

## **Building a Healthier Nation: Eritrea's Remarkable Strides in Public Health**



By: Habtom Tesfamichael

Eritrea has achieved remarkable progress in its health sector since gaining independence. The Eritrean government remains steadfast in its commitment to providing quality and affordable healthcare services to all citizens, a noble objective that has driven significant efforts to expand health infrastructure and cultivate a skilled healthcare workforce from the very beginning.

Upon its independence, Eritrea inherited a severely limited and dilapidated healthcare system. The nation faced the dual challenge of rebuilding and expanding health facilities while simultaneously developing its human capital in the medical field. Initial steps focused on the crucial rehabilitation of damaged facilities, followed by the strategic establishment of new health facilities nationwide. Concerted efforts have been made to ensure that a health facility is accessible within a 10-kilometer radius or within a two-hour walk, a goal now achieved in approximately 80% of the country. In some regions, approximately 60% of the population has access to health services within a fivekilometer radius or an hour's walk from their homes.

Health services in Eritrea are organized into a three-tier system to ensure comprehensive and accessible care.

The first tier provides foundational services through the community based health care system, working under local administrations and local health agents. Trained village health agents or community health workers serve populations of 500-2,000

people, focusing on health promotion, disease prevention, and managing conditions such as tuberculosis through approved treatments and medication. Such health services can be provided from spaces as small as 25 square meters.

Health centers serve 5,000-10,000 people as primary healthcare facilities, offering basic care, including health promotion, disease prevention, and treatment. They typically feature a maternity ward, examination rooms, short stay observation beds or inpatient holding areas, and pharmacies. Health centers require about 3,500 square meters to function well. Under the National Health Policy 2020, existing health posts are being upgraded to health centers. Some large health centers serve 50,000-100,000 people, with many now upgraded to community hospitals. In line with the 2020 policy, the upgrading of remaining health centers to community hospitals will continue as needed, while others will retain their status.

A community hospital serves a population of 100,000-200,000 people as a primary healthcare facility, overseeing and supporting subordinate health centers and community-based services. A community hospital is a big facility, standing on approximately 4 hectares, that has inpatient wards, maternity wards, operating theaters, radiology wards, diagnostic wards, laboratories, and physiotherapy units.

Regional referral hospitals primarily represent the second tier. These comprehensive facilities offer a wide range of medical services and serve as the primary regional referral point for the health facilities within the respective region, typically serving over 200,000 patients. The facilities commonly include maternity wards, operating rooms, X-ray rooms, examination rooms, physiotherapy, laboratories, inpatient bedrooms, and pharmacies.

The third tier consists exclusively of the national referral hospitals in Asmara. These referral hospitals offer advanced and specialized care, serving as key centers for research and training of healthcare professionals.

### **Expanding Reach and Capacity**

The Ministry of Health (MoH) has consistently focused on both spreading health services and significantly improving their efficiency and effectiveness. Its commitment is evident in the remarkable growth of health facilities, which has increased from 93 in 1991 to 342 today—a 231% rise. This expansion wasn't solely about adding more facilities or broadening coverage; it was strategically aimed at enhancing the efficiency, depth, and breadth of health services,

representing a substantial investment in health care. It's crucial to understand that improving service efficiency is an ongoing journey, not a one-time achievement. While considerable efforts have been made to boost efficiency, the MoH acknowledges there are still gaps to address and services that require continuous improvement.

Building health facilities and providing medical equipment are essential, but not sufficient, without adequate, qualified staff. That is why from the get go, the government engaged in creating a conducive environment for training health professionals and recruiting doctors from abroad, ensuring that human resources are available.

During the challenging period from 2011 to 2021, significant strides were made, including the construction of hospitals in underserved areas and the upgrading of selected health centers to community hospitals. Many new health centers were also built where services were previously unavailable. While the number of health posts and clinics decreased from 271 to 219 due to closures, the overall picture of healthcare expansion over the 30 years, from 1991 to 2021, is remarkable. The number of hospitals in the country more than doubled (a 125% increase), health centers increased more than tenfold (a 960% increase), and the combined number of health posts and clinics nearly tripled (a 231% increase).

