World Health Organization

ANNUAL**REPORT2018**

Cover photo — WHO / File photo

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CONTENTS

ACRONYMS

ACCEL	Academic Consortium Combating Ebola in Liberia
ACT	Artemisinin-based Combination Therapy
AEFI	Adverse Events Following Immunization
AFP	Acute Flaccid Paralysis
AFRO	Regional Office for Africa
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
AMR	Antimicrobial Resistance
ART	Antiretroviral Therapy
AVADAR	Auto - Visual AFP Detection and Reporting
AVW	African Vaccination Week
CDC	US Centers for Disease Prevention and Control
CD4	Cluster of Differentiation 4
CHAI	Clinton Health Access Initiative
DHIS	District Health Information System
DPT	Diphtheria Pertussis Tetanus
DQIP	Data Quality Improvement Plan
DR-TB	Drug Resistant Tuberculosis
EPI	Expanded Program on Immunization
EPR	Epidemic Preparedness and Response
ePMDS+	Electronic Performance Management and Development System
EVD	Ebola Virus Disease
GAVI	Global Alliance for Vaccines and Immunization
JEE	Joint External Evaluation
HIV	Human Immunodeficiency Virus
IHR	International Health Regulations
IDSR	Integrated Disease Surveillance and Response
IM	Independent Monitoring
IPC	Infection Prevention and Control
IPT	Intermittent Presumptive Treatment
IOM	International Organization for Migration
ISS	Integrated Supportive Supervision
gCHVs	general Community Health Volunteers
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GLAAS	Global Assessment and Analysis for Sanitation and Drinking Water
GLRA	German Leprosy and Tuberculosis Relief Association

GSM	Global Management System
KPI	Key Performance Indicators
LDHS	Liberia Demographic and Health Survey
LISGIS	Liberia Institute of Statistics and Geo-Information Services
LLIN	Long Lasting Insecticide-Treated Nets
LQAS	Lots Quality Assurance Sampling
MCV	Measles Containing Vaccine
MNDSR	Maternal Newborn Death Surveillance and Response
MIS	Malaria Indicator Survey
MDR-TB	Multi-Drug Resistant Tuberculosis
mhGAP	Mental Health Gap Action Program
MoH	Ministry of Health
MOV	Missed Opportunities for Vaccination
NAC	National AIDS Commission
NCD	Non-Communicable Diseases
NCC	National Certification Committee
NLTCP	National Leprosy and Tuberculosis Control Program
NPEC	National Polio Eradication Committee
NTD	Neglected Tropical Diseases
NRL	National Reference Laboratory
OFDA	Office of Foreign Disaster Assistance
PIE	Post Implementation Evaluation
PIH	Partners in Health
PLHIV	People Living with HIV
RRTs	Rapid Response Teams
SARA	Service Availability and Readiness Assessment
SDGs	Sustainable Development Goals
TB	Tuberculosis
TTMs	Trained Traditional Midwives
UN	United Nations
UNDSS	United Nations Department of Safety and Security
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
VPD	Vaccine Preventable Diseases
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

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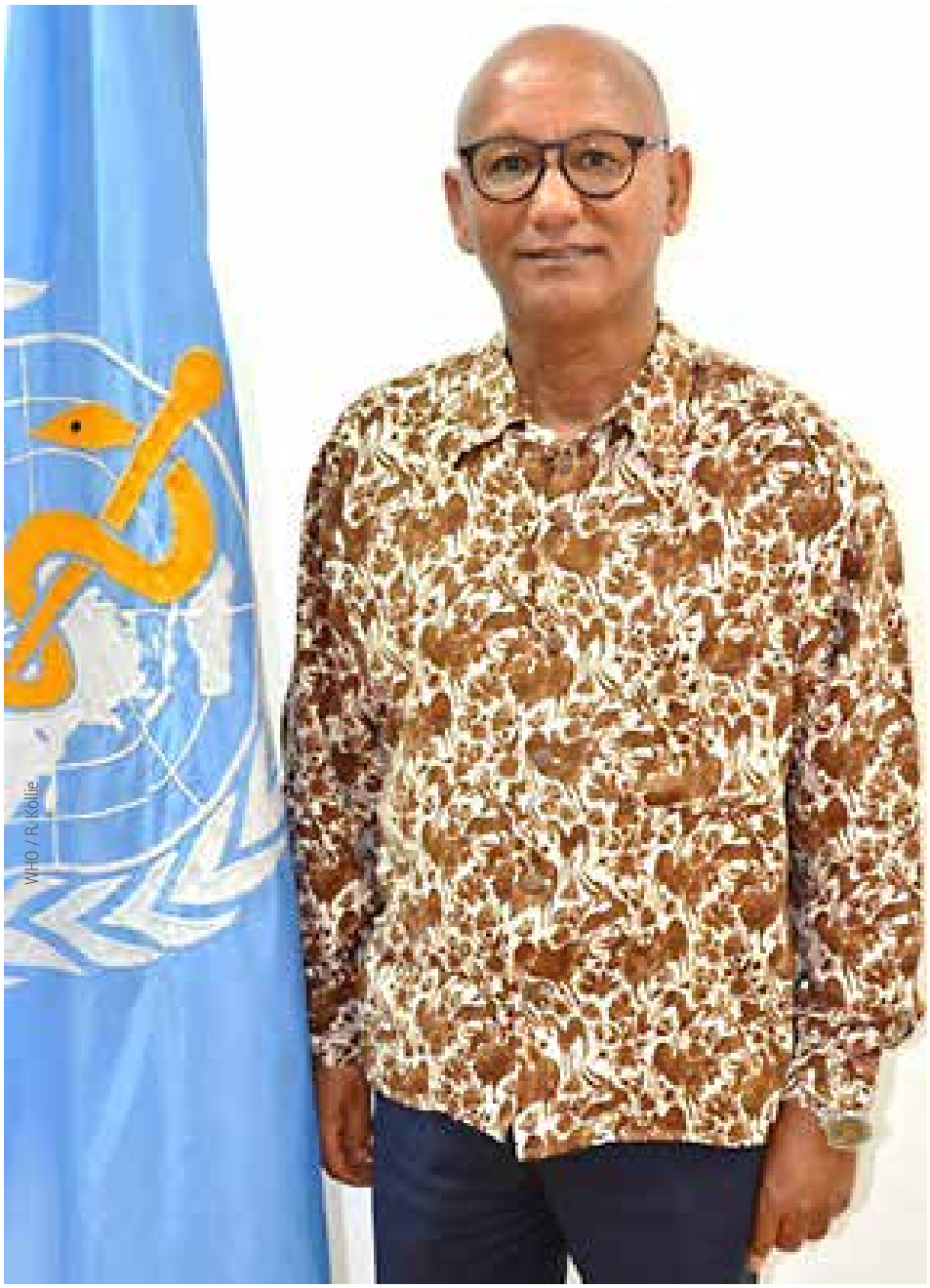

The 2018 WHO activities implemented were in line with the National Investment Plan and National annual Health Plan with focus on the priority health system actions that need to be accomplished for the overall attainment of the health goals of Liberians.

- Dr. Mesfin G. Zbelo -

PREFACE

The 2018 Annual Report highlights the WHO country office's (WCO) core roles and responsibilities in leading, managing, implementing and coordinating WHO strategic and operational functions with intent to realize health outcomes in line with national priorities, regional and global commitments, WHO's General Program of Work (GPW) and Sustainable Development Goals (SDGs).

The report represents our collective effort arising from the experience of the lessons learnt in previous biennium with a focus on building a resilient health care system. The 2018 WHO activities implemented were in line with the National Investment Plan and National annual Health Plan with focus on the priority health system actions that need to be accomplished for the overall attainment of the health goals of Liberians.

We acknowledge the valuable inputs provided by the WCO cluster team leads, program managers/ technical staff, Administrative staff, support staff and WHO county field team staff for their hard work in 2018.

In a special way, we thank the Ministry of Health, National Public Health Institute of Liberia, One Health platform, 15 county health teams, 93 district health teams and health workers in all the 857 health facilities, for their trust and cooperation with WHO Liberia team. We are exceptionally grateful to the people we serve, the residents of Liberia, for allowing us to serve them.

