



Sierra Leone

By James Tiko

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Country Report-Sierra Leone

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Dedication

This report is dedicated to my boy Aidan and the people of Sierra Leone.

Acknowledgments

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INTRODUCTION

Sierra Leone is a Western Africa country, bordering the North Atlantic Ocean, between Guinea and Liberia. It lies on an area of 71, 620 km, slightly smaller than South Carolina. The climate is tropical: hot humid summer, Rainy season (May –December); winter dry season (December-to April).



Map showing the provinces and the national flag for Sierra Leone.

The official National language for Sierra Leone is English. Sixty percent of the population is under the age of twenty-five, and the annual population growth rate is 2.4%. The majority of the population is Muslim. According to the World Fact Book it is estimated that in 2013, 78.6% were Muslims, 20.8% Christians and 0.3% unspecified.

HISTORY

Beginning in the 17th century, the British had set up a trading post near the present-day Freetown. Originally the trade involved timber and ivory, but later also slaves. Following the American Revolution, a colony was established in 1787, and Sierra Leone became a destination for settling black loyalists who had originally been resettled in Nova Scotia. After the abolition of the slave trade in 1807, British crews delivered thousands of Africans liberated from illegal slave ships to Sierra Leone, particularly Freetown. The colony gradually expanded inland during the course of the 19th century; independence was attained in 1961. Democracy is slowly being reestablished after the civil war (1991-2002) that resulted in tens of thousands of deaths and the displacement of more than two million people (about 1/3 of the population).

As a guarantor of the country's stability, the military took over full responsibility for security following the departure of UN peacekeepers at the end of 2005. In addition, the armed forces stayed on during the 2007 and 2012 national elections.

In March 2014, the closure of UN integrated peace-building office in Sierra Leone marked the end of more than fifteen years of peacekeeping and political operations in Sierra Leone. The government's stated priorities are furthering development, recovering from the Ebola epidemic, creating jobs and stamping out endemic corruption.

(CIA the world factbook), assessed on 10/10/2018 19:00HRS.

ECONOMY

The Sierra Leonean economy is predominantly agricultural, which has accounted for about half the real gross domestic product (GDP). However, the share of the GDP attributed to agriculture has been declining, from 54% in 2009 to less than 41% in 2013, mainly due to the mining activities in the country during this period. Service is next to agriculture as a major percentage of the GDP, at about 34.5%. The manufacturing sector consisting mainly of import-substituting industries accounts for only 2% of GDP. The mining sector accounted for less than 6% of GDP between 2001 and 2011 but increased to 12% of GDP in 2012 (SSL, 2012) mainly due to the discovery and mining of iron ore in 2011 in the northern region. Coffee, cocoa, and fish are major agricultural exports from the country. The performance of the Sierra Leonean economy has been declining since the post-independence era, with its big recession during the ten-year civil conflict. Since the end of the conflict in 2002, several measures have been put in place to improve the economy and the quality of life of the people. These include the introduction of five year development frameworks such as the poverty reduction strategy papers (PRSP) 2008, the agenda of change for change, and the agenda for prosperity. The implementation of the agenda for change saw improvement in the overall economy, with an emphasis on energy, infrastructure, agriculture, and social services.

The agenda for change enabled the economy to grow at an average annual rate of 6% between 2007 and 2012. One of the lessons learned during the implementation of the agenda for change

was that infrastructural development and social service were effective strategies to create jobs for youth including the cash for work programs (Sierra Leone Demographic and health survey,2013 PG 2).

TELECOMMUNICATION AND INFRASTRUCTURE

Mobile cellular total subscription stands at 6,279,270 as of July 2016. The CIA World Factbook states that “the telephone service is improving with the expansion of the mobile sector”.

The international code is +232, and the internet code is SL. The internet users were estimated at 708,615 users, which represent 11.8% of the population (July 2016). There are 8 airports, where one has a paved runway of over 3047m (2013). The road network is made up of 904km which are paved, and 10396km unpaved. Sierra Leone has over 800km of Waterways of which 600km is navigable year-round (2011). (CIA World Factbook)

The three major seaports are Freetown, Pepel, and Sherbro islands.

