma cases.⁷

Although this branch of surgery manages many conditions other than trauma (especially cancer and congenital deformity reconstruction), the persistent conflicts around Gaza has led to a preponderance of war related conditions which require skilled and specialised plastic surgical attention. This has been recognised by the Ministry of Health as well as the Palestinian Medical Council. Access to training opportunities outside Palestine, and Gaza particularly, have been severely limited and constrained the ability for Gaza to build capacity in this much needed area of surgical expertise. In this context, a group was convened in 2018 by the charitable organisation Medical Aid for Palestinians (MAP) from UK plastic surgeons to support local Gazan surgeons in a funded programme to build training capacity for plastic surgery. The international faculty consisted of the three Chairs of the British Foundation of International Reconstructive Surgery and Training (BFIRST), the Specialty Advisory Committee (SAC) in Plastic Surgery for the Joint Committee of Surgical Training in the UK, and Medical Aid for Palestinians, and also a recent Vice President of the Royal College of Surgeons of England (from 2020-23 the Chair of the RCSEng Global Committee). The local faculty in Gaza included the Director of Plastic Surgery for Al Shifa Hospital and other experienced Palestinian doctors.

As part of the ongoing programme to educate and improve specialty delivery in Gaza, three of the group visited Al-Shifa Hospital in March 2023 to assist in the delivery of best practice management and training in cleft lip and palate patients. Further training visits had been planned throughout the year on a monthly basis, to cover the syllabus. 40 patients were reviewed as outpatients, all with significant complex cleft and craniofacial deformities. Local surgeons were taught advances in cleft reconstruction, including much discussion around the finer details of functional reconstruction and multi-disciplinary support. Following this preliminary visit, a brighter future was anticipated, as the start of a consistent educational program which would take root, grow and flourish into a first-class reconstructive service to include a training the trainers programme. Links were being established to committed doctors in the UK to support development work with case-based discussions and telemedicine. It aimed to generate reconstructive surgical self-sufficiency, to a clinical standard that would match that expected in any developed society.

In lay terms, this might offer the chance to save a limb instead of an amputation with subsequent permanent disability. The best surgeons were selected from Al Shifa Hospital, each candidate was interviewed and committed to the program, and learning agreements were set. Subsequently the group of Gazan aspiring plastic surgeons met online on a bi-weekly basis to support their learning needs, aiming to reach the equivalent standard of the Inter Collegiate Fellowship of the Royal College of Surgeons (FRCS-Plast) reconstructive surgeons. To date the online tutorials included delegate-led sessions on evidence-based medicine, governance, cleft surgery, hand surgery, lower limb trauma and burns management. The delegates were uniformly committed and hardworking. They made time to attend after-hours teaching sessions, having worked full days in Al-Shifa Hospital. They shared complex clinical cases for the betterment of their patients. This process led to a close affiliation of the faculty with the Gazan trainees and senior surgeons, and the discourse on local vs. international management of clinical cases by the trainees was impressive and rewarding for both parties. Their hunger to provide their patients with the best possible care in the context of a besieged existence was impressive. They were hopeful, respectful and resilient in the face of unimaginable challenges.

Conversations about aspects of daily life (such as power disruptions, supply shortages, and anxiety for their families) gave considerable insight into the challenges facing doctors on a daily basis. Recent developments Since October 2023, four of the 18 doctors on the plastic surgery training program have been abducted, shot at close range, or killed by shelling. One such doctor was Dr Ahmed Said Al-Maqadma born 19th June 1991. He was a doctor who never hesitated to volunteer for long and complex cases and never ceased in his love of learning and sharing stories. He was a talented surgeon with a bright future and had won a Royal College of Surgeons of England Humanitarian Innovation Fellowship which he was working on regularly with frequent contact with a supervising surgeon as well as RCS staff member. Until March 16th 2024, he was still sending pictures of complex trauma cases, illustrating where he had salvaged the limbs of children injured by rocket fire and seeking further guidance on best practices in caring for such devastating injuries. And then there was nothing. He and his mother, a respected General Practitioner, Dr Yusra Al-Maqadama, were shot at close range by Israeli military force soldiers outside Al-Shifa hospital on 24th March 2024. Ahmed and his mother were an integral part of the future of health care in

Palestine, and have been murdered. Ahmed leaves behind him two children under five and his wife.⁸

Recently it has also been reported that Dr Adnan al-Bursh, the head of orthopedics at Al-Shifa Hospital, died in an Israeli prison after four months of torture.⁹

The BMA has put its position forward on Gaza¹⁰ but the Royal College of Surgeons has not commented on the Israeli attack on healthcare facilities and workers. Some Muslim healthcare workers who have campaigned for peace and speak up against war crimes committed by Israel have been professionally persecuted.¹¹