Special appreciation to the former WHO Representative, Dr. Alex Gasasira, for his leadership and guidance to the WCO, MoH, NPHIL and partners that supported achieving the government of Liberia health goals; and to WHO AFRO regional office and WHO headquarters for the technical and financial support that enabled us to deliver on our mandate to the government of Liberia.

Finally, I want to thank all the development partners and donors for the financial support to WCO-Liberia that enabled us to achieve our 2018 objectives.

Dr. Mesfin G. Zbelo
WHO Representative, Acting

EXECUTIVE SUMMARY

The 2018 WCO-Liberia annual report highlights progress, challenges, lessons learnt in the implementation of the programme of technical cooperation with Government during the first half of the 2018-2019 biennium. It further details the achievements gained during the implementation of the different categories of work, consistent with the Transformation Agenda of the African Region, focusing on efforts to improve efficiency, compliance and accountability in operations, technical areas of work and strategic partnerships to enhance WHO contribution to the provision of quality healthcare services for the people of Liberia.

Summary of the notable achievements are described below:

1. **Health system strengthening:** The 3rd Generation Country Cooperation Strategy completed and approved , 2018 SARA conducted with report available for planning and review, 15 counties' operational plans validated and funded, National Health Review Conference completed and recommendations being followed, the WHO 13th General Programme of Work disseminated to Government and partners and aligned with the National Health Policy, Investment Plan, and Pro Poor Agenda for Prosperity and Development (PAPD).
2. **WHO Health Emergencies:** 99 disease outbreaks and public health events investigated and responded to within 48 hours, 777 (100%) health facilities and catchment communities with capacity to implement IDSR achieving 98% completeness and 92% timeliness, 52 Early Warning Epidemiological weekly bulletins produced and disseminated, IHR country self-assessment completed and report disseminated, Annual surveillance review and operational plan completed, National Action Plan for Health security developed and launched, National Infection Prevention and Control Guidelines produced and disseminated, Antimicrobial Resistance National Action Plan produced and disseminated, 84.6 diseases outbreaks requiring laboratory confirmation confirmed within 48

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hours of alert, AMR laboratory surveillance decentralized to five (5) additional hospital laboratories in 4 counties (geographical coverage increased to 47%), 1771 patients received advanced laboratory diagnostics, National blood safety policy developed, and in country capacity built for water quality testing and chlorination, the use of the WASH- FIT in additional 40 health facilities and Water Safety Plan for Grand Bassa County developed and implemented.

3. **Family and Reproductive Health:** Four demonstration sites for maternal and newborn quality of care standards supported, revision and utilization of the national score cards with 13 priority indicators for RMNCAH, the first ever National Family Planning Conference held and recommendations made, 14 mid-level health professionals providing advanced emergency obstetric and newborn care in 7 major hospitals under two task sharing programs and National Multi Sectoral Strategy and Standards for Adolescent Health disseminated; 186,800 children received Penta-3 representing 97% coverage and 157,344 children received measles containing vaccine with the coverage of 90%.

4. **Disease Prevention and Control:** Twenty-one (21) additional ART centers established; seven (7) Gene-Xpert diagnostic sites established; 10% increase in ownership of LLINs at household level; 2.7 million LLINs distributed nationwide; 82.5% and 86% average therapeutic coverage achieved for Schistosomiasis and STH, and Onchocerciasis MMA, respectively; 632 health workers and 10,263 community health workers trained in NTDs; Liberia Non-Communicable Diseases and Injuries Commission report validated and disseminated; 19 NCDs identified as priority NCDs by the Liberia Non-Communicable Diseases and Injuries Commission; National Cancer control policy developed; five thematic areas prioritized in the national cancer control policy.

5. **Health Information and Promotion:** Hosted 96 interactive Radio spots to provide key health messages and information to the public, commemoration of 7 world health days , updated stakeholders database with additional 1,000 members and uploaded 13 communication products on WCO website.

These achievements were attained through strategic partnerships at national and international levels, multi-sectoral collaboration, community engagement, active monitoring and review of the biennium plan and resource mobilization. The notable challenges include inadequate health workforce compounded by staff attrition especially at service delivery level and stock out of essential drugs and medical supplies.

The report proposes innovations to mitigate the key challenges during the second half of the biennium and WCO readiness for implementation of GPW 13.

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INTRODUCTION

Liberia demographic and health indicators

Liberia is located in West Africa, bordering Sierra Leone to the west, Guinea to the north, Ivory Coast to the east and the Atlantic Ocean to the south. The country covers an area of 111,369 square kilometers. Liberia is a low-income country with a GDP per capita of US$ 495 in 2013 which declined due to the Ebola Virus disease (EVD) crisis in 2014-2015.

The country is divided into 15 political subdivisions called counties and five regions. These counties are further subdivided into 93 health districts. The country's estimated total Population is 4.2 million people, life expectancy – 59.1 year (2010 UNDP),under Five Mortality 94/1,000 live births, infant Mortality rate 22/1000 live births, maternal Mortality Rate 1072/100,000, neonatal mortality rate 38/1000 (LDHS, 2013), HIV prevalence rate among adults aged 15-49 is 1.9 % (LDHS 2013), TB incidence is 308 per 100,000 population (2017 WHO Country Profile Report), 97.9% of children under 1 year receive DPT3/Penta-3 vaccination 70.2% of pregnant mothers are receiving IPT 2, 55% of pregnant mothers are attending four antenatal care (ANC) visits 35% under 5 years have chronic malnutrition and 41% pregnant mothers have varying degrees of anemia (DHIS2 Annual Data, 2018).

The 2018 WHO Country Office (WCO) annual report is an organizational requirement prepared to highlight the major achievements made, challenges encountered, lessons learnt and proposes recommendations for enhancing performance of the WCO in the next half of the biennium, 2019. This report focuses on the progress in the implementation of the technical programs of cooperation with the government of Liberia and the WCO annual work plans of each cluster that are aligned with the National Health Plan and Policy, the Investment Plan and the National Pro –Poor Agenda for Development and Prosperity.

At the beginning of 2018, Liberia experienced a major political transition with the election of a new government characterized by some challenge in leadership positions. The slow process in the formulating of the new government, and the replacement of some core staff of ministry of health (MoH) affected the ongoing and planned activities implementation of the first two quarters 2018 program of work.

During this reporting period, the World Health Organization (WHO) played a pivotal and leading role in supporting the government in the implementation of the National Health Plan and Policy and the Investment Plan for building a resilient health system in Liberia. Overall, WHO collaborated and cooperated with the MoH, relevant sectors, development partners, the donor community, international and local non- governmental institutions in addressing the health needs of the country as a means of ensuring continued recovery and sustainable development of the health sector. Priority areas of focus were: Health System Strengthening, Health Emergencies, Disease Prevention and Control, Family Reproductive Health as well as Health and Well-being.

It is pertinent to note that WHO in consonance with her mandate will continue to collaborate with the MoH and development partners to sustain the momentum in the building of a resilient health system, supporting the implementation of the National Health Policy and Plan and Investment Plan, building technical and institutional capacities during the hierarchy of the needs for resilience and to ensure access to essential quality and equity of health service delivery, addressing health emergencies through timely preparation, prevention, detection and response to health emergencies and promoting healthier Liberian population through addressing the determinants and risk factors to health.

It is pertinent to note that WHO in consonance with her mandate will continue to collaborate with the MoH and development partners to sustain the momentum in the building of a resilient health system, supporting the implementation of the National Health Policy and Plan and Investment Plan.

1 HEALTH SYSTEMS AND SERVICES (HSS)

The WHO, as the co-chair of the highest health sector steering body, the Health Steering Core Coordination Committee (HSCCC), supported health sector joint leadership mechanisms and structures, as such, the HSCCC's capacity to facilitate and enhance regular communication and dialogue between MoH and stakeholders was enhanced, to ensure better alignment to national health priorities.

The strategic objectives and priorities of the HSS cluster in 2018 were:

1. Support the development and implementation of robust national health policies, strategies and operational plans to enhance coverage of essential health services, financial protection and equitable distribution of health.
2. Improve technical and institutional capacities, knowledge and information for health systems and services adaptation and related policy dialogue
3. Ensure that international and national stakeholders are increasingly aligned around NHPSP and adhere to the effective development cooperation principles.

