



THE STATE OF ERITREA

MINISTRY OF HEALTH

***High Level Achievements in the Annual Health Sector
Report of 2016***

December, 2016

High Level Achievements in the Annual Health Sector Report of 2016 in Eritrea

1. Introduction

The World Health Organization (WHO) defines health systems with the following key pillars; (i)The establishment of effective policies, strategies and procedures, (ii)the construction of physical infrastructure (iii)the use of appropriate technology (iv)ensuring the availability of medicines and medical supplies (v) effective and efficient services (vi) well trained human resources and (vii) appropriate health information system. Implementation of these pillars in an integrated and coherent manner is crucial for having efficient, effective, and responsive health systems that assure equitable access for individuals, families and communities. Currently, the Ministry of Health is functioning with 29 hospitals, 56 health centers, 195 health stations, 8 maternal and child health clinics, 60 clinics and a total of 9805 human workforce out of which the technical staffs are 6,228 and the administrative staffs are 3,577. This report is about the high level achievements in the health sector during the year 2016.

2. Health Sector Governance, Policy and Strategy

The Government of Eritrea accords health a prominent place in its priorities and it is committed to the attainment of health goals. In particular, the Government fully appreciates and continuously emphasizes the decisive role of the people in the development and self-reliance.

- As a continuation of the 2010 National Health Policy and the 2012-2016 National Health Sector Development Plan, the Ministry of Health (MOH) has developed a robust multi-sectoral second National Health Sector Development Plan that will guide the health sector to achieve the national and international health goals and objectives. This plan is costed based on the one health tool and is well accompanied by a Monitoring and Evaluation Framework that set national and international targets and indicators. Moreover, it has clearly laid down the implementation arrangements at different levels of implementation.
- All programs in the Ministry of Health have developed five years strategic plan that are well aligned with the sector strategic development plan.
- The MOH with its national and international partners has conducted Joint External Evaluation (JEE) on Health Security that laid the ground to develop the National Health Security Plan in early 2017.
- Developed National Traditional Medicine Policy Document
- Reviewed its annual implementation plan in which the strengths and weaknesses are identified and the challenges are addressed accordingly.
- GAVI HSS Grant developed and USD 12 million approved for 3 years
- Developed different training manuals
- Revised hospital clinical policy guidelines and protocols.
- Developed standard definition and functions of various levels of health care service delivery.
- Conducted biannual integrated supportive supervision (ISS) in health facilities.

3. Infrastructures

The development of health care infrastructure of health stations, health centers and hospitals in Eritrea was by enlarge based on need as determined by population density and availability of health facilities and other factors including feasibility. As a continuation of health facility constructions of the previous years, table1 shows the facilities under constructions and their status of accomplishment by end of 2016.

Table 1. Facilities under constructions & their status of accomplishment by end of 2016

Ser.No.	Facilities under construction	Status of accomplishment by end of 2016
1.	Orotta Radiotherapy Center	90%
2.	EdagaHamus Community Hospital	94%
3.	ENT Clinic in Orotta Hospital Complex	97%
4.	Barentu Associate Nurse School	97%
5.	Haicota Community Hospital	92%
6.	Erafaile Health Station	100%
7.	ElaBabu Health Station	80%
8.	Embatkala Health Station	90%
9.	Keren Maternity Hospital	65%

4. Research Conducted

In 2016 a total number of 76 researches have been conducted out of which 18 (27%) are conducted by students as dissertation papers for their first degrees and 58 (73%) are conducted by hospital staff and students at post graduate studies. Table2 below shows the areas of research study and the number of studies conducted. Moreover, the research database has been modified and made more user-friendly with close collaboration of an expert from WHO. Collection of research studies from different health stakeholders is being done routinely. More research results are on the pipeline to be included in the data base.

Table 2. Areas of research and researches conducted

Areas of Research	Number of researches conducted
Communicable Diseases.	12
Health Systems	12
Maternal and Child Health	31
Non communicable Diseases	17
Sexual & Reproductive Health	2
Traditional Medicine	2
Total	76

5. Provision of Health Services

It is generally accepted principle that provision of health services should be comprehensive in that they should include promotive, preventive, curative and rehabilitative. However, although treatment of illness and rehabilitation are important it should not only be curative, but also should promote the population's understanding of health and healthy life styles, and reach towards the root causes of disease with promotive and preventive emphasis. In principle, the MOH is increasingly emphasizing promotive and preventive services besides the curative services. Similar to the previous years, in 2016 the percentage of immunized children has been at over 95%, the reversal and stabilization of HIV infection in the general population has been maintained as low as below one percent, there has not been any cases of polio and neonatal tetanus, and the control of measles and malaria have been very encouraging aiming at towards elimination stages of these two epidemic prone diseases.

