



## War within a war: The challenges of providing gynecologic cancer care in the besieged Tigray region of northern Ethiopia

The federal democratic republic of Ethiopia is a landlocked country in the Horn of Africa. It has the continent's second highest population and is composed of 11 semi-autonomous national regional states and two chartered cities (Figs. 1A and 1B). Regional states can establish their own government and democracy. Tigray is the northmost region in the country and is home for more than seven million people. This region is known for being a tourist destination as it hosts one of the four world's most ancient civilizations, Aksumite Kingdom, and UNESCO registered prestigious heritages. Following prime minister Abiy Ahmed's ascent to power, political tensions between the federal government and Tigray regional government emerged.

A war between the Ethiopian Federal government and forces loyal to Tigray Regional Government began on November 4, 2020 (BBC News, 2022). Eritrean armed forces and Amhara Regional Forces backed the Ethiopian Federal government (GIWPS, 2022). All regional governments and chartered cities sent armed forces to defend the "sovereignty" of the nation in response to calls for law enforcement action from the Federal government. On November 28, 2020 after a month of heavy fighting, the federal government took control of Mekelle, the capital of the Tigray region. Despite the federal government seizing Mekelle, Tigrayan forces continued resistance in the rest of the region, and recaptured Mekelle on June 28, 2021. In subsequent weeks, most of the Tigray region was under the auspices of the Tigrayan forces; and the Ethiopian federal troops, Eritrean defense forces, and Amhara special forces no longer in control. The Ethiopian authorities declared a unilateral ceasefire and besieged the region, including blocking food, medicines, banks, electricity, and telecommunications which has essentially stymied the recovery of health care services (Human Rights Watch, 2022a). All roads going into and out of Tigray were blocked and all flights from the airport were suspended (Roth, 2022). The siege has kept out virtually all humanitarian assistance from reaching Tigray.

This war has left hundreds of thousands of dead, millions displaced, and pushed millions into starvation and famine (The Globe and Mail, 2022). Before the war, Tigray's health system was hailed for expanding primary health care through health extension workers (Kloos, 1998). It was considered a flagship of Ethiopian health care. Quality indicators such as antenatal care, institutional delivery, postnatal care, and neonatal mortality were headed in the right direction towards national and global goals (Unicef.org, 2022).

During this war, health institutions have been particularly targeted throughout the entire region. According to the Médecins Sans Frontières (MSF) assessment of 106 medical facilities between mid-December 2020 and early March 2021 in the Tigray region, "nearly 70% had been looted, and more than 30% had been damaged; just 13% were functioning normally" (Médecins Sans Frontières (MSF) International, 2022;

Gesese et al., 2021). With the presence of soldiers at checkpoints on the roads and near health facilities, civilians, especially from outside urban areas, have been prevented from getting medical treatment.

Ayder Comprehensive Specialized Hospital (Fig. 2), the main hospital in the Tigray region, which was relatively spared from looting and destruction, is now unable to provide basic medical care because of lack of essential medical supplies (Berhe et al., 2022; Wall, 2022). Before the war broke out, Ayder served as a specialized referral center for a catchment area of 9 million people from Tigray, and neighboring districts of the Afar and Amhara region. Just before the war, Ayder hospital provided nearly 300,000 annual patient visits. Thousands of major surgeries, deliveries, and a wide variety of medical treatments were also being provided.

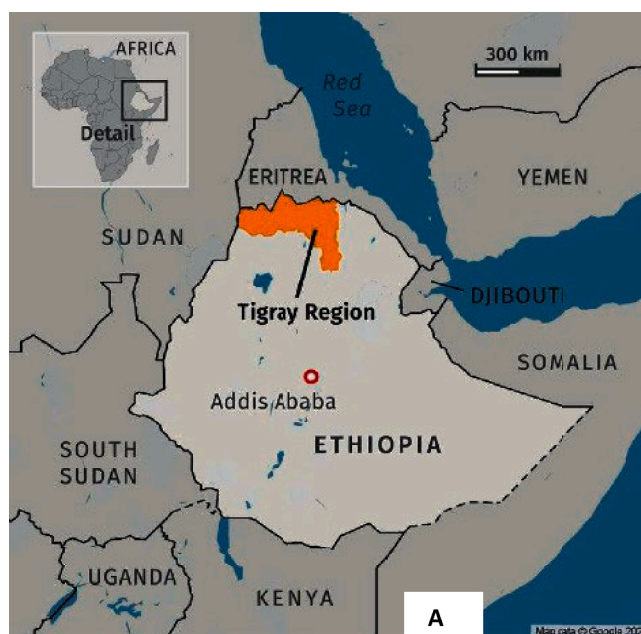
The consequence of this war has been tragic especially for women and girls (Yemane et al., 2022). The Tigray conflict has resulted in widespread reports of sexual violence in areas controlled by Ethiopian and Eritrean federal forces, and regional Amhara militias. Reports of rape, gang rape, sexual slavery, torture, beatings and killings of family members, and degrading, ethnic-based slurs have been widespread (Human Rights Watch, 2022b). Apart from the direct impact of the war, women have also been the subject of indirect grave consequences of the war. As the result of the damage of health facilities and looting of ambulances, laboring mothers are dying at home. Women with cancer are being sent away to die at home. Although providing quality gynecologic oncology services was challenging before the war, the hospital was able to provide a variety of cancer care services. Before the war, a significant number of major gynecologic cancer surgeries were being performed, and chemotherapy was being provided for curative intent. For the past 17 months, no chemotherapy drugs have been allowed to enter into Tigray. Prior to the war, patients who required radiation therapy were being referred to Tikur Anbesa Specialized Hospital in the Ethiopian capital Addis Ababa, some 870 km from Mekelle, as this was the only center providing radiation therapy for over 110 million people in Ethiopia. Understanding the gap in care, the government of Ethiopia had plans to establish similar radiation center in 5 other hospitals in the country. While, the other four radiation centers have been completed, Ayder's radiation center remains under construction as its process was caught in the war (Fig. 3). The radiation therapy equipment bought for the radiation center remains idle in the hospital's premises.