Given the Social Determinants of Health,¹² and Israeli oppression in Gaza, it is inevitable that we must consider the effects of the political context on health. In a leaked ten-page document, dated October 13 2023 and featuring the logo of the Israeli Intelligence Ministry headed by Minister Gila Gamliel, a clear plan is described for eradication of the Palestinian people from current territory. The document states, "With the occupation of Gaza, civilians in Gaza will move into Egyptian territory, leave Gaza, and will not be allowed to return permanently."¹³

It also proposes promoting a campaign which will "motivate (Gaza residents) to agree to the plan" through mass casualties. Gallant, the Defence Minister has ordered a complete siege of Gaza to ensure no electricity, no food and no fuel. If life in Gaza is impossible the most "natural and obvious consequence" would be for Palestinians to leave. The Israeli military force has attacked over 600 healthcare facilities in the Gaza Strip since October 7th 2023, including every single one of its 36 hospitals, resulting in over 700 Palestinian medical staff dead, 300 detained and over 1000 wounded. 90 children a day have been killed by the Israeli military forces in Gaza for over a year. This is equivalent to half my local school's population.

Every single day. In late-June 2024, Save the Children reports that a further 21,000 children are estimated to be missing due to the bombing and the ongoing war. This would not be accepted anywhere else in the world. Over 44,000 people have been killed by Israel since October 2023, and the Lancet recognises that this is a under estimation with closer to 186,000 people killed by Israel since the start of the war.

Many more people are still unaccounted for,¹⁴ buried under the rubble^{15, 16} and will continue to die with malnutrition, lack of shelter in winter and complications

from injuries without healthcare resources to care for them.

The attacks on healthcare facilities greatly exacerbate the desperate state of civilian life in Gaza.¹⁷ The injured have nowhere to be treated and can only look beyond its borders, which are inaccessible to all but a tiny minority. This tactic of war has been described as a deliberate strategy of collective punishment, eradicating families and infrastructure with the total annihilation of "power targets" to be the "motivation" Gazans need to leave their homeland forever.¹⁸ Health care facilities may be deemed to lose their protection if they commit, outside their humanitarian function, acts harmful to the enemy.¹⁹ However, the Israeli government has put forward no credible evidence that would justify stripping hospitals of their special protections.^{20, 21}

The Israeli military force has made repeated accusations that Hamas conducts military operations inside hospitals.²² Many of these claims, however, have been refuted under scrutiny from reputable journalists.^{23, 24} According to The Guardian: "...it's clear the intended and actual result of his campaign has been the systematic destruction of the healthcare infrastructure for Palestinians in Gaza".^{25, 26}

A 2006 study in The New England Journal of Medicine found that patients treated at a verified trauma centre had a 25 per cent lower chance of dying than patients treated at a non-trauma centre.²⁷ This extends to the military and warfare setting.²⁸ Long-term complications are less likely in the context of protocol determined trauma services running out of Major Trauma Centres. Throughout the 57-year occupation of Palestine, there have been no verified trauma centres developed in Gaza, with surgeons frequently operating to manage mass episodes of trauma in inadequate resources.²⁹

Consequently, the people of Gaza continue to suffer and die without adequate care, and will go on suffering long after this war is over. The woeful residual health care infrastructure and capacity from the surviving health care personnel cannot possibly manage the immense demands that post conflict care and rehabilitation will present to the system.³⁰ At present, local Palestinian doctors and staff are left to do their best in the most primitive conditions with exhausted medical equipment, intermittent electricity and water supply and limited medication for their patients amidst the constant sound of shelling and drones overhead. When ambulance crews, nurses, and doctors, who would be able to document and verify the injuries sustained by the civilians, are killed, a

diminishing number of witnesses are left able to testify to atrocities committed. The adverse health impact on the population as a whole is difficult in any circumstances; with the decimation of skilled personnel, measuring long term outcomes in the patient population will become virtually impossible. The physical and psychological sequelae of this war will be felt for generations to come, and the substantial loss of health care infrastructure as well as personnel will contribute greatly to the morbidity incurred.³¹

Once the war is over, surviving Palestinians will be able to slowly rebuild their homes, schools, businesses and hospitals. But the human capital lost, so many doctors, surgeons, paramedics, nurses and professors have been killed and cannot be replaced for many years. The team who had been training future reconstructive surgeons mourn the loss of every person in Gaza and Israel and are devastated at the loss of close medical friends and colleagues.

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Declaration of Interests

- *Ms Swee Chai Ang is the Co-Founder and Patron of Medical Aid for Palestinians*
- *Victoria Rose is a member of the registered charity IDEALS - International Disaster & Emergency Aid with Long-term Support*
- *Naveen Cavale is a member of the registered charity IDEALS - International Disaster & Emergency Aid with Long-term Support*
- *Tim Goodacre is a Trustee of CLEFT, IDEALS, IMET2000, and the Blonde McIndoe Research Foundation. Chair of Interface Uganda. Council member of the MDU.*

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