Total population	7,396,00 Million (World Bank 2016)
Population aged under 15	42% (2013)
Life expectancy at birth, total (years)	52
Population living in urban areas	39% (2013)
Total fertility rate	4.7 (2013)
Maternal mortality rate	1360/100000 live births (2015)
mortality rate under-5 (per 1000 live births)	111 (2017)
GDP	USD 3566 (2016)
GNI per capita	USD 480 (2016)

Table showing the general population and economic facts.

NATIONAL HEALTH PROFILE

According to the recent data from WHO *Year in Focus Sierra Leone Annual Report 2017*, Sierra Leone has one of the highest maternal mortality rates in the world. Maternal mortality rate stood at 1360 deaths per 100000 babies born (UN, 2015). Only 76% of pregnant mothers received four antenatal care visits during their pregnancy. Most maternal deaths are preventable or treatable or preventable with the right care at the right time. The greatest burden of disease is worse on the rural populations. Also, children in rural areas are more likely to be stunted and

wasted more than their counterparts in urban areas. (*National Health Sector Strategic plan NHSSP 2010-2015*).

1.1 Health infrastructure

Emerging from an armed conflict marked by extensive destruction of infrastructure, the health system experienced further devastation inflicted by the Ebola epidemic. There has been a gradual decline in health care funding which has resulted in ill-equipped government hospitals and lack of capacity to meet evolving demands in health care needs. Given the high poverty rates, the majority of the population cannot afford to pay for care in the better equipped private hospitals which leave them at risk of disease burden. The overall impact of this state of affairs is reflected in the country's poor health indicators. The bulk of payments for health services come from Out-of-Pocket (OOP) which stands at 70% (NHSSP 2010-2015) among the highest in Africa. Sierra Leone's healthcare system is based on the primary health care model, district hospitals for secondary care and regional/national hospitals for tertiary. The primary health care comprises of Peripheral Health Units (PHUS) which offer first line health services. They are further subclassified into the following:

1. Community Health Centers (CHCs): There are 227 CHCs, which are generally larger facilities that are meant to cover populations of roughly 10,000-20,000 individuals. They typically employ higher-skilled staff, such as Community Health Officers (CHOs), midwives and so on, with some focus on epidemiology and environmental health. Approximately 178 of these facilities also function as Basic Emergency Obstetric and Newborn Care (BEmONC) centers.

2. Community Health Posts (CHPs): There are 320 Community Health Posts, which are medium-sized facilities designed to serve a population of roughly 5,000-10,000 individuals. They are generally staffed by lower-skilled health workers, such as State Enrolled Community Health Nurses (SECHNs) and Maternal and Child Health Aides (MCH Aides).

3. Maternal and Child Health Posts (MCHPs): There are 616 MCHPs, which are meant to provide the first point of contact with the facility based health system. These facilities are meant to be located at the village level and serve populations of less than 5,000 individuals. They are largely staffed by MCH Aides.

Healthcare in Sierra Leone is provided by a mixture of government, mission, private and non-governmental organizations (NGOs).

Total expenditure on health as a % of GDP	11.1 % of GDP 2014 est. (CIA)
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The private health sector is underdeveloped compared to countries in the sub-region such as Ghana. Traditional healers and Traditional Birth Attendants (TBAs) are reported to be providing a

significant amount of health care, with TBAs attending to almost 90% of the deliveries at the community level. (NHSSP 2010-2015)

1.2 Free Healthcare Scheme

Healthcare costs remain very high in Sierra Leone resulting in poor utilization. A review commissioned by the ministry in 2007 established that even the modest charges tended to exclude over 50% of the population from seeking medical care. The health financing group (Abuja Declaration, 2005) recommends that Governments increases its per capita expenditure in health to 15% of public expenditure in order to improve on the declining per-capita expenditure in health. Among the health policies and reforms is the formation of the basic package of essential services and the free health care initiative for pregnant women, lactating mothers and children under five to alleviate the burden on the population (NHSSP 2010-2015).

A study conducted by Ejioma Edoke, et al: Changes in Catastrophic Health Expenditure in Post-Conflict Sierra Leone states that ‘while efforts have been made to address supply-side constraints to achieving healthcare in the years following the conflict in Sierra Leone, financial risks faced by the households persists’. The Basic Package of Essential Health Services (2015-2020) did not yield many results as intended, because it did not make health services more affordable or efficient (NHSSP 2017-2021).