The war has adversely affected both screening and treatment of gynecologic cancers. Previously, the hospital was able to provide breast cancer screening using ultrasound and mammography. Prior to the war, the HPV vaccine was also being given to school age children (WHO | Regional Office for Africa, 2022). After the war broke out, none of these gynecologic services are being provided. Essentially, all

<https://doi.org/10.1016/j.gore.2022.101093>

Available online 25 October 2022

2352-5789/© 2022 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



CBC NEWS

Fig. 1A. The area of conflict in Tigray region, Northern Ethiopia.

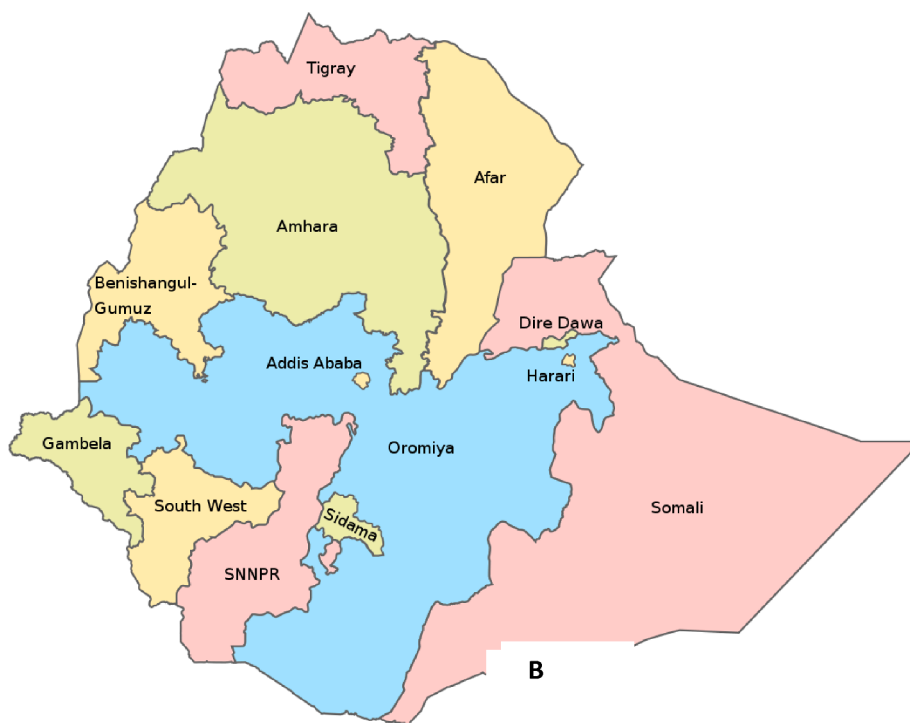


Fig. 1B. The area of conflict in Tigray region, Northern Ethiopia. Google Maps 2020 (A), administrative Regions of Ethiopia (B). Available at [https://en.wikipedia.org/wiki/File:Regions\\_of\\_Ethiopia\\_EN.svg#filelinks](https://en.wikipedia.org/wiki/File:Regions_of_Ethiopia_EN.svg#filelinks).

cancer diagnostic procedures and tests are no longer available. Both emergency and elective surgeries are being cancelled due to power outage and lack of basic surgical supplies including surgical gloves, intravenous fluids, and anesthesia drugs. Chemotherapy drugs are no longer available and cancer patients are being sent home to die (Dyer, 2022).

The year-long blockade threatens cancer patients in the entire region and particularly women with gynecologic cancer. To this end, we

ask the global community to show solidarity to end the suffering of women who are fighting a war with in a war. The African Union, the United Nations, international donors, the international community, cancer societies, and physicians worldwide should press all parties to allow unfettered humanitarian aid access and to lift the siege throughout the Tigray region.



Fig. 2. Mekelle University, Ayder Comprehensive Specialized Hospital.