Operational plans for Integrated Disease Surveillance and Response (IDSR) aligned with the International Health Regulations (IHR) were developed, as such, MoH and the 15 County Health Teams (CHTs) in Liberia are better enabled to create evidence-based, integrated and need-based bottom-up health care plans in order to improve equity, quality, efficiency and resilience of health services to the general population.

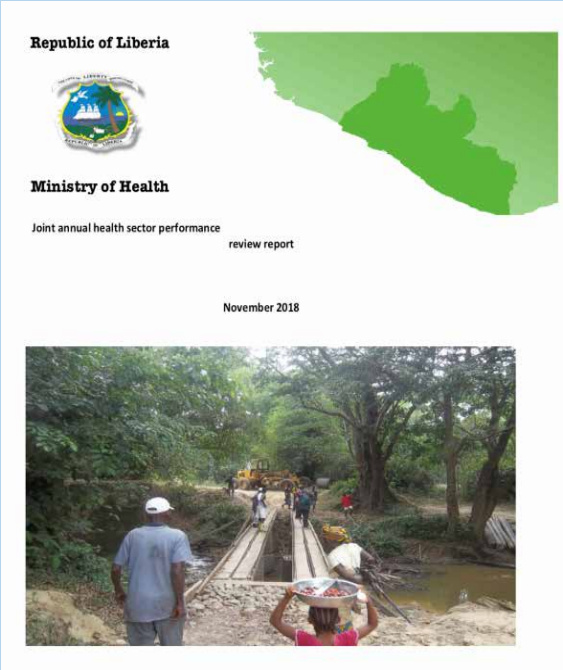

Figure. 1.1: *Joint annual health sector performance review report: 2018.*

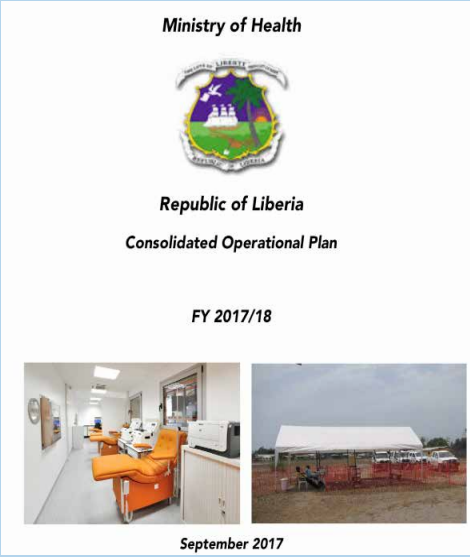

Fig1.2: *Health sector annual operational plan:2017/18.*

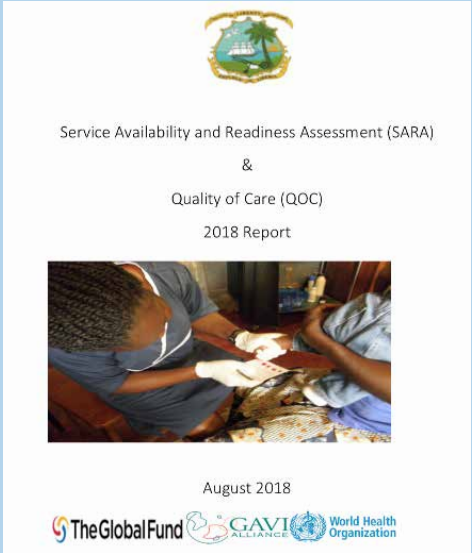

Fig 1.3: *Health facility survey, 2018: Service Availability and Readiness Assessment, Data Quality Reviews and Quality of care assessments.*

The Ministry of health, with the technical and financial support from the World Health Organization, and in collaboration with partners conducted an integrated health facility survey, quality of care assessment and data quality review in all the 15 counties (Figure 1.2). The evaluation generated reports of the data quality and trends of health services delivery. Findings were disseminated to all actors in the health sector and informed the active policy dialogue among all stakeholders. Assessment findings reported the adaptation of the National Healthcare Quality Strategy (NHQS) for Liberia.

In a view to integrate and align disease-specific program plans, the MoH and stakeholders, through the technical and financial support of the WHO, conducted quarterly joint monitoring of implementation, and joint annual performance reviews of the health system (figures 1.3). Recommendations guided next improvement plans of the various investment and programme specific action plans.

The WHO also guided technical experts from the ministry in the process of developing the national consolidated operational plans along with the 15 counties operational plans.

***Figure 1.4**: 2018 Health sector joint annual review conference, Liberia.*

***Figure 1.5**: Sub - National Joint Semi-Annual Program Implementation Review, 2018, Liberia.*

***Figure 1.6**: WHO supported the first-ever national application of WISN technique for health workforce planning and management in Liberia.*

Approximately 24 Health managers from the central Ministry of Health, 36 district health managers and health facility managers are better capacitated and better equipped on the application of the workload indicator staffing need (WISN) tool to optimize health workforce planning and management.

The WHO country office in collaboration with AFRO took stock of health workforce distribution and skill mix analysis, which informed planning and projection of priority health workforce needs for Liberia.

Using the WHO standard national health accounts (NHA) guide and tools, MoH institutionalized the health sector health accounts and was able to conduct resource mapping. WHO collaborated with relevant stakeholders in generating up to date evidence on health care financing options, including ways for generating domestic resources; supported health financing policy development and dialogue, and provided technical assistance to National Health Accounts in the production of national health expenditure analysis.

***Figure 1.7**: Regular Joint Partners' Coordination Meeting, 2018, Liberia.*

A report on analysis of the National health accounts for the health sector and an annual resource mapping report were produced and disseminated.

The national health care regulatory body, the Liberian medical and dental council (LMDC), and the quality management unit of MoH, through technical and financial support from the WHO, updated hospital standards and guides. The LMDC reoriented a total of 25 clinicians and laboratory experts from 25 hospitals on the application of the new standards and guides. A total of 20 hospital standards and guides, and infection prevention and control (IPC) guidelines were developed and endorsed by all stakeholders.

The WHO, as the co-chair of the highest health sector steering body, the Health Steering Core Coordination Committee (HSCCC), supported health sector joint leadership mechanisms and structures, as such, the HSCCC's capacity to facilitate and enhance regular communication and dialogue between MoH and stakeholders was enhanced, to ensure better alignment to national health priorities. This is resulted in a quarterly publication of HSCCC meeting recommendations and follow up actions. The following reports were developed:

1. Implementation of the recommendations of Joint Financial Management Assessment (JFMA) as per the priorities of the country compact.
2. Assessment and design of the Joint Program Coordination Units (JPCU) as per the recommendation of the health sector compact,

Additionally, mechanisms for coordination of health sector donors and implementing partners as well as stakeholders' Coordination to the National Public Health Emergency Response, along with the IHR and One Health Approach, are in place.

In order to tackle maternal and neonatal mortality and disability at the primary referral level in Liberia, the WHO technically and financially collaborated with the MoH, UNFPA and, Maternal and Child health Advocacy International (MCAI), through an innovative task-sharing project in advanced obstetric care and neonatal care. Regulation and licensing was provided by the LMDC and the Liberian Board for Nursing and Midwifery (LBNM).

The task-sharing project produced two qualified midwives as obstetric clinicians, is currently training nine interns who have completed 2 of the 3 years of training,

***Figure 1.8**: A successful collaborative initiative for realization of UHC in Liberia.*

Partnerships between MoH, WHO, UNFPA and MCAI started an innovative task sharing project in advanced obstetric care followed by advanced neonatal care regulation and licensing by the LMDC and LBNM.

and from 1st February 2018 took on 10 new trainee obstetric clinicians and four neonatal care clinicians. The WHO funded an additional 5 trainees in advanced neonatal care. Into the three years of the initiative, a total of 1,654 Caesarean sections have been undertaken by the first 11 trainee obstetric clinicians. As evidenced by the number of neonates that received nasal CPAP for life-threatening breathing difficulties, there is improved neonatal care.

The WHO health services and systems strengthening worked with following key stakeholders in the health sector: UNICEF, UNFPA, UN Women, World Bank, USAID, Irish Aid, DFID, EU, France, Sweden, and MCAI.

***Figures 1.9 and 10:** Task sharing project products. Trainees, trainers and administrator CH Rennie Hospital.*

Dr. Johnson Medical Director at CH Rennie Hospital, with recently delivered baby (by caesarean section) and the baby's 10 year old mother. Children as mothers are common in Liberia.