1.3 The health workforce

According to the WHO Year in Focus Sierra Leone Annual Report-2017, *A Snapshot from the Human Resources for Health 2016*. There are a total of 19030 health workers in Sierra Leone, 9910 (52%) of these are salaried, 9120 (48%) are un-salaried. Sixty-three percent of the health workers are female while 37% are male. Sierra Leone experiences shortage of skilled health care providers (doctors, nurses, and midwives) with the most critical shortages in the mid and higher level tiers. 30% of the health workers are distributed in the rural while 70% is serving in the urban.

Nurses	5668
Community health officers	621
Doctors	313
Clinical specialists	41

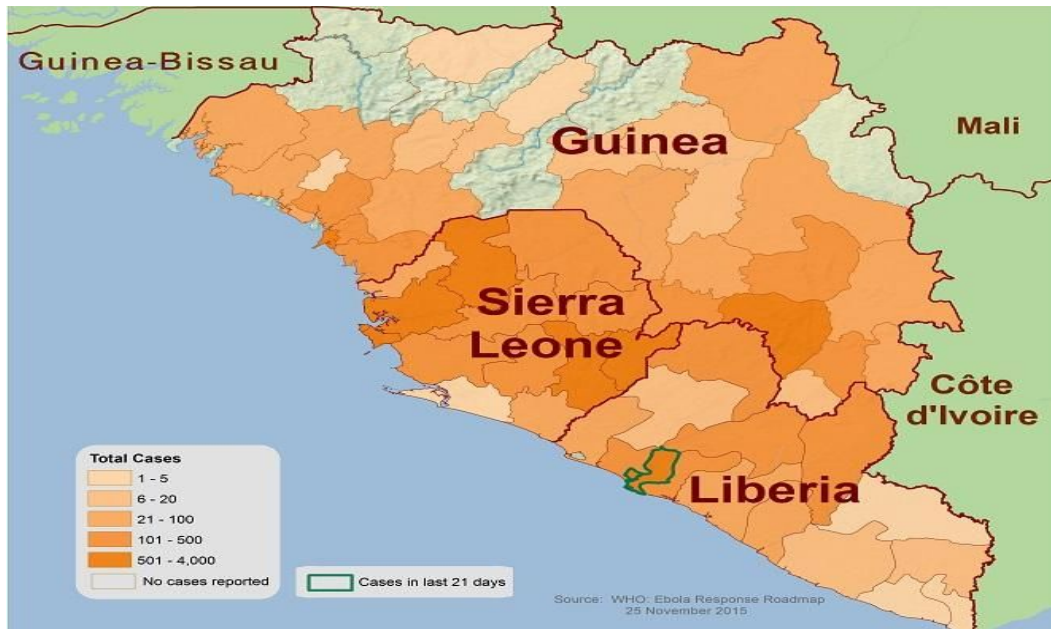
Data: 2016 Human resource for health country profile (MoHs, 2016)

There are over one hundred NGOs (Non-Governmental Organizations) operating in the health sector in Sierra Leone. According to the CIA-world factbook, physician density was estimated at 0.02 physicians per 1000 population.

The shortages of healthcare workers are aggravated by mal-distribution of staff, with the western area having a clustering of 46% of key cadres while 54% is in other three provinces with an average of 18% per province. (National Health Sector Strategic Plan 2010-2015).

1.4 Ebola

Center for Disease Control (CDC) Global Health-Sierra Leone reports that “the country suffered the highest number of confirmed or suspected cases of Ebola in West Africa, with more than 14000 cases and 3900 deaths. Together the United States Center for Disease Control (CDC) and the CDC foundation contributed more than USD 120 million to Ebola response, recovery and research activities, including establishing the country's first ever national Public Health emergency operations Centre. CDC supported (GOSL) Government of Sierra Leone in ending the outbreak, through technical and strategic support in epidemiology, infection prevention and control, case management, health promotion, laboratory diagnostics and strengthening, emergency management, border health, and research. It is estimated that more than 7% of the health workforce was lost during the Ebola epidemic.”



A Situation Map of the *Ebola Outbreak* as of 8 August 2014.