One of the lifesaving services in the health sector is the provision of safe and adequate blood supply nationwide through a well-functioning centrally coordinated National Blood Transfusion Service (NBTS). In 2016 a total of 6,687 blood units have been collected from 85 schools, ministries and different institutions. Blood collection procedures include, among others, risk assessment, blood grouping and Rh typing, screening and testing for HIV, hepatitis B & C, and syphilis before distribution. Around 85% of blood donors are volunteer blood donors.

On top of the routine services conducted by national experts, the MOH has continued the partnership it had with a number of foreign visiting medical teams, namely Italian orthopedic team, German pediatric cardiac & plastic surgery team, ARCHEMED, Hammer Forum, ALBASAR from the Sudan, Egyptian and Sudanese teams of orthopedic and general surgery. All these teams visited Orotta, Halibet and BerhanAyni hospitals. They have screened and operated a number of cases based on their areas of expertise. For example:-

- The Hammer Forum group did skin graft (full and partial thickness), contracture release and tendon replacement surgeries.
- The Italian orthopedic team mainly worked on pediatric orthopedic problems; in its last mission the operations conducted were mostly on femoral osteotomy and K-wire fixation, ATL and foot deformity correction procedures.
- The Egyptian team dealt with arthroscopy, and condylar and femur plate fixation and DHS and the general surgeon participated on breast surgeries and different abdominal surgeries.
- The ARCHEMED group did pediatric cardiac surgeries.
- The ALBASAR, Sudanese & Egyptian ophthalmic experts also performed screening and surgical interventions on cataract, glaucoma & retina problems.

6. Medical laboratory services

Medical laboratory services in Eritrea are an integral part of the health care provision. This implies that medical laboratories are usually attached to health facilities. The capacity of the laboratory is dependent on the level of health service. Thus, similar to the health delivery system, the laboratory network follows a pyramidal structure supervised technically from the head quarter. In 2016, Orotta and Dembe Semble Hospital laboratories have started conducting HA1C as a continuation of the decentralization of laboratory services.

The National Health Laboratory NHL) conducted and coordinated quality assurance and training activities and received certificate of quality achievement from the South African NHL for TB & malaria identification. As Usual, in 2016, the NHL served as a training site for CLS and MLT students from the Asmara College of Health Sciences and a research center for those who conduct scientific studies for their PHD, Masters or 1st Degree from different colleges. There were 8 groups from the 1st degree who did their research at the microbiology department of the NHL.

With the help of a consultant from the Supra-national Laboratory of Uganda, the NHL developed 3-Manuals for TB Lab (Clinician Hand book, Quality Manual and safety manual) and 35 SOP's and have been able to culture 110 specimens collected from TB suspects (MDR and none MDR TB cases). The TB laboratory department has received a certificate of achievement from NICD/WHO-South Africa.

7. Provision of Essential Medicines and Medical Equipment

Medicines constitute an integral part in the prevention and treatment of diseases. Readily available, affordable, of good quality and properly used medicines can offer a simple cost-effective answer to many health problems, and thus can promote trust and participation of the population in the health services. In 2016 all essential medicines have been made available and none of them have been out of stock although there have been some stock out for other non-essential medicines for some days or months. All medicines for chronic non-communicable and communicable diseases have been made available at all times. Expenditure on medicines also constitutes a considerable portion of health budget, that optimal utilization of resources is imperative. Medicine information bulletin was printed and distributed on quarterly bases.

The functioning Logistics Management Information System (LMIS) was assessed for its completeness and validity in 2013. Based on the results of the assessment made, the MOH took initiative to upgrade it in 2013. Thus the process of upgrading the LMIS database to MySQL has been completed successfully in 2016 and has started functioning. This system will show the consumption of all medicines and will be valuable for forecasting the need of medicines and avoid stock out and expiry of medicines and medical supplies.