24 Health managers from the central Ministry of Health are better capacitated and better equipped on the application of the workload indicator staffing need (WISN) tool.

36 district health managers and health facility managers are better capacitated and better equipped on the application of the workload indicator staffing need (WISN) tool.

The WHO funded an additional **5** trainees in advanced neonatal care.

Into the three years of the initiative, a total of

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The LMDC reoriented a total of **25** clinicians and laboratory experts from **25** hospitals on the application of the new standards and guides. A total of **20** hospital standards and guides, and infection prevention and control (IPC) guidelines were developed and endorsed by all stakeholders.

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2 WHO HEALTH EMERGENCIES (WHE)

The WHO and partners continue to support Liberia in strengthening the national disease surveillance system using the Integrated Disease Surveillance and Response [IDSR] strategic framework to implement and the International Health Regulations [IHR (2005)] core requirements.

In order to keep the Liberian population safe from health emergencies while simultaneously addressing the underlying causes of their vulnerability; WHO Liberia Health Emergencies Cluster (WHE) is part of a broader change in the national and sub-national efforts for prevention, preparedness and response to public health emergencies in the country.

The cluster brings together expertise and resources of risk assessment and surveillance of priority diseases, conditions and events using the Integrated Disease Surveillance and Response (IDSR) approach, disaster and Epidemics preparedness and response (EPR) and IHR to build resilient health systems; data management for decision making, Infection Prevention and Control (IPC) of infectious hazards, Laboratory, Antimicrobial Resistance (AMR) stewardship, Water, Sanitation and Hygiene (WASH), Health Emergency Information and expanding partnerships involved in outbreaks and humanitarian crises.

2.1 Integrated Disease Surveillance and Response (IDSR)

The WHO and partners continue to support Liberia in strengthening the national disease surveillance system using the Integrated Disease Surveillance and Response [IDSR] strategic framework to implement and the International Health Regulations [IHR (2005)] core requirements.

WHO supported the investigation and response to 99 disease outbreaks and other public health events in 2018 from 14 out of 15 counties; 86.6% of the outbreaks were investigated and responded to within 48 hours. The outbreaks and other public health events recorded include; measles (49), Shigellosis (28), Lassa fever (13), Rabies in animals (3), Pertussis (2), Yellow fever (1), Meningococcal disease (1), Scabies (1) Flood (1) and (1) chemical spill) as compared to 39 during 2017 in 11 counties. Sixty percent (60%) of the events had investigation reports, 7,465 priority diseases alerts were reported verified and investigated with in 48hrs compared to 4,729 reported in 2017 and 52 early warning epidemiological bulletins were produced and shared with all stakeholders).

***Figure 2.1**: A - Copy of weekly IDSR bulletins; B - WHO field epidemiologist conducting supervision.*

The integrated disease surveillance and response (IDSR) performance Indicators for 2018 indicate 98% case notification within 24hrs as compared to 80% in 2017, 98% case documentation (case base forms and line list) in 2018 as compared to 60% in 2017, completeness and timeliness of IDSR reports were 96% and 92% during 2018, 46% community case detection and notification was registered compared to 21% during 2017 partly due to funding secured from AFRO to support community based surveillance activities.

WHO supported MoH and NPHIL in building resilience of surveillance officers and frontline health workers through capacity building in IDSR and outputs included: Forty five (45) senior medical officers and health facility IDSR focal persons in Integrated Disease Surveillance and Response (IDSR) with emphasis on Lassa fever detection and case management, 332 frontline health workers and surveillance officers trained in IDSR, 15 County surveillance officers refresher training on outbreak investigation and reporting, 350 health workers trained on AFP/VPDs active case search,

***Figure 2.2**: Monitoring IDSR key performance indicators: 2016 - 2018.*

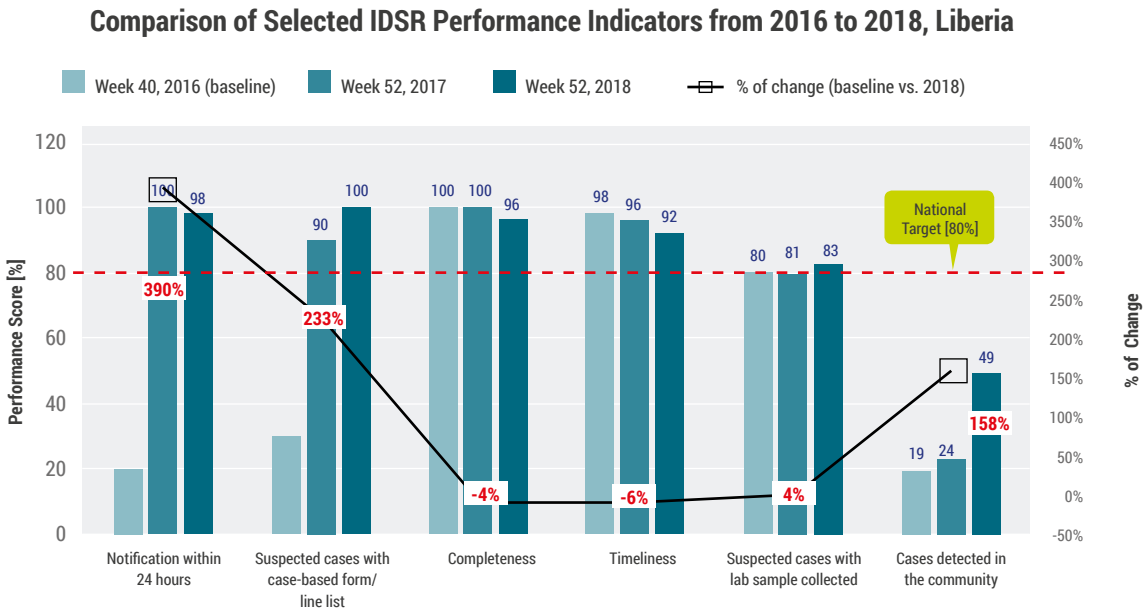
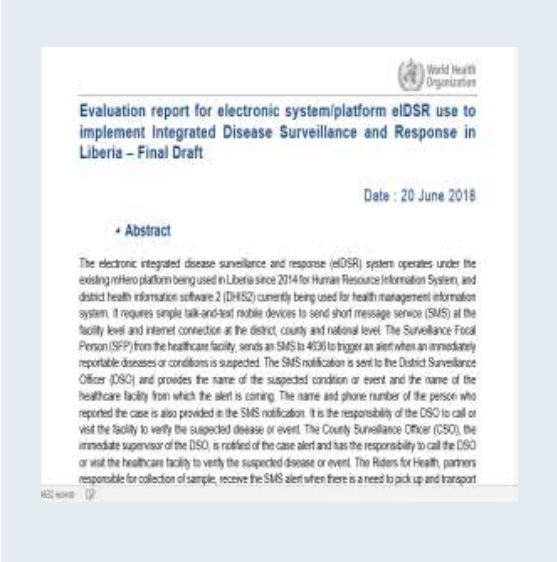


***Figure 2.3**: A - WHO field epidemiologist support IDSR specimen's collection in the field; B - WHO co-facilitates the overview of IDSR in Nimba County during the training*



Evaluation report for electronic system/platform eIDSR use to implement Integrated Disease Surveillance and Response in Liberia – Final Draft

Date : 20 June 2018

Abstract

The electronic integrated disease surveillance and response (eIDSR) system operates under the existing mHero platform being used in Liberia since 2014 for Human Resource Information System, and district health information software 2 (DHIS2) currently being used for health management information system. It requires simple talk-and-text mobile devices to send short message service (SMS) at the facility level and internet connection at the district, county and national level. The Surveillance Focal Person (SFP) from the healthcare facility, sends an SMS to 4636 to trigger an alert when an immediately reportable diseases or conditions is suspected. The SMS notification is sent to the District Surveillance Officer (DSO) and provides the name of the suspected condition or event and the name of the healthcare facility from which the alert is coming. The name and phone number of the person who reported the case is also provided in the SMS notification. It is the responsibility of the DSO to call or visit the facility to verify the suspected disease or event. The County Surveillance Officer (CSO), the immediate supervisor of the DSO, is notified of the case alert and has the responsibility to call the DSO or visit the healthcare facility to verify the suspected disease or event. The Riders for Health, partners responsible for collection of sample, receive the SMS alert when there is a need to pick up and transport

***Figure 2.4**: eIDSR pilot evaluation report.*

51 health workers trained in Influenza surveillance, 150 health facility focal persons trained in eIDSR (e-Surveillance), 55 staff from NPHIL, MoH, MIA and Immigration sector trained in Port Health Management as Trainers in partnership with NPHIL and IOM and 450 community Health volunteers trained in community-based surveillance.