Top ten causes of death

1. Diarrheal Diseases

2. NTDs (Neglected Tropical Diseases) and Malaria
3. Cardiovascular Diseases
4. Neonatal Disorders
5. Diabetes/Urological/Blood/Endocrine Disorders
6. HIV/AIDs and TB
7. Neoplasm's
8. Unintentional injuries
9. Cirrhosis
10. Nutritional deficiencies

Source WHO 2012.

1.5 Mental Health

Mental health service delivery remains a challenging issue in Sierra Leone and critical gaps in staffing mean thousands are unable to access the services they need. With a population of seven million, Sierra Leone has two psychiatrists, two clinical psychologists, and nineteen mental health nurses (WHO). During the civil war (1991-2002) many soldiers took part in atrocities, and many children were forced to fight. This left them traumatized. WHO reports that there are an estimated 75,000 people with severe mental disorders and 35,000 with depression. Thousands of former child soldiers have fallen into substance abuse as they try to blunt their memories. Currently, only the Connaught hospital has a psychiatrist working with the king's health partners. The country has one of the oldest mental health acts in the world (The 1902 Lunacy bill), which is outdated because it does not follow human rights protection.

1.6 Regulatory, professional bodies and educational institutions –local and regional.

The following are the local and regional professional bodies. Their work is to register, examine and control the activities of the health care professionals nationally and regionally.

- **Pharmacy board**
- **Nurses and midwives board**
- **Medical and dental council**

- **ARWA**- Association of Radiologists of West Africa
- **WAMUS**- West African medical Ultrasound Society.
- The **COMMAHS**- College of Medicine and Allied Health Sciences is the only public college training doctors and other health workers.

There are several nursing schools and mid-level colleges offering various medical courses. A report on Human Resources for Health states that “Unlike the past when training was fragmented and haphazard, it is more ore organized due to the Human Resources for Health (HRH) Training Policy. The achievement is however constrained by the existing training capacity that is still to meet required service demand. The low ‘turn-out’ of health training institutions is due to several factors such as understaffing, poor infrastructure, inadequate learning, and teaching models, among others to match the existing demand.” (NHSSP 2010-2015).

AREA OF SPECIALITY/STUDY AND NUMBER		LOCATION				NEEDED	GAP	% SHORTFALL
		WEST	SOUTH	NORTH	EASTERN			
Public health	24	15	3	3	3	30	6	20%
Surgery/ Surgeons	5	3	0	1	1	26	21	81%
Physicians	3	3	0	0	0	26	23	88%
Clinical Pharmacologists	1	1	0	0	0	24	23	96%
Pharmacists	33	32	1	0	0	52	19	37%
Nephrologists	0	0	0	0	0	8	8	100%
ENTs	1	1	0	0	0	8	7	88%
Neurosurgeons	0	0	0	0	0	8	8	100%
Gastroenterologists	0	0	0	0	0	8	8	100%
Radiologists	1	0	0	0	0	30	29	97%
Pediatricians	2	2	0	0	0	30	28	93%

Obstetricians and gynecologists	5	4	1	0	0	26	21	81
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Health workforce distribution by category and region, NHSSP 2010-2015.

Radiology in Sierra Leone

Mr. Joseph William Ovat, the government CT scan consultant and radiographer in charge states that the government is embarking on a radiology service expansion plan to include the acquisition of CT and MRI scanners and the establishment of an Oncology center. Crucial to these plans is the engagement of a well trained and dedicated radiology workforce to operate and maintain sophisticated imaging equipment. There is no local radiographer in the health workforce. Current X-ray examinations are being taken by X-ray technicians with only basic knowledge of radiography. With neither a government nor a private institution to train radiographers, radiology services in the country will remain to lag behind given the rapid change of technology in this field and the growing population demands. Most of the objectives for radiology services from the NHSSP 2010-2015 have not been met up to now.