8. Maternal and Child Health

Among the priorities of concern for the government towards sustainable development were improvements of maternal and child health for which it has been exerting its efforts to meet the Millennium Development Goals (MDGs) particularly MDGs 4 and 5. As a result of these efforts, Eritrea has achieved all the health-related MDGs. In the second five years health sector strategic development plan (HSSDP II 2017-2021), the MOH has again prioritized maternal and child health as unfinished issues of the MDGs and the succeeding of the Sustainable Development Goals (SDGs).

Maternal Health - Other than the routine maternal health services, the following important services have been accomplished:

- Basic Life Saving Skill (LSS) training for health workers using basic LSS manual (with 10 modules) and Clinical Safe Motherhood Protocol.
- A total of 73 Obstetric Fistula repair was done as a routine procedure in Mendefera Referral Hospital by national experts and experts from Stanford University. Effectiveness of the repair indicated that 6 mothers who had successful repair gave birth safely and they are healthy with their children.
- Provision of waiting homes is a proven strategy that could help in the improvement of access for pregnant mothers who are living in remote areas. There are about 43 functional maternal waiting homes. In 2016, a total of 2,725 pregnant women were delivered in health facilities after their stay in the maternity waiting homes. The numbers of beneficiaries of the maternity waiting homes are increasing from year to year.
- The proclamation number 158/2007 on the banning of Female Genital Mutilation/Cutting (FGM/C) is getting high momentum where significant numbers of villages are declaring FGM/C Free Villages in many of the zones preparing towards FGM/C Free Sub-zones in 2017.
- Campaign to end Child Marriage/Early Marriage was organized and implemented with all partners including African Union representatives in 11th June 2016;

Child health – other than the routine child health services, the following important activities have been conducted in 2016:

- Integrated Management of New-born & Childhood illness (IMNCI) is a strategy that improves quality of care in children. This strategy was adopted in 2000 as response to the high early childhood mortality and morbidity in Eritrea. Eritrea has made consistent progress over the past years in reducing child deaths. Both the facility and community based health services contributed to the reduction of child morbidity & mortality. In 2016, IMNCI has been implemented vigorously to reach every child with the newly adapted modules of IMNCI.
- Extended program on immunization is one of the successful programs in Eritrea. The country provides eleven types of vaccinations. The coverage of immunization has been

maintained at over 95% for the last 10 years. This is believed to have contributed to the reduction of infant and child deaths in the country.

- Cold chain assessment was conducted in all levels and health facilities providing routine immunization service with technical support of external consultant recruited through UNICEF country office.
- In August 2016, the Technical Advisory Group (TAG) for polio eradication in the Horn of Africa has provided country specific and cross cutting recommendations to be implemented as polio eradication initiative. Based on the recommendations, Eritrea has implemented one polio National Immunization Days (NIDs) at national level in all districts for children age group <59 months. Vit. "A" supplementation was integrated with the NIDs.
- Eritrea switched from tOPV to bOPV as of 28th April, 2016. All districts had recalled trivalent oral polio vaccine (tOPV) and have introduced bivalent oral polio vaccine (bOPV) into routine immunization services on that same date.
- Eritrea has conducted polio outbreak simulation exercise. The objectives of the exercise were: (i)To ensure early investigation and detection of any imported wild polio virus &cVDPV in the country (ii)To make early notification of the confirmed wild poliovirus or cVDPV in the country and (iii)To take timely and appropriate action to interrupt further transmission of the polio virus within the specified period of time and place.
- Eritrea conducted Meningitis-A risk assessment aiming at defining priority areas and to estimate target population for vaccination before the introduction of the vaccines and conducting campaign of Mn-A vaccine. The assessment was conducted during the last half of 2016 with the technical support from WHO. Based on the findings of this assessment, Eritrea will conduct nationwide meningitis preventive vaccination campaign targeting all people aged 1 to 29 years in two phases to be conducted a few months apart, to ensure a quality campaign with careful management of logistics and programmatic issues, as well as sound communication & advocacy and thorough monitoring & evaluation. The campaign is planned for 2018.

9. Prevention, Control and Management of Communicable Diseases

The main communicable diseases that are prioritized for prevention and control are HIV/AIDS/STI, TB, Malaria, NTDs that include diseases such as Schistosomiasis, Leishmaniasis, Intestinal helminthiasis, trachoma and hepatitis etc. Eritrea has made remarkable achievements in the prevention and control of HIV/AIDS, Tuberculosis and Malaria. In fact it has achieved the MDG targets before 2015. In 2016 the following major activities have been conducted.