Medical services within hospitals encompass a wide range of departments and procedures, beginning from the moment a patient's card is processed. These services typically include patient consultations for both outgoing and incoming patients, as well as those requiring admission, various laboratory tests, diagnostic imaging, and surgical procedures. Other specialized services are also available depending on the hospital's capabilities.

### **Medical laboratory services**

Medical laboratory services are crucial for enhancing the efficiency of health services, playing a significant role in diagnosing and controlling diseases. The laboratory services in the country are organized in such a way that at the apex is one national central laboratory, supported by four national referral hospital laboratories and six regional referral hospital laboratories. Below these are 11 regional hospital laboratories, and at the base, there are 65 community hospital laboratories, with some still operating at the health center level. Overall, there are 241 laboratories administered by the Ministry of Health (MoH), and 87 of these are managed by specialist laboratory personnel.

Laboratory testing has undergone a significant transformation, moving from manual and smallscale equipment to sophisticated, automated systems across many locations. For example, all hospitallevel laboratories now utilize advanced automated equipment for blood testing, completely replacing older manual methods. Clinical chemistry tests, once exclusively performed at the National Health Laboratory (NHL), are now also conducted at national referral hospital laboratories and most regional referral hospital laboratories. Furthermore, CD4 count testing, previously only available at the NHL, is now widely accessible in most hospitals.

Advanced screening equipment, such as GeneXpert PCR machines, has been introduced in national and regional referral hospitals for the diagnosis of influenza. This advancement has dramatically improved diagnostics, notably enabling HIV diagnosis in children within days of birth, a process that historically took approximately two years. Additionally, advanced Haemoglobin A1c testing equipment (DCA Vantage Analyzer) has been installed at both national and regional referral hospitals. Thanks to recently acquired equipment, the NHL can now perform several crucial tests domestically that previously had to be sent abroad, including testing for the levels of Hepatitis B and C viruses, therapeutic drug monitoring, and various cancer indicator tests. The laboratory is also initiating other critical diagnostic services, including pathology. Modern imaging services are no longer limited to basic X-rays. The field has advanced considerably, with routine X-ray procedures now performed using sophisticated equipment by specialized experts.

To bolster oxygen supply, the MoH is strategically placing oxygen processing facilities. Oxygen generators are being installed at Orotu and Halibet National Referral Hospitals and Mendefera Referral Hospital. These health facilities will produce oxygen for their own use and other facilities.

### **Blood Transfusion Service**

The National Blood Bank Service (NBBS) has ensured the availability of blood across the country and the safety of transfusions for patients by developing guidelines, training healthcare professionals, conducting public awareness campaigns, and equipping itself with modern technology. To guarantee the safety of all blood donated, the NBBS conducts quality testing on 100% of the donated blood. Ninety-nine percent of this life-saving blood is donated by volunteers, with

approximately 50% coming from regular donors. The Blood Donor Association plays a crucial role in persuading people to be donors.



The NBBS has become one of the few blood banks in Africa to achieve international accreditation, which it did in 2010 and 2013. As the NBBS has advanced in terms of its professionals' capacity and its equipment.

In 2013, the Gash Barka region established its own regional blood bank service with the assistance and oversight of the NBBS.

### **Physiotherapy Services**

Physiotherapy services are critical for restoring and normalizing skeletal, muscular, circulatory, cardiovascular, and orthopedic functions. Physiotherapy addresses abnormalities or disabilities caused by accidents, injuries, or other conditions. Physiotherapists work closely with doctors, nurses, laboratory technicians, and X-ray specialists to help patients regain normal bodily functions. A key objective of physiotherapy is to prevent permanent disability and minimize future risks.