Piloted the revised AFRO 3rd IDSR technical guidelines and training modules with 45 participants (NPHIL, MoH and partners) and supported FETP mentorship for CSOs and DSOs (CDC, AFENET, NPHIL), developed 9 post EVD epidemic IHR core capacities manuscripts, weekly epidemiological bulletins and printed and distributed 1,000 job aids and 3000 reporting tools to community health workers (CHVs and CHAs) in border counties to aid alert notification and referral from communities to health facilities.

WHO supported the implementation and evaluation of eIDSR (e-surveillance) pilot with appreciable recommendations for roll-out, in collaboration with eHealth Africa, US-CDC, and UNICEF. The pilot was conducted in two counties, Margibi and Grand Cape Mount, and included 74 health facilities, and 137 health workers were trained on the eIDSR for real-time reporting. The eIDSR pilot evaluation report was developed and disseminated.

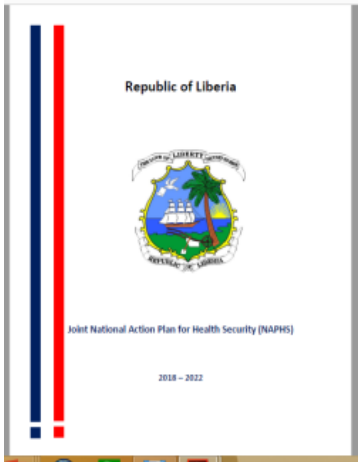


***Figure 2.5**: A - Copy of the National Action Plan for Health Security; B - Review of the National Public Health Institute of Liberia IHR/NAPHS implementation performance, 2018.*

2.2 Emergency Preparedness and Response

The lessons learned from responding to the 2014-16 Ebola outbreaks enabled the MoH with support from WHO and partners to develop an Investment plan for Building a Resilient Health System 2015- 2021 where strengthening Epidemic preparedness, surveillance and response is a strategic investment area. WHO Health Emergencies (WHE) Program focused on building country capacity to prevent, detect and respond to emergencies through building all hazard emergency preparedness, mitigation and response capacities; developing prevention and control of infectious disease strategies and having an efficient detection, risk assessment and response mechanisms.

Under "Prevention of high-threat infectious hazards", WHO in collaboration with NPHIL and MoH, contributed to;

a. Development and dissemination of the Lassa fever (LF) case management protocol to all 15 County health teams and 42 hospitals
b. Development and dissemination of Standard Operating Procedures and Public Health Emergency Contingency Plan for Seaports, Airports and Ground Crossing in Liberia, with simulation exercise conducted
c. Development of VHF Standard Operating Procedures Manual
d. Conduct of Medical Countermeasures workshop, with 40 participants
e. Orientation of 25 staff at Redemption hospital isolation unit on LF case management protocol.

To strengthen the "country health emergency preparedness" WHO in collaboration with NPHIL and MoH contributed to:

a. Launch of the National Action Plan for Health Security graced by the Vice President of Liberia
b. Validation of the National Disaster Management Agency (NDMA) Multi-hazard Contingency plan
c. Conducted Liberia IHR Self-Assessment and submitted to WHO IHR committee: score of 48 % (compared to 46% from IHR JEE 2016)
d. Conduct of VRAM workshop with 30 participants, and 10 hazards with health implications for Liberia identified
e. Conduct of full scale simulation exercises in Margibi and Montserrado counties; with 100 participants
f. Conduct of 3 days Global emergency operations center simulation exercise, involving 40 countries, 30 participants from Liberia (NPHIL, MoH, MoA, EPA, NRL and partners CDC, JIZ, ACCEL, Africa CDC)
g. Meningitis After Action Review (AAR) in Lofa county with 36 participants
h. Lassa fever after action review in Montserrado county.

With WHO AFRO regional office contingency funding, supported response to floods disaster which affected 62,000 persons in six counties by supporting rescue efforts of people affected with floods, surveillance activities for communicable diseases, providing case management of floods victims and IPC supplies. Eight UN agencies including WHO through the UN Disaster Management Working Group mobilized approximately $ USD 900,000 for the response.

2.3 Water, Hygiene and Sanitation and Environmental Health

The WHO and partners supported the Liberia Water and Sewer Corporation (LWSC) and line ministries and agencies to conduct system approach water quality risk based assessment from water catchment to consumers for water safety plan development at national and sub-national levels, which contributes to supply of quality drinking water for all, while at the same reducing the burden of disease associated with consuming unsafe drinking water.

Additionally, WHO supported the sub-national capacity building for safe management of health care waste at the health facility level through staff mentorship and technical support thus contributing to patient safety and improved environmental health. A water safety plan (WSP) for the Buchanan water treatment plant was developed, validated and implemented. Furthermore, the WSP risk assessments were conducted in Grand Cape Mount County, for the ongoing WSP development process for these Counties.

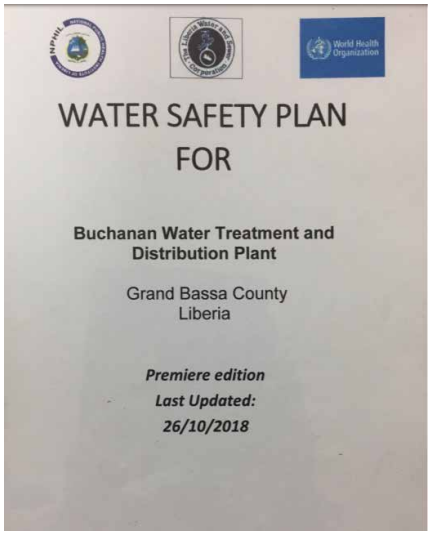


Figure 2.7: *Water Safety Plan for Buchanan water treatment plant.*

At least nine Environmental Health Technicians and 15 water quality technicians benefited capacity building training in two counties (Grand Bassa and Montserrado Counties) for water quality monitoring including chlorination and its residual monitoring.

Over 35 additional health care facilities and 230 service providers in 2 counties ware mentored to implement the Water, Sanitation and Hygiene Facility Improvement Tool (WASH FIT).

Global Assessment and Analysis of Sanitation and Drinking-Water (GLAAS) 2018-2019 Cycle were technically supported and achieved. Liberia signed up for publication in the 2018- 2019 GLAAS Survey Report.

Figure 2.6: *A - Water Safety Treatment and Distribution Plant; B - Mentorship for water quality, chlorination and chlorine residual monitoring.*

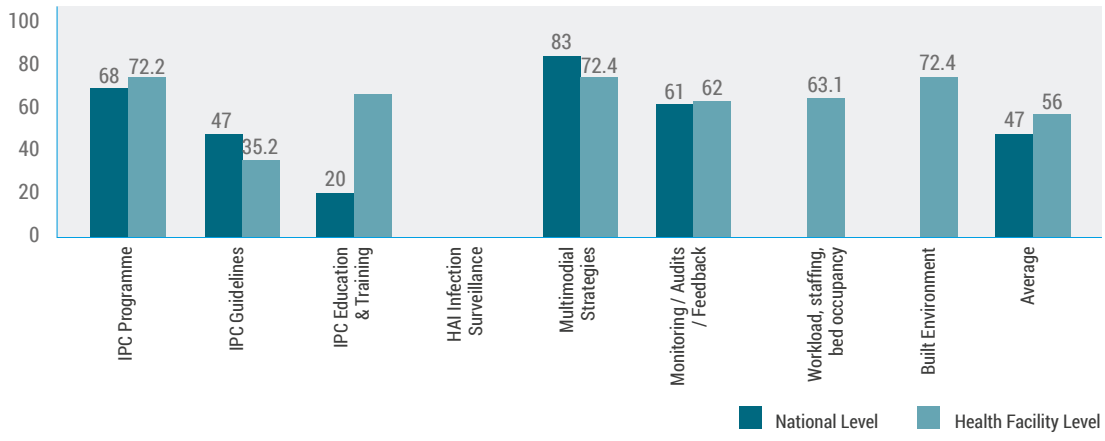
2.4 Infection Prevention and Control (IPC)

WHO, in collaboration with other partners, supported MoH, in the development of the National IPC Guidelines based on the 2016 WHO Guidelines on Core Components of IPC Programs at the National and Acute Health Care Facility level. Sixty-seven (67) County and hospital IPC focal persons as well as WHO county field officers and regulatory bodies' personnel trained during a training-of-trainers orientation workshop. Additionally, 250 healthcare workers were trained on the IPC Guidelines, from Liberia Government Hospital- Grand Bassa County, J.J. Dossen Memorial Hospital and John F. Kennedy Memorial Hospital respectively.