HIV/AIDS control program:

- PCR for EID is initiated in all zones
- Syphilis test is ongoing alongside with rapid HIV test
- PMTCT and SRH services are integrated in all facilities

- TB screening for all patients in care and treatment and provision of IPT is on-going
- TB and HIV Program is well integrated in provision of prophylaxis, initiation of ARVs and screening
- HIV counseling and testing (HCT) is the main entry point of prevention of HIV infection and care and treatment of the already infected people. By end of 2016, a total of 255 HCT sites are fully functioning throughout the country. Eleven of the HCT sites are free standing and the rest 244 are integrated HCT sites. As the number and distribution of HCT sites are expanding from time to time, the number of HCT clients also showed great increase from year to year. In the last 12 years almost 1 million people were tested voluntarily for HIV to know their status. This is a good indication of increased risk perception, reduction of self-imposed stigma and initiation of behavior change exhibited in the population. In 2016, a total of 67,687 people were tested for HIV and received their results.
- There are 234 sites that provide HIV testing services for pregnant women in the country integrated in ANC/MCH clinics. These sites are located in hospitals, health centers, health stations and in free standing sites. As PMTCT sites they have the component services of PMTCT that include: primary prevention, FP to avoid unintended pregnancy, provision of ARV for pregnant women and prophylaxis for the infants and early infant diagnosis for the HIV exposed infants. The uptake of PMTCT services in 2016 was 66,446 (87.7 %) of ANC attendees. To reach the EMTCT phase, every HIV positive pregnant mother has to start lifelong ART. In 2016, all HIV positive pregnant mothers are accepting ART although four mothers refused ART, making the ART coverage in pregnant HIV positive mothers to be 98%.
- All zones are conducting early infant diagnosis by using the DBS. In 2016, a total of 328 HIV exposed infants were tested for HIV and only 3 (0.9%) infants tested positive.
- ART is effective in prolonging life and improving the quality of life for people living with HIV/AIDS and as an important tool for prevention by reducing the transmission of HIV infection. The program is strengthening the existing ART sites and scaling up the provision of ART in ANC sites so that pregnant women receive their treatment without referral to other sites. In 2016, a total of 789 new patients have started ART and the total number of patients currently alive and on treatment reached 8,696.
- Condom distribution and appropriate use remains one of the main methods to reduce the risk of HIV & STI infections in sexually active people. In 2016, a total of 5,399,653 male condoms and 5,311 female condoms were distributed by the MOH health facilities and ESMG.

Tuberculosis control program:

Tuberculosis (TB) remains a major global health problem. Despite the fact that nearly all cases can be cured, TB remains one of the world's biggest threats. The latest WHO TB estimates revealed that Eritrea carries the burden of TB in 2014 at incidence of 65/100,000 (reduced from 78/100,000 in 2014), prevalence at 123/100,000 (reduced from 153/100,000 in 2013) and mortality 12/100,000 (reduced from 14/100,000 in 2014). Multi Drug Resistance TB (MDR-TB)

was estimated to be 1.7% (reduced from 1.9% in 2013) among new cases and 17% (reduced from 20% in 2013) among re-treatment cases. Six per cent of TB cases were also found to be HIV co-infected with 95% of TB cases being screened for HIV (REF: WHO Global TB Report 2015).

In 2016, the Tuberculosis control program has conducted the following major activities:

- The program was able to notify 1760 TB patients (all forms new and relapse) - showing a mild increment (9.7%) from that of 2015. Among the 1760 notified cases 63% were pulmonary TB and the rest were extra-pulmonary TB.
- The WHO currently recommends countries to achieve and maintain treatment success rate at or above 90%. The treatment success rate of patients who were registered in three quarter of 2015 and evaluated in the same period of 2016 was maintained as global target which is 90% for both bacteriologically confirmed and clinically diagnosed (new and relapse) cases.
- With regards to TB/HIV activity, gradual increase is observed on both treatment success and reduction of death among TB/HIV co-morbid. The treatment success rate among TB/HIV co-infection is reached 85.2% from 80.5% of the same period of 2015, and death rate has reduced to 9.9% in the past three quarter of 2016 from 13.8% the same period of last year. The main reason for the reduction of death among TB/HIV co-morbid patients might be the increased number of patients initiated for ART.
- Similarly, screening of TB patients for HIV increased remarkably and reached 99%, and, the ART uptake among TB/HIV co-infected reached 97%. The result revealed that both TB and HIV programs are collaboratively worked in all activists e.g. training, supervision, review meeting and other activities.
- In 2016, a total of 15 MDR-TB patients were admitted to Merhano MDR-TB Hospital. All of the patients are confirmed cases of Rifampicin Resistance. Three of the 15 confirmed cases were not previously treated with first line anti-TB drugs. However, the treatment success rate of MDR-TB patients among the registered in the three quarters of 2014 was 82.3%. This was confirmed through culture after the end of the treatment period. The result was high as compared to the standard of at least 75% among enrolled MDR-TB.
- Currently the number of GeneXpert machines has increased to 13 and each zoba is equipped with at least one machine. A total of 526 samples of suspected cases were tested with GeneXpert machines out of which 142 were sensitive for rifampicin, 15 were resistant to rifampicin, there was no MTB in the 212 samples and one was invalid.
- Currently the program is focusing on increasing case detection and addressing the so called high risk groups including prisoners and diabetic patients. Among the 50 suspected cases of prisoners 8 were found to have TB. Similarly, of the total of 702 TB patients screened for diabetes 4 were found to have diabetes and 2312 diabetic patients who were screened for TB 5 of them were found to have TB.

