

## Global Spotlights

# Tigray Siege and its impact on cardiology services in Mekelle University Hospital: a call to action

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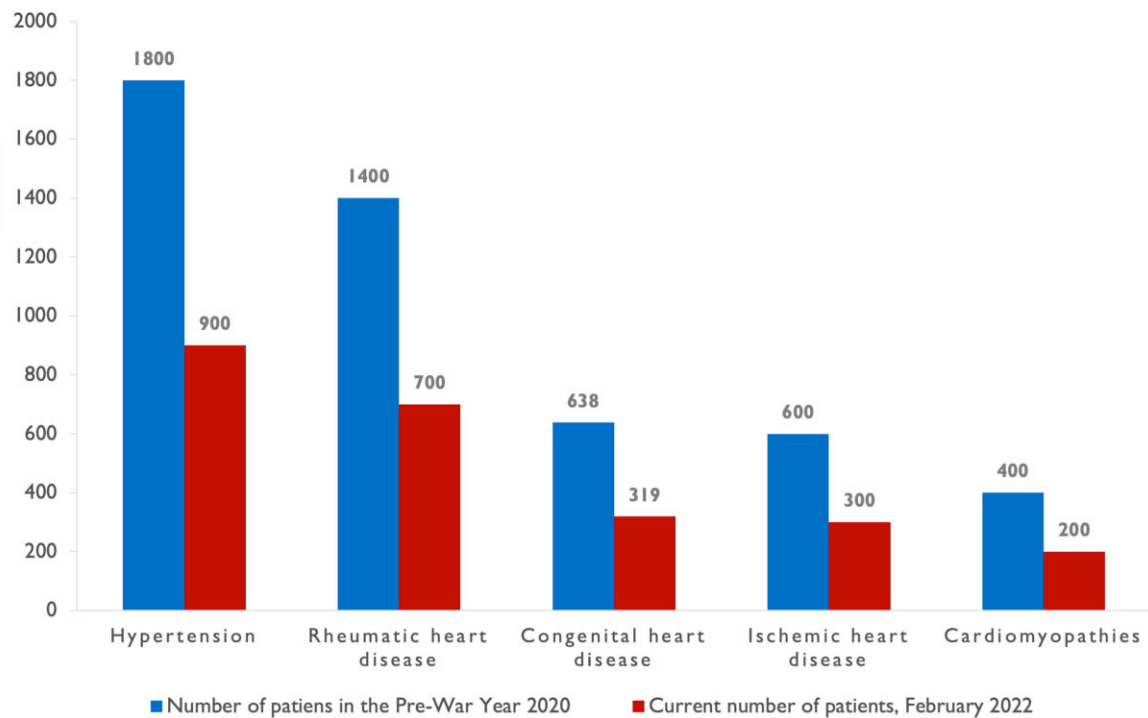
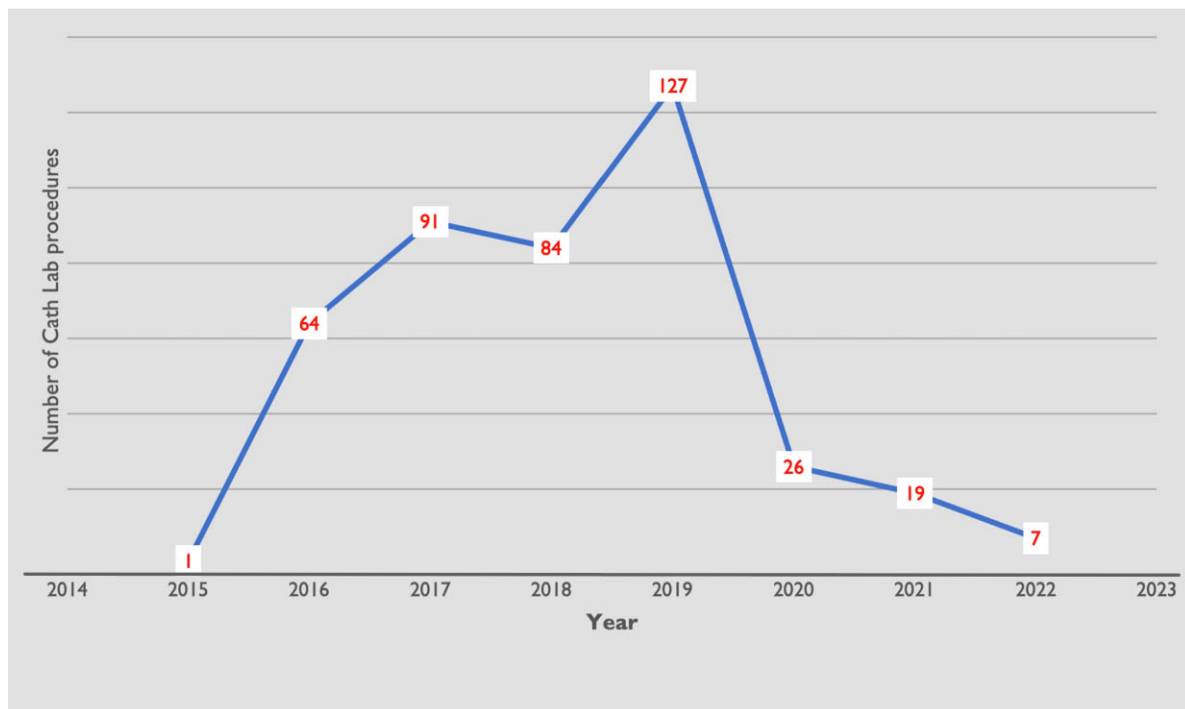


