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Letter to Editor

Neurosurgery training in war-torn countries: A perspective from Iraq and Syria

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"He who wishes to be a surgeon should go to war"

Hippocrates

Iraq and Syria lie in the easternmost part of the Arab world. In addition to their geographical, cultural, and economic connections, the two countries shared the adversity of a multi-faceted, long-lasting, and ongoing war that had its toll on all facets of life, and brought neurosurgery, among most other surgical specialties, to its knees.

The overarching aim of this paper is to showcase the existing physical and educational infrastructure available for neurosurgery training. The report embodies a capacity-based checklist of what we have and what we need. We believe that voicing our needs and challenges would set the stage for a much-needed awareness of the current obstacles facing the specialty in this part of the world, with the purpose of attracting the attention of missionary initiatives aimed at global neurosurgical capacity building.

CURRENT NEUROSURGERY TRAINING CAPACITY

At present, there exist two separate training programs in both Iraq and Syria; one is the Arab board of neurological surgery, and the other is the National board; the Iraqi and Syrian neurological surgery boards, respectively. Iraq has 26 neurosurgery centers, 11 of which are board-certified. In Syria, there are 19 accredited neurosurgery centers.

The structure of these training programs is identical, with duration of 5–6 years. In Iraq, the total number of neurosurgery residents in both programs is 100 (17 females). This number is 78 (one female) in Syria. The three programs have common qualifications, eligibility, and assessment criteria, with slight regional variations. Approximately, each resident is expected to participate in a total of 100 neurosurgery operations as an observer, 1200 as an assistant, and 600 as an operator under supervision. Among these operations, trauma cases would account for at least 50% of the overall surgeries attended/performed.

NEUROSURGICAL WORKFORCE SHORTAGE

In Iraq, the neurosurgeon-to-population ratio is 0.6/100,000. In Syria, the ratio is 0.2. This ratio lags behind the global neurosurgical taskforce of more than one neurosurgeon/100,000

population.[3] The deficit is further amplified when factoring in the unapparelled need for neurosurgical trauma care in this war-afflicted part of the world.

The solution to the human capital shortage is not a straightforward one. This shortage is primarily due to the steady exodus of well-trained doctors, which may serve as the proximal cause of health-care system collapse.[1,2] The key driver for the brain-drain phenomenon is the security threats to health workers who are being killed, kidnapped, or harassed, forcing them to flee the country to safer places.[6] Another complicating factor is the poor economic conditions for doctors here; the average monthly salary for residents here is 78.15 USD in Syria and 850 USD in Iraq, noting that the average cost of living is 412 USD and 570 USD-excluding rent in Syria and Iraq, respectively.

PRACTICING NEUROSURGERY IN A CONTEXT OF AUSTERITY

Neurosurgeons here are working on the frontline of austerity. Years of war have left a lasting impact on the already underdeveloped health-care systems of both countries. With the substantial decline of public funding, our health-care systems are operating at the brim of collapse, with an unprecedented drop in health indicators in both countries. In this context, specialty surgeries have taken a major hit and have remained inadequate for the rising demands of the population.

In both countries, there is a profound deficit of collaborative neurosurgery specialties, including neuroradiology, neuro-anesthesia, and neurointensivists. Throughout Syria, there are only eight specialized neurosurgical intensive care units (NICU) (75 beds). In Iraq, six NICU facilities currently exist, with a total of 50 beds.

On a separate note, neurosurgical research has remained a low priority for decades, trend that is driven by a variety of factors including: (i) poor health system infrastructure, (ii) human resource shortages, including insufficient cadre of research expertise, (iii) absence of a comprehensive patient data recording systems, (iv) difficulties around outcome measurement and patient follow-up, and (v) deficits in research funding.

Neurosurgical specialties are beginning to blossom, although at a slow pace. In 2016, both countries witnessed the birth of the spine sub-specialty. To date, there is one licensed spine surgeon in Iraq and none in Syria. Pediatric and skull-base subspecialties emerged in 2019, with no sub-specialized neurosurgeons thus far.

NEUROSURGICAL CAPACITY BUILDING IN WAR ZONES

The first step to solving a problem is to accept that it exists. In this light, a more rigorous analysis of the current demand for supply shortages in neurosurgical care is required. However, this is not a facile undertaking that requires concerted efforts by our neurosurgeons to get the message across to both local and international bodies engaged in neurosurgical capacity building, aimed at strengthening existing neurosurgical infrastructure and training programs.

Meanwhile, both countries could benefit from temporizing measures that have demonstrated at least a proof-of-concept success. These interventions include short-term missionary trips, self-contained specialized neurosurgical centers, telesimulation, and remote education and international collaborations in the form of twinning, training, and mentorship programs.[4,5]

CONCLUSION

The limitations discussed in this report give a snapshot of the current status of neurosurgical training in this war-ridden region of the world. Both countries have established, semi-structured training programs that place us at an advantage to other less served countries, but more is required to bridge the gap and scale-up neurosurgery training, whether in terms of physical infrastructure or neurosurgical workforce, to bring the specialty on its feet again.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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