Malaria control program:

- Due to the concerted efforts made, malaria morbidity and mortality had drastically reduced from that of the 1998 status achieving the MDG target before the year 2015.
- During the months of January to November 2016 a total of 83,727 malaria cases were reported from all the zones and the national referral hospital. This shows that number of patients treated for malaria has more than doubled in 2016 compared to 2015. The very little rainfalls in 2015 and the high rainfall received in most zones in 2016 partly explain the difference in the national case load. Moreover, lax in early treatment by the public and non-rapid notification of anomalies in malaria trends particularly in areas where malaria burden drastically declined in the past decade might have contributed to the increase in morbidity.
- In 2016, the program has delivered a total of 56,730 bed nets to pregnant women attending ANCs and 99,823 bed nets to communities who were missed during the mass campaign in 2015 making a total of 156,553.
- Investigation of false-negative RDT results has been conducted with results showing genetic mutation of HRP-2 target antigen of *P. falciparum* parasites and has resulted in recalling all RDTs from facilities and CHAs. This has created a gap in malaria diagnosis where service providers without microscopy facilities were urged to treat suspected malaria cases on clinical suspicion.
- The program has conducted two different studies related to efficacy of anti-malaria drugs and insecticides. In addition, report writing for Bed Net Utilization survey that was conducted by end of 2015 has been completed.
- Although morbidity has increased in 2016, Eritrea is aiming at towards pre-elimination stage for malaria in sub-zones based phases in which this has been detailed in the five years strategic plan of 2017 – 2021.

Neglected Tropical Diseases Program:

Eritrea is one of the developing countries who performed exemplarily well in the prevention and control of communicable diseases through primary health care. As was the case with most other developing countries, some, if not all, of the Neglected Tropical Diseases (NTDs) have not received the attention they deserve. Nine out of the 19 WHO Africa Region priority NTDS exist in Eritrea. These are Schistosomiasis, Lymphatic filariasis (LF), Soil Transmitted Helmenthiasis(hookworms, Ascaris, Trichuris trichiura, etc..), Trachoma, Leishmaniasis, Leprosy, Brucellosis, Rabies and Dengue Fever. In Eritrea, although some elements of services are being provided for all of them, Trachoma, Schistosomiasis, Lymphatic filariasis (LF), Dengue Fever and Soil Transmitted Helmenthiasis are prioritized for prevention and control based on their prevalence and their gravity in the wellbeing of the person.

In 2016, the following major activities have been conducted:

- Mass Drug Administration (MDA) for soil transmitted helminthiasis especially Schistosomiasis in six endemic subzones. Additionally, MDA was carried out in two schools and one administrative village.
- Mass Drug Administration (MDA) for trachoma endemic subzones
- MDA to LF was conducted successfully in the only one endemic subzone.
- Routine prevention and control measures have been carried out for all identified NTDs accordingly.

10. Prevention, Control and Management of Non-Communicable Diseases

The top ten leading causes of outpatient and inpatient morbidity in Eritrea in the last decade were acute respiratory infections, diarrhea, anemia and malnutrition, skin and eye infection, malaria and HIV/AIDS. Notwithstanding the above mentioned however, non-communicable diseases like cardio vascular diseases, diabetes mellitus, hypertension, cancers, liver diseases, ophthalmic disorders, chronic respiratory disease, gastritis and duodenal ulcer, oral dental infections, mental health disorders, injuries and violence are emerging as among the top ten leading causes of morbidity and mortality in adults creating a situation where the country is tackling a double disease burden.