In terms of human resource development, the first group of 12 health professionals was trained at the physiotherapy level in 2002 and deployed to health facilities in the regions. Building on this foundation, a new curriculum was developed in 2011 with the assistance of the College of Health and Technology, a strategic investment that significantly boosted the number of physiotherapists from a mere 6 in 1991 to 140 by 2020.

### **Intensive Care Units**

Efforts to establish and enhance infant and child intensive care units (ICUs) have significantly increased since 2012. These critical services had in the past been available only at Orotta National Referral Hospital. Now, ICUs for infants and children have been established in 16 of the 28 hospitals, covering 57% of the facilities in the country. This expansion has proven highly effective in reducing the mortality rate of vulnerable infants.



Cancer diagnostics and treatment service has officially commenced in Asmara. This crucial development represents a major step in enhancing the capacity of specialized medical care available in the country. Previously, access to comprehensive cancer diagnostics and treatment was often limited, necessitating referrals abroad for many patients. Now, with the establishment of these services, patients can receive specialized care closer to home.

### **Ophthalmology Services**

Eritrea's ophthalmology services have advanced significantly, marked by substantial growth in infrastructure, an increase in specialized ophthalmic personnel, and the introduction of cutting-edge ophthalmic equipment and technology. All ophthalmic hospitals are now equipped with a full spectrum of medical devices, from advanced diagnostic imaging systems like optical coherence tomography (OCT) and fundus cameras to specialized surgical microscopes and phacoemulsification units for cataract procedures, all deployed on the basis of clinical requirements.

The government gives priority to the development of human resources across all sectors.



As part of this commitment, many eye care professionals have been trained domestically, with some individuals also pursuing advanced subspecialty training abroad through collaborations with universities and other institutions. These ongoing initiatives have bolstered the ranks of various eye care specialists, including ophthalmologists (with in-country education now complementing advanced training received overseas in areas such as vitreoretinal surgery or glaucoma management), a steadily increasing number of ophthalmic officers who play a crucial role in primary eye care and surgical assistance, a growing pool of ophthalmic nurses through continuous training programs focused on patient care and pre/ post-operative management, and an expanding contingent of optometrists whose continuous training enhances their ability to perform comprehensive refractive assessments and to manage common ocular conditions.

Significant progress has been made in modern cataract surgery. While various procedures were performed before independence, the National Ophthalmic Referral Hospital, in collaboration with external experts, has provided training in the most advanced and modern surgical techniques. Eye treatment referral hospitals have been established across all regions, ensuring that proper eye care services are accessible. These institutions are well-equipped with essential eye disease screening tools and provide comprehensive eye surgery services. A wide array of major and minor surgical services, including various types of cataract surgery, are available at all eye treatment facilities. Accidental injuries and



complex conditions, such as severe glaucoma or cataracts that require surgical intervention that cannot be handled at the regional level are taken care of at the hospital by local and foreign professionals.

Addressing trachoma, which is the second leading cause of blindness in the country, is always given high priority. Extensive efforts that focus on prevention and control are underway in line with the WHO's Trachoma Eradication Program for 2020. Since 2011, between two and six rounds of anti-trachoma drugs have been distributed in 25 subzones where active trachoma rates exceed 5%. During the distribution campaigns, village health representatives give mass education on trachoma, its transmission, prevention, and the importance of hygiene. Periodic evaluations, including studies on medicine distribution, are conducted in all the subzones of the regions to assess the program's effectiveness.

## **Future Plans**

The MoH has ambitious plans to significantly enhance healthcare service throughout Eritrea. Future key initiatives include the continuous expansion and enhancement of health services, aiming to improve both the reach and quality of care for all citizens. A major strategic focus is the upgrading of existing health centers to community hospitals in several key locations, including Haikota, Elabered, Hagaz, Aditekelezan, Dibarwa, Segeneiti, Areza, Tsaeda- Christian, Serejeka, and Foro. This move will substantially boost the capacity of local healthcare facilities. Additionally, the establishment of a dedicated cancer service unit is underway. This facility is being designed for extensive growth and will be fully equipped with the required resources to provide advanced cancer care.

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