According to the National health sector strategic plan 2010-2015, there was only one radiologist in the country versus the required target of thirty radiologists countrywide. Currently, there are only two qualified radiologists and two more that are training. There is a huge gap that cannot be met in the near future given the growing population. Currently, there are no local trained radiographers in public hospitals. The government has trained approximately forty x-ray technicians on basic conventional radiography to work across the country's public hospitals. There are approximately six foreign radiographers and sonographers working in various private hospitals and imaging centers mainly within Freetown. The majority are from India, Ghana, Nigeria, and Kenya. There is no data available for the medical engineers in Sierra Leone; most private hospitals have employed foreign biomedical engineers mainly from Kenya and Ghana. There are only two (Computerized Tomography) CT scanner machines in the country: one 16-slice at Ecomed Advanced Medical Diagnostics center and 64-slice at Choithram Memorial Hospital all by GE Health Care.

The major government hospital in Freetown has a broken 2 slice CT scanner (since 2015), ultrasound and one functional x-ray machine. The two radiologists are based in Freetown and they also report for other private institutions. Other government hospitals have x-ray and ultrasound but no qualified staff to do the sonograms where most of them are referred to the already overwhelmed Connaught hospital. Ecomed, the only diagnostic imaging center in Freetown has a CT scanner, (Magnetic Resonance Imaging) MRI (the only one in the country), 4D ultrasound, digital x-ray, and Mammogram. Choithram hospital has a CT scanner, ultrasound, digital x-ray, mammogram (not functional), C-arm image intensifier and Endoscopy. The ministry of Energy and Nuclear Safety and Radiation Protection Authority monitor all radiation workers-medical and industrial and also issues practicing licenses.

The table below shows positions occupied by x-ray technicians with basic training in radiography across the country's public hospitals.

Hospital	Number of X-ray technicians	Hospital	Number of X-ray technicians
Connaught teaching Hospital	6	Lungi Government Hospital	0
Chest clinic, Connaught teaching Hospital	0	Kambia Government Hospital	0
Ola during children's Hospital	2	Kabala Government Hospital	1
Lakka Government Hospital	0	Koidu Government Hospital	4
Lumley Government Hospital	0	Bo Government Hospital	4
Waterloo Government Hospital	0	Kenema Government Hospital	4
Jui	1	Kailahun Government Hospital	0
Macaulay St.	0	Moyamba Government Hospital	2
Makeni government Hospital	3	Bonthe Government Hospital	1
Magburaka Government hospital	4	Pujehun Government Hospital	0
Port Loko Government Hospital	1	King Harman Road hospital	0

Source: Joseph William Ovat, Current radiography workforce in Sierra Leone.

CONCLUSION

Today, Sierra Leone is at crossroads. Following a decade-year long civil war, which ended in 2002, the little gains that the health care in Sierra Leone had achieved were greatly affected by the terrifying disaster when the Ebola epidemic arrived in 2014. The epidemic would go on to become the largest Ebola epidemic ever recorded. The WHO reports that there are 3,466 Ebola Virus Disease (EVD) survivors in the country with different health complications such as neurological, eye and ear disorders and mental health disorders. It is also estimated that 7% of the health workforce was lost during the epidemic. The Ebola epidemic and its aftermath brought a significant new level of focus and resources, both international and domestic, to the country's health sector (NHSSP 2017-2021).

It is evident there is a long way to go to achieve universal health coverage and the United Nations Sustainable Development Goals. This report has clearly highlighted the lack of resources in imaging equipment and the acute shortage of imaging staff: radiologists, sonographers, radiographers and biomedical engineers. In order for Sierra Leone to better health care, it needs assistance in funding for outside country training for imaging professionals, as well as establishing an exchange program/outreach initiatives that will help reach the rural and other urban centers apart from Freetown area.

These huge gaps in radiology if addressed can help in reducing the high maternal and under five mortality rates. It is evident that donor agencies have concentrated too much to primary health care and forgotten the crucial health technologies (including imaging) which is one of the WHO six building blocks that are essential for all health systems. According to the Philips Fabric of Africa, poorly equipped medical facilities, inadequate staff numbers and crumbling infrastructure are a serious concern in many corners of the African countries. Appropriate technology and training are important for delivering appropriate and effective care to patients.

Close interaction with the majority of the medical students and young doctors reveals that there are no radiology rotations in their clinical attachment and also lack of equipment make radiology discipline less attractive to them. Also, another reason given by the majority of the students is the deplorable condition of the radiology department in the main teaching and referral hospital that makes them shy away from taking radiology.

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