The main intervention areas are to promote healthy lifestyle and improve the physical, mental and social wellbeing of individuals and communities by initiating multidisciplinary programs that will contribute to the prevention, control and management of non-communicable diseases.

Most NCDs are strongly associated and causally linked with four behaviors: tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol. These behaviors lead to four key metabolic/physiological changes: raised blood pressure, overweight/obesity, hyperglycemia and hyperlipidemia. As in the previous years, in 2016, the MOH programs in this area have focused on the four risk behaviors, the expansion of WHO-PEN services and ensuring the availability of medicines for these chronic diseases.

As a continuation phase of Rheumatic Heart Diseases (RHD) assessment, the MOH with the Italian experts (UNCORE UNMONDE MASSA) - a team of cardiologist has done an assessment of RHD in which a total of 507 (Male-220 & Female-287) students have been screened. Students with normal heart have all been properly educated to primary prevention, while students with ultrasound examination suggestive for rheumatic heart disease and congenital heart disease were referred to referral hospital to start an adequate program of follow-up and secondary prevention.

Mental health is an essential and integral component of health as defined by the World Health Organization (WHO). National mental health policy and plan of action 2017-2021 has been developed and psychotropic medicines have been made available to hospitals. The establishment of outpatient mental health service has been in good progress. By 2016 all zones have at least one psychiatric nurse. In addition, hospitals have started inpatient services.

The provision of early detection of causes of blindness, treating minor eye health problem and referring serious eye infection to specialized level are the core strategies of the program to prevent and control avoidable blindness. During the year 2016, a total of **83,498** persons received eye care service for different eye infections and visual impairment at eye care facilities. A total of **7,621** minor and major eye surgeries were performed in all the eye health clinics with surgery service capacity.

11. Environmental Health

Environmental health service comprises those aspects of human health, including quality of life that is determined by physical, biological, social and psychological factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling and preventing those factors in the environment that can adversely affect the health of present and future generations.

The main contributing factors to environmental health related diseases in Eritrea are inadequate and unsanitary facilities for excreta disposal, poor management of liquid and solid wastes, and inadequate practices of hand washing with soap that leads to contamination of food and water in both rural and urban areas. This is mainly due to a population, which lacks awareness, inadequate participatory hygiene education and environmental health promotion approaches in school and communities as well as uncoordinated delivery of effective environmental health services.

To ameliorate the problems related to environmental health, the MOH is with its partners is focusing and implementing the Community Led Total Sanitation (CLTS) aiming at rural communities while at the same time pursuing urban sanitation altogether. In 2016, a total of seventy-eight villages have been triggered and forty-four villages had declared Open Defecation Free across the six zones of the country. By the end of 2016, the CLTS approach has triggered 1073 (40%) villages and 732 (27.3%) villages declared Open Defecation Free nationwide since 2009.

Health Care Waste Management (HCWM), workplace safety including mining areas and water safety are among other priorities in environmental health where encouraging steps and activities are being taken.

12. International Health Regulations, Quarantine & Inspection

The MOH has been striving to build the core capacities for the International Health Regulations (IHR 2005) as well as strengthen the quarantine & inspection services to contribute to the maintenance of the health of the population by preventing the introduction, transmission or spread of communicable diseases of national and international public health concern into Eritrea through the designated point of entries (international air ports, Sea ports and ground crossing).

In 2016, the MOH with its national and international partners has conducted a Joint External Evaluation of the status of the IHR implementation in Eritrea. The process has included many consultations, desk reviews and validation workshops for which the findings will be the bases for the development of comprehensive five years national health security plan.

Routine quarantine and inspection services are conducted at the designated points of entry including checking for febrile cases, certificate of yellow fever vaccination for those coming from yellow fever endemic countries. Fortunately, there has not been any caseeligible for quarantine.

13. Development of Human Resource for Health

Human Resource for Health (HRH) is one of the six building blocks of a health system. Health workers are indispensable, cornerstone of health care delivery system which can influence access, quality, and costs of health care and effective delivery of interventions for improvement in health outcomes. For this purpose, the MOH has a well-developed policy and strategy. The following two tables (tables 3 & 4) show the number of students studying for masters' degree via Distance Education& Fellowship and those that are enrolled in the Asmara College of Health Sciences for advanced placement in the different areas of skills.