Fig. 3. Unfinished Ayder's cancer center being built for comprehensive cancer care including radiation therapy.

## References

- BBC News, 2022. Ethiopia's Tigray war: The short, medium and long story. [Online] Available at: <https://www.bbc.com/news/world-africa-54964378> [Accessed 2 September 2022].
- Berhe, E., Ross, W., Tekla, H., Abraha, H.E., Wall, L., 2022. Dialysis Service in the Embattled Tigray Region of Ethiopia: A Call to Action. *Int. J. Nephrol.* 2022, 8141548. <https://doi.org/10.1155/2022/8141548>. Published 2022 Jun 24.
- Dyer, O., 2022. Tigray's hospitals lack necessities as relief supplies are blocked, say doctors. *BMJ* 376 (o34). <https://doi.org/10.1136/bmj.o34>.
- Gesesew, H., Berhane, K., Siraj, E.S., Siraj, D., Gebregziabher, M., Gebre, Y.G., Gebreslassie, S.A., Amdes, F., Tesema, A.G., Siraj, A., Aregawi, M., Gezahegn, S., Tesfay, F.H., 2021. The impact of war on the health system of the Tigray region in Ethiopia: an assessment. *BMJ Glob. Health* 6 (11). <https://doi.org/10.1136/bmjgh-2021-007328>. Erratum. In: *BMJ Glob. Health*. 2022 Mar; 7(3): PMID: 34815244; PMCID: PMC8611430 e007328.
- GIWPS, 2022. The Crisis in Tigray: Women & Girls Under Violent Assault - GIWPS. [Online] Available at: <https://giwps.georgetown.edu/the-crisis-in-tigray-women-girls-under-violent-assault/> [Accessed 4 September 2022].
- Human Rights Watch, 2022a. I Always Remember That Day. [Online] Available at: <https://www.hrw.org/report/2021/11/09/i-always-remember-day/access-services-survivors-gender-based-violence-ethiopia> [Accessed 7 September 2022].
- Human Rights Watch, 2022b. Ethiopia: Blocking Tigray Aid Harms Rape Survivors. [Online] Available at: <https://www.hrw.org/news/2021/11/09/ethiopia-blocking-tigray-aid-harms-rape-survivors> [Accessed 4 September 2022].
- Kloos, H., 1998. Primary health care in Ethiopia under three political systems: community participation in a war-torn society. *Soc. Sci. Med.* 46 (4-5), 505-522. [https://doi.org/10.1016/s0277-9536\(97\)00194-9](https://doi.org/10.1016/s0277-9536(97)00194-9). PMID: 9460830.
- Médecins Sans Frontières (MSF) International, 2022. Health facilities targeted in Tigray region, Ethiopia | MSF. [Online] Available at: <https://www.msf.org/health-facilities-targeted-tigray-region-ethiopia> [Accessed 2 September 2022].
- Roth, K., 2022. Confronting Ethiopia's Abusive Siege. [Online] Human Rights Watch. Available at: <https://www.hrw.org/news/2022/08/31/confronting-ethiopia-abusive-siege> [Accessed 2 September 2022].
- The Globe and Mail, 2022. [Online] Available at: <https://www.theglobeandmail.com/world/article-tigray-war-has-seen-up-to-half-a-million-dead-from-violence-and/> [Accessed 7 September 2022].
- Unicef.org, 2022. [Online] Available at: <https://www.unicef.org/ethiopia/media/1721/file/The%202019%20Ethiopia%20Mini%20Demographic%20and%20Health%20Survey%20.pdf> [Accessed 7 September 2022].



- Wall, L.L., 2022. The Siege of Ayder Hospital: A Cri de Coeur From Tigray, Ethiopia. *Female Pelvic Med. Reconstruct. Surg.* 28 (5), e137–e141. <https://doi.org/10.1097/SPV.0000000000001181>.
- WHO | Regional Office for Africa, 2022. Ethiopia launches Human Papillomavirus Vaccine for 14 year old girls. [Online] Available at: <https://www.afro.who.int/news/ethiopia-launches-human-papillomavirus-vaccine-14-year-old-girls> [Accessed 4 September 2022].
- Yemane, A., Teka, H., Tesfay, F., et al., 2022. Obstetrics and gynecology in an Ethiopian war zone [published online ahead of print, 2022 May 25]. *BJOG*. <https://doi.org/10.1111/1471-0528.17238>, 10.1111/1471-0528.17238.

Hale Teka\*, Awol Yemane

*Mekelle University, College of Health Sciences, Ayder Comprehensive Specialized Hospital, Department of Obstetrics and Gynecology, Ethiopia*

Ephrem Berhe  
*Mekelle University, College of Health Sciences, Ayder Comprehensive Specialized Hospital, Department of Internal Medicine, Ethiopia*

\* Corresponding author at: Obstetrician and Gynecologist, PO Box: 1871, Mekelle University, Ayder Comprehensive Specialized Hospital, Ethiopia.

E-mail address: [haleteka@gmail.com](mailto:haleteka@gmail.com) (H. Teka).