Figure 2.8: *A - IPC Guidelines Orientation Workshop; B - National IPC Guidelines.*

Based on the 2016 WHO Guidelines on Core Components of Infection Prevention and Control (IPC) Programs at the National and Acute Health Care Facility Level, the WHO Global IPC unit developed the Infection Prevention and Control Assessment tool (IPCAT2) for national programs and an infection Prevention and Control Framework (IPCAF) for acute healthcare facilities. These tools are developed using the six (6) core components. The core components are also reflected in the newly published National IPC Guidelines for Liberia 2018. In July 2018, baseline assessments were conducted in 32 of 38 (84%) of hospitals in Liberia. Health facilities (IPCAF) overall score was 451/800 (56%). There were also gaps identified in the eight core components with variability across the hospitals; HAI surveillance, IPC programs and guidelines had the most gaps.

Figure 2.9: *IPCAT and IPCAF National and health facility level baseline results disaggregated by component.*



The national level (IPCAT2) score was 47.0%; gaps identified within all the six core components assessed - HAI surveillance was at 0%, followed by IPC education and training at 20% and IPC guidelines at 47%. Remarkable achievements have been made with the implementation of the multi-modal strategy at 83% due to previous implementation of WHO tools, followed by the national IPC program set up at 68%. (See Figure 25).

WHO support to MoH and County health teams improved national hand hygiene self-assessment (HHSAF) compliance: HHSAF compliance from 50% baseline to 67% reassessment by fostering the development of action plans for 22 referral hospitals across the 15 counties in Liberia.

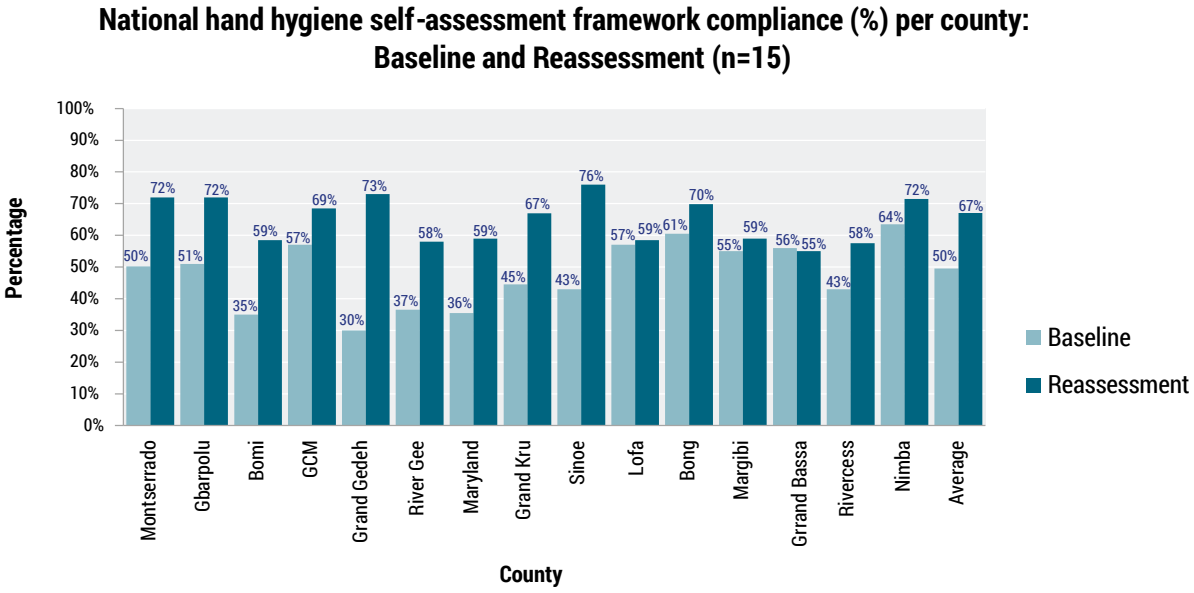


Figure 2.10: *County and National HHSAF Hand Hygiene Level (%) results.*

2.5. Antimicrobial Resistance (AMR)

Antimicrobial resistance (AMR), the ability of a microorganisms (like bacteria, viruses, fungi and some parasites) to stop an antimicrobial (such as antibiotics, antivirals, antifungal, and antimalarial) from working against it (WHO, 2015), is a global public health threat that, unless urgently addressed, will lead to 10 million deaths and a decrease of GDP between 1 – 3.5% per annum, by 2050. WHO aims to reduce the percentage of blood-stream infections due to drug-resistant organisms by 10%.

There is paucity of data on the prevalence of AMR in Liberia. The widespread malpractice in the use of antimicrobials, including; limited control on selling of antimicrobial medicines, purchase of counterfeit drugs from "drug peddlers," unrestrained use of antibiotics in the agriculture industry, among others, as well as limited knowledge on AMR and its contributing factors among the public and other key stakeholders, however, predisposes the country to widespread AMR. As such, combating AMR has been prioritized in the Liberia Pro-Poor Agenda for Development and Prosperity 2018–2022.

As a part of national efforts to mitigate the prevailing AMR situation, WHO supported the Government of Liberia both technically and financially to organize multi-sectoral technical working group meetings (TWG), and workshops on AMR, which led to the development, validation and launch of the National Action Plan on Prevention and Containment of AMR; and improved awareness and understanding on AMR amongst 74 key stakeholders (**47 males; 27 females**) from the relevant government line ministries and agencies. In addition, the Surgical Site Infection (SSI) surveillance pilot protocol was developed to guide the piloting on SSI and roll out of the national AMR which will commence in 2019.

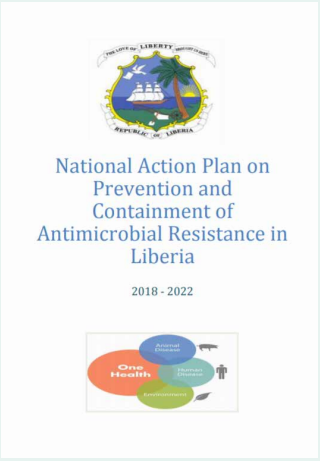


***Figure 2.11**: AMR National Action Plan AMR validation workshop using One Health approach, Monrovia, June 2018.*

***Figures 2.12**: Annual World One Health Day and Antibiotic Awareness Week commemoration with Vice President, Madam Jewel Howard Taylor (middle), line ministries and agencies, Monrovia, 2018.*

WHO, in collaboration with FAO and United States Agency for International Development (USAID), supported the National One Health Platform in observance of important global events, including World Antibiotic Awareness Week and the International One Health Day 2018, to promote awareness and improve understanding of AMR.

Activities included adaptation and dissemination of antibiotic awareness campaign materials like banners, posters, flyers; with integrated human, animal and environmental components on AMR, to the 15 counties and other relevant sectors, policy makers, and international partners (including USAID, US-CDC, FAO, etc). This resulted in raised awareness, and improved knowledge and understanding of AMR amongst 99 key stakeholders **(54 males; 45 females)** to prevent further emergence and spread of AMR in the human, animal and environment during one health and antibiotic awareness celebration.