Table3.Number of students studying for masters' degree via Distance Education & Fellowship

Type of Programs	Year Started	Total Number	Remark
Masters in Nursing and Global Health	2013	21	University of Dundee Scotland (5Nur16GH)
Masters in Epidemiology and IT Management	2013	2	University of Liverpool Completed
Masters in Infectious Disease	2014	1	London University
Masters in Infectious Disease	1=2014 2=2015	2	University of Edinburgh
Master program on various areas of study	2015	7	UK uni.
MSc in Mental Health	2016	1	Nigeria
MSc in Laboratory Sciences	2015-2017	7	Gezira UNI
MSC in Entomology & Vector Control	January 2017-2018	4	University of Gezira Sudan
Masters in Anesthesia and Critical Care	2016-2018	8	At ACHS (In country)
Total		53	

Table4.Students Enrolled for Advanced Placement in Academic Year 2016/17 at ACHS

Ser.No.	Areas of study	Students enrolled
1.	BSc in Midwifery	19
2.	BSc in Anesthesia & Critical care	5
3.	BSc in Pharmacy	2
4.	BSc in Clinical Laboratory Science	6
5.	BSc in Public Health	2
6.	BSc in Mental Health	1
	Total	35

14. Others

The Oxygen Production Plant at the Orotta Hospital Complex -had a total of 74,350 m³ Production of Oxygen gas plus direct line supply. This is an increase of 63,455 m³ (17.2%) from that of 2015 production. This costs about 4.69 million Nakfa.

Health Information System - The mission of the Health Information System (HIS) is to ensure availability and accessibility of accurate, relevant and timely information to support informed decision policy formulations, planning and managing services at all level through collecting, processing analyzing and interpreting data using appropriate information technologies. In 2016, the following major activities have been carried out:

- Developed five years (2017-2021) Eritrea Health ICT Design and Planning.
- Integration of the different network infrastructures of MOH and channeling of internet provision through a centralized system is accomplished. Fiber optic link between the main centers (the Head Quarter, Minister's office and HRD/ICT Center) is also done.
- Annual Health Service Report activity (AHSR) of 2015 was made available for program managers via email for their information and use.
- Upgrading the system to web-based started at the end of 2015 in collaboration with University of Oslo experts. Most of the previous DSS data is imported to DHIS2 and is accessible for those who have internet actively linked the HMIS office.
- Currently, there are 348 different types of health facilities that report to HMIS headquarter monthly.

National Medicines and Food Administration (NMFA)—is the regulatory body for the control of manufacture, importation, exportation, distribution, use and advertisements of drugs, medical devices and cosmetics under proclamation No. 36/1993.

- During the year 2016, a range of activities have been executed related to capacity building, drug safety monitoring, registration, inspection, quality testing and publication of SOPs and guidelines.
- At present, the NMFA has 28 technical staff among which 1 has an MSc degree, 18 have B. Pharm degrees, 3 have BSc Chemistry degrees, 2 Clinical Laboratory Science degree, 1 Medical laboratory technician, whilst 3 have Pharmacy technician Diplomas.
- Using the Blue form and continuous sensitization of health professionals, detection of quality defects have increased by 80%. Two cases (H-pylori test kit and Insulin syringe) have shown serious quality defects and are under further investigation. Similarly, the system ascertained to detect three non-compliant batches of WHO prequalified anti-TB products which has driven the NMFA to reinforce the site inspection mandate as a regulatory requirement for registration. The NMFA has successfully drafted the medicines schedule manual.
- The MOH took the initiative to offer a regional advanced course and harmonization conference on Pharmacovigilance from 10-17 April, 2016 in Asmara, under the theme “Developing Proactive Pharmacovigilance and Risk Management Strategies in East Africa”. The course brought together 81 participants from 10 African countries and other

six countries from Asia, USA and Europe. Following the East African advanced Pharmacovigilance Course, the centre has introduced new methods of signal analysis and generated **seven safety signals** which will be submitted to the National Medicines and Therapeutics Committee for validation and risk mitigation strategies in early 2017.

- From January to December 31, 2016, Eritrean Pharmacovigilance Centre received a total of **1308** individual case safety reports (**ICSRs**) from all zobas and submitted **1010** adverse drug reaction and product quality reports to the International Drug Monitoring Centre, Uppsala Sweden.

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