**Figure 1** Mekelle University (Ayder) Hospital, Mekelle.

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With a population of 7 million, Tigray regional state is located in the northern part of Ethiopia.<sup>1</sup> The war in Tigray erupted on 4 November 2020, and is still ongoing. Nearly 20 months on, displacement, death, and destruction of healthcare facilities have become

the defining elements of this armed conflict, putting millions of lives at risk. The war has led to a near-total collapse of the Tigray region's healthcare system, rendering 70–80% of healthcare facilities in the Tigray region dysfunctional.<sup>2,3</sup>



**Figure 2** Trend of Cath Lab procedures (upper) and pre-war and current number of outpatient cardiac patients in Ayder Hospital, Mekelle, Ethiopia, 2022.

Mekelle University (Ayder) Hospital, established in 2008, is located in Tigray's capital Mekelle (Figure 1). It is the flagship healthcare facility in Tigray and serves more than 10 million people from Tigray, from Afar, from the northern districts of the Amhara region, and from Eritrea. Since 2011, its cardiology unit has been equipped with modern resting and stress Holter-ECG, Holter blood pressure monitors, and echocardiography machines. After the first heart catheterization was completed successfully in 2015,<sup>4</sup> the hospital has been doing primary percutaneous coronary intervention (PCI) and has been implanting permanent pacemakers with local expertise. With the help of local and international faculties, Ayder Hospital has executed more than 238 coronarographies and PCIs, 65 valvotomies, 38 pacemaker implantations, and 41 cardiac defect closures.<sup>4</sup>

The hospital was following more than 5000 cardiac patients during the immediate pre-war year in 2020 (estimated from outpatient follow-up). Our patients tended to present with advanced heart failure and superimposed infections requiring urgent medical attention. Like anyone living in the current quagmire in Tigray, cardiac patients are facing multifaceted problems due to the complete siege with communication blackouts: there is no telecommunication, no transportation, no food, and no medical supplies. All bank accounts have been frozen.<sup>3,5</sup> As a result, 16 months into the conflict, the number of Cath Lab procedures and the number of cardiac patients followed in the cardiology unit has dramatically decreased by >50%, leading to the untimely loss of lives with a significant number of preventable home deaths (Figure 2).

Patients who were receiving at least the basic heart failure drugs are now being sent home by their physicians due to the lack of critical cardioactive drugs and diagnostic tests. The steeply deteriorating diagnostic and therapeutic resources are causing a huge psychological impact on patients and practitioners. As the siege tightened in July 2021, the drug alternatives to treat patients progressively decreased, forcing patients to use expired drugs. Now the region has run out of any drugs, silently costing the lives of many.

Ayder Hospital has also run out of coagulation profile tests, which are also lacking in Tigray. Computed tomography scan or magnetic resonance imaging services are not any longer available. Non-invasive and invasive procedures are frequently interrupted due to a lack of maintenance, a lack of supplies (even no contrast material and drug cocktails needed in the Cath Lab), the cost of the procedures, etc. Hence, patients with stroke and acute coronary syndromes are not getting appropriate therapy.

There are more than 200 patients in and around Mekelle with mechanical heart valves. The majority (140) of them had surgery for rheumatic heart disease (RHD), done with the support of Save a Life4Life, in Sudan and Italy. These patients used to get close follow-up checks and lifelong drugs including Warfarin and regular INR tests for free. In the last 10 months, we have had two deaths due to a lack of follow-up checks for patients with valve replacement. If efforts are not made to open humanitarian corridors, all the efforts made to do the expensive surgeries will have been in vain. The war has also disrupted the PrevRHD programme (guideline-based prevention and control of rheumatic heart disease), funded by our partners in Germany (Klinikpartnerschaften/GIZ), as well as a small scale grant

from the World Heart Federation to support patients living with RHD (Ethiopia's first randomized controlled clinical trial participation in cardiology—INVICTUS study—with components of Registry of RHD patients and a clinical trial comparing rivaroxaban with vitamin K antagonists for rheumatic atrial fibrillation).<sup>6</sup>

The direct effects of armed conflict on healthcare facilities and workers are severe, yet the indirect effects even go deeper.<sup>5</sup> More than a century and a half has passed since the first Geneva convention prohibiting attacks on health facilities was adopted, but here in Tigray, like other war-torn regions of the world, the declaration that was made then has been neither respected nor enforced.<sup>7</sup>

During the pre-war period, Mekelle University's partners witnessed that Ayder Hospital had dynamic administrators and clinicians providing services at a level unimaginable a few years before its establishment. Now, Ayder Hospital staff and their partners are urgently speaking out about the disastrous impact that this war is causing on healthcare delivery.<sup>8,9</sup>

On behalf of the Ayder Hospital community, we request that the national and international cardiology communities provide an urgent response to restore healthcare, prevent further loss of life, and ameliorate the misery of our patients. We urge and call upon all professionals and organizations to be the advocates of our patients and bring support to the patients in Tigray, Northern Ethiopia.

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**Conflict of interest:** C.J.L. is the honorary chairman of the development aid association Etiopia-Witten e.V. Germany. All the other authors have no conflict of interest to disclose.

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