Figure 2.13: *WHO, FAO and OIE supported IHR-PVS National Bridging Workshop to promote One Health approach in Liberia, November 26- 28, 2018.*

WHO provided financial, technical, operational and logistical support in conducting the IHR-Performance of Veterinary Service (PVS) National Bridging Workshop. The aim of the workshop was to: strengthen coordination amongst various sectors (Human, Animal/ Livestock and Environment); mainstream gender in the One Health approach; increase awareness and improve understanding of One Health, zoonotic diseases and AMR. Participants included **87** stakeholders **(60 males; 27 females**) from national, county and district levels, including representatives from the media, health, agriculture, environmental sectors as well as international partners (Riders for Health, FAO/ECTAD, and PREDICT) in collaboration with WHO Regional Office for Africa, OIE and FAO.

A report highlighting priority areas for interventions was produced and disseminated among key stakeholders at the national and sub-national levels. In addition, a national consolidated joint-road map to strengthen collaboration and coordination amongst sectors and agencies was developed.

WHO, in collaboration with ACCEL rolled out laboratory AMR surveillance at 5 additional hospital laboratories. This was achieved through: routine technical support and guidance to testing facilities; provision of testing guidelines as well as standard operating procedures; training of 35 personnel in bacteriology testing at the 5 new testing sites and refresher training for personnel at 3 existing testing sites. As a result, AMR laboratory surveillance was decentralized to include 5 additional hospital laboratories in 4 counties, increasing country coverage from 3 counties to 7 counties (from 20% to 47%). This enabled screening of 115 fecal pathogens (isolated from specimens from 57 females, 58 males) AMR thus allowing for profiling of drug resistance patterns for Liberia and informing patient management, change in medication, and ultimately contributing to efforts to combat AMR.

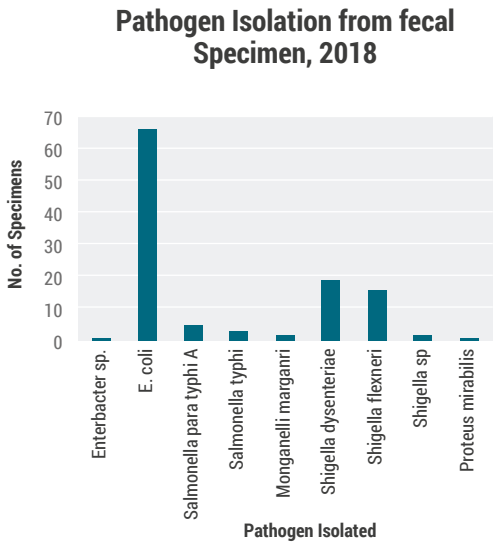
2.6 Laboratory

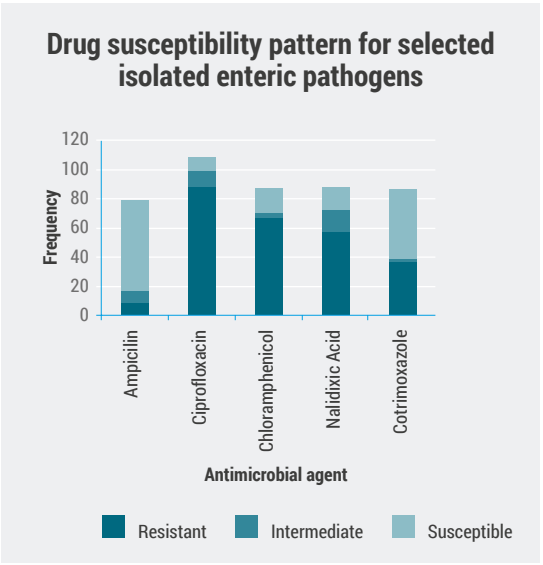
The laboratory system of Liberia comprises of public health laboratories including the National Reference laboratory (NRL), and two regional public health laboratories in Bong and Nimba; and approximately 270 clinical laboratories in 36% of the healthcare facilities (hospitals, health centers and clinics), arranged in a tiered system.

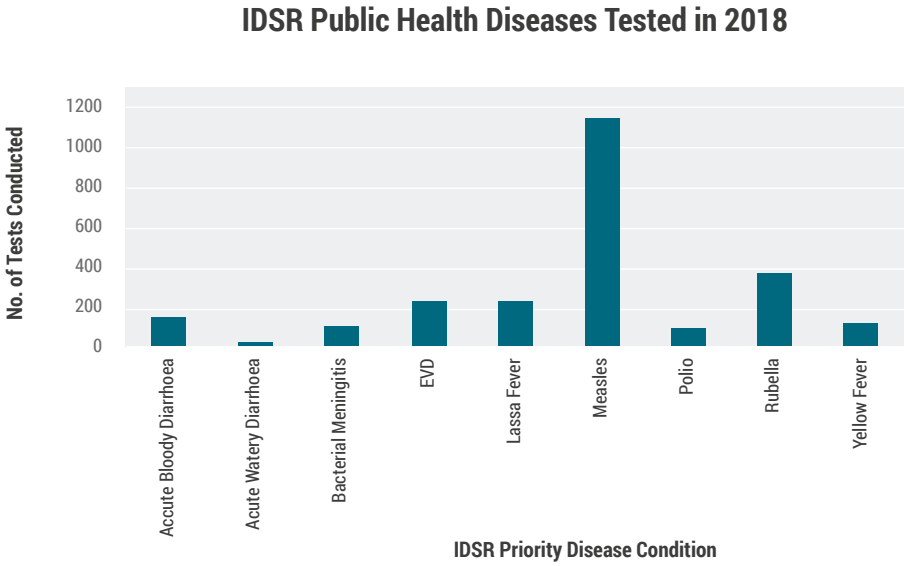
The NRL is led by a team of laboratory leads at the National Public Health Institute of Liberia (NPHIL) while clinical laboratories are directly supervised by County Diagnostic Officers (CDO). The National Diagnostic unit offers support to the CDOs, coordinates distribution of laboratory commodities, and conducts regular supportive supervision and assessment to peripheral laboratories, to ensure quality care is provided to patients.

Since 2014, WHO intensified its support to strengthen the laboratory system in Liberia. Major support included training; mentorship; technical guidance; provision of reagents and equipment; and, development of plans, policies, strategies, guidelines and standard operating procedures

Through WHO continued guidance and support, Liberia sustained and decentralized IDSR diagnostic capacity for eight priority diseases through continued efforts in provision of technical support and guidance; training of 35 personnel in laboratory diagnostic procedures; daily mentorship and monitoring of laboratory indicators to ensure continued quality testing; provision of reagents worth 3000 tests for measles, rubella, yellow fever, rotavirus, and meningitis (culture); provision of specimen collection materials for over 5600 specimens including 200 specimen collection kits for meningitis; and coordination of international specimen referral for polio and yellow fever confirmatory testing. Of the 13 disease outbreaks requiring laboratory confirmation reported in 2018, 84.6% (11/13) were confirmed within 48 hours of alert, which informed adequate and prompt response to disease outbreaks, appropriate patient management, and contributed to timely containment of outbreaks, improved patient outcome, and contributed to improved quality of life. This was achieved in collaboration US-CDC and ACCEL.







WHO, in collaboration with partners, supported MoH to improve access to tuberculosis (TB) and HIV (Viral Load, and Early Infant Diagnosis - EID) diagnostics and timeliness through the establishment of four additional GeneXpert testing sites, training of personnel, and continued mentorship. This increased the country coverage to a total of 17 GeneXpert testing sites in 10 counties (from 60% to 67% count coverage with respect to counties).

