

Impact of war on nuclear medicine services in Sudan

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Dear Sir,

In April 2023, violent clashes erupted between rival armed groups in Sudan's capital, Khartoum, sparking concerns of a renewed civil war. The conflict canters on a power struggle between the Sudanese Armed Forces (SAF) and a dominant paramilitary faction known as the Rapid Support Forces (RSF). Since the onset of the conflict on April 15, 2023, about 15,000 people have died and over 8.2 million have been displaced, making it one of the worst displacement disasters in the world [1, 2].

Sudan has been a leader in nuclear medicine and cancer care within Sub-Saharan Africa. The first nuclear medicine and radiotherapy centre was established in 1964. Nuclear medicine services have been associated with oncology services. For many years, government-run nuclear medicine and oncology service centres [3, 4]. There are currently 8 public and private nuclear medicine centres in Sudan. Five out of seven of these canters are in Khartoum. However, the ongoing conflict has severely disrupted these services, particularly in Khartoum state, where the first spark took place and the heart of the war. Because the Khartoum airport is the main airport for aeroplanes that have licenses to transport radioactive materials, all the centers of nuclear medicine were out of operation [2].

The ongoing conflict in Sudan has had a profound impact on the healthcare system, including specialized services like nuclear medicine [5]. Nuclear medicine plays a pivotal role in contemporary healthcare, serving as a diagnostic and therapeutic modality for a diverse array of pathologies, encompassing oncological, cardiovascular, and endocrine disorders [6]. The war has disrupted these services due to damaged infrastructure, supply chain issues, and a shortage of healthcare personnel, creating a healthcare crisis that directly affects patient

outcomes. The cessation of nuclear medicine services has left thousands of patients, particularly those with cancer. It affects people without access to critical care. A significant cohort of approximately 40,000 Sudanese individuals afflicted with cancer are impacted by the disruption of nuclear medicine services, thereby compromising their access to essential diagnostic and therapeutic interventions [7].

Patients who were in the middle of treatment regimens or awaiting diagnostic scans are now stranded, with their conditions worsening due to the lack of follow-up. For example, breast cancer patients requiring regular follow-up radionuclide scans for metastasis detection are now left without options, leading to delayed diagnoses and poorer outcomes in the oncology centres that are far away from war zones.

Sudan's protracted conflict has caused significant disruptions to nuclear medicine services, exacerbating the nation's healthcare situation. The urgent need to cease fire, repair infrastructure, restore supply chains, and support healthcare personnel is evident. International collaboration and sustained efforts will be necessary to ensure the resumption and sustainability of nuclear medicine services, which are critically important to managing diseases such as cancer. As a response, the "Quartet" of the United States of America, Saudi Arabia, Egypt, and the United Arab Emirates issued a joint statement on September 12, 2025, proposing a roadmap to peace that includes a humanitarian ceasefire that would last for three months, a transition to a permanent ceasefire, and a nine-month period that would lead to civilian governance [8]. In conclusion, the war led to a collapse in the nuclear medicine service in Sudan. Without urgent interventions, the health outcomes of Sudanese patients will continue to deteriorate.

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