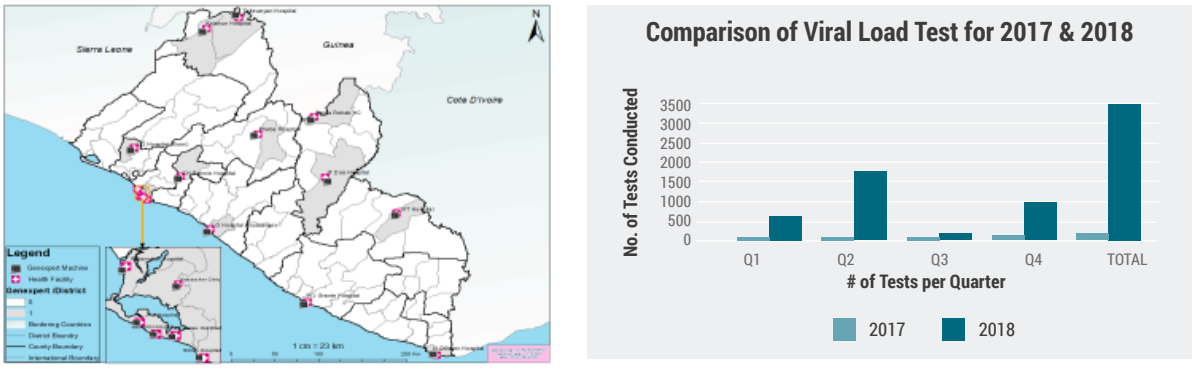


Figure 2.14: *A - Map showing distribution of Gene exert machines in the country as of December 2018; B - Comparison of HIV viral-load testing in 2017 and 2018.*

Sustained advanced clinical diagnostics (haematology, chemistry, X-ray) in 8 county hospitals, in 7 counties, enabling appropriate care to patients and contributing to improved quality of care and ultimately improving access to universal health coverage. This was achieved through; providing weekly mentorship to 94 personnel at 8 facilities in the 7 counties; monthly monitoring of laboratory performance and service utilization; provision of technical oversight over procurement and installation of laboratory equipment; more than 340 clinical and lab equipment; establishment of chemistry testing at 5 additional hospital laboratories. Approximately 1771 patients from 7 counties benefited from advanced laboratory diagnostic services. This was achieved through collaboration with WB, IsDB, and GFATM as donors; and UNOPS as an implementing partner for equipment procurement and installation.

Figure 2.15: *Liberia Commemorates World Blood Donor Day (14 June 2018). Theme: Be There for Someone Else. Give Blood. Share Life.*

Figure 2.16: *Training of Laboratory technicians on AFB Microscopy ZN and FM method.*

WHO, in collaboration with ACCEL and GFATM, provided technical support to the National Blood Safety Program (NBSP) to develop national blood safety policy and guiding documents for Liberia. In addition, through WHO technical support, the World Blood Donor day was commemorated during which regular voluntary blood donors were honored.

WHO provided technical and financial support to MoH to implement quality assurance schemes for measles and rubella, GeneXpert and Acid-Fast Bacilli (AFB) microscopy testing at the National Reference Laboratory, 14 pre-existing GeneXpert testing sites, and 80 (out of 94) clinical laboratories, respectively. TB EQA was provided with support from the TB supra-national reference laboratory in Uganda. Liberia scored 98% in the measles and rubella proficiency testing, 100% in the TB panel testing, and 23% (14/80) pass rate for the AFB EQA.

WATER, HYGIENE AND SANITATION (WASH); AND ENVIRONMENTAL HEALTH

Over 35

additional health care facilities and **230** service providers in 2 counties ware mentored to implement the Water, Sanitation and Hygiene Facility Improvement Tool (WASH FIT).

INTEGRATED DISEASE SURVEILLANCE AND RESPONSE (IDSR)

Trained **45** senior medical officers and health facility IDSR focal persons in Integrated Disease Surveillance.

350 health workers trained on AFP/VPDs active case search, **51** health workers trained in Influenza surveillance, **150** health facility focal persons trained in eIDSR (e-Surveillance).

ANTIMICROBIAL RESISTANCE (AMR)

WHO provided financial, technical, operational and logistical support in conducting the IHR-Performance of Veterinary Service (PVS) National Bridging Workshop. Participants included **87** stakeholders.

60 males

27 females

LABORATORY

Provided technical oversight over procurement and installation of

340

major clinical and laboratory equipment.

Established chemistry testing at **5** additional hospital laboratories. Approximately **1771** patients from 7 counties benefited from advanced laboratory diagnostic services.

Of the 13 disease outbreaks requiring laboratory confirmation reported in 2018,

84.6%

(11/13) were confirmed within 48 hours of alert.

Liberia scored

98%

in the measles and rubella proficiency testing, 100% in the TB panel testing, and 23% (14/80) pass rate for the AFB EQA.

3 DISEASE PREVENTION AND CONTROL

National Response to HIV and AIDS is one of the major priorities of the MoH of Liberia. The key MoH partners for these programs are Global Fund and USAID.

3.1 Communicable Diseases

3.1.1 HIV/AIDS

The national HIV prevalence in 2018 was 2.1% in the general population. HIV is higher in adolescent girls and young women (2.9% - 4.0%) and key population (MSM 19.8%, FWS 9.8%). The HIV service coverage has increased from 20% in 2016 to 61% in 2018. National Response to HIV and AIDS is one of the major priorities of the MoH of Liberia. The key MoH partners for these programs are Global Fund and USAID. WHO and other UN Agencies, including UNAIDS, UNFPA, UNICEF, and UN Women provide Technical and financial support the MoH to achieve its goals. WHO Country Office Liberia has aligned its strategic objectives to the national priorities and in harmonization with the WHO General Program of Work, the Sustainable Development Goals and the AFRO Transformation Agenda. Technical and financial support has been provided to the National Program to adopt and implement WHO recommendations and guidance in the National Strategic Plans for HIV and AIDS.

WHO supported the National AIDS Control Program (NACP) to Scale up HIV services, particularly in Montserrado, Margibi, and Bassa Counties (high prevalence of HIV 2.7% in each county) under differentiated programming. The Liberia National HIV/AIDS Integrated Treatment Guidelines were revised to adopt the Test and Treat Strategy, as well as scale up HIV services by increasing the number of HIV Testing centers from 371 in 2017 to 520 in 2018. In addition, the integrated PMTCT and ART centers increased from 419 in 2017 to 430 in 2018 where Test and Treat strategy is implemented, with scale up of viral load monitoring of clients on ART and early infant diagnosis (EID) of exposed neonates. The number of clients on ART increased from 12,116 (84% female) in 2017 to 13,110 (74% female) in 2018.

In terms of progress on the 90-90-90 targets for 2020, Liberia was at 67-53-53 by end of 2018. In terms of Testing and Treatment Cascade, the country progress update was 67% for testing, 35% for PLHIV on treatment and 18% for viral suppression. HIV diagnostics capacity was increased through rapid molecular testing of HIV viral load/EID. Through WHO, the NACP received an emergency supply of 1,034 pieces of Viral Load (VL) cartridges and 60 pieces of EID cartridges supplied by Cepheid, the manufacturer.

3.1.2 Tuberculosis control and services in Liberia

Tuberculosis (TB) is still a major public health problem in Liberia as the country is among the ten countries with high estimated TB incidence rate. The high TB prevalence in Liberia is further complicated by inadequate funding, increase in prevalence of drug resistance, TB/HIV and other socioeconomic determinants such as inadequate housing and poor-quality health care services.

With an estimated population of 4.8 million people and an estimated incidence rate of 308/100,000 population, the mortality rate of 73/100 000 and MDR/RR-TB incidence rate of 8.3/100 0002, the country is estimated to notify 15,584 all forms of TB cases and 390 MDR/RR-TB cases in 2018 of which only 8,335 (53%) and 65 (17%) were notified. TB funding support for Liberia is mainly from the GFATM grant and partly WHO, aside the government of Liberia; however, only 24% of this funding is domestic, and the remaining 76% is international. The

WHO Photo

TB statistics for Liberia emphasize the need to increase control efforts and support for TB and TB/HIV in Liberia.

WHO supported the mobilization of Global Fund resources for TB control for the period 2018-2020. In addition, WHO Supported the National TB Program in adopting and implementing the End TB Strategy and WHO guidelines on TB Control, particularly MDR-TB. The WHO recommended short course treatment for MDR-TB (New treatment regimen (Bedaquilline and Delamanid)) was also adopted. Green Light Committee assessment of Programmatic Management of MDR-TB and recommendations provided for improvement.

Through WHO support, in collaboration with the Global Drug Facility (GDF) for quantification and monitoring of supplies, Quan-TB was introduced in Liberia. Capacity for TB data collection and real-time reporting and integration in the Health Management Information System was developed.

There was a scale up of GeneXpert testing from 10 sites in 2017 to 17 sites in 2018 covering 10 of 15 counties. TB case detection rate increased to 35.1%, with a total of 2,928 new TB cases being detected (1,233 cases by AFB microscopy method (ZN staining) and 1,695 cases by GeneXpert method).

A total of 94 AFB microscopy centers in 6 counties (Montserrado, Nimba, Grand Bassa, Margibi, River Gee and Grand Gedeh) were activated into conducting AFB microscopy test. A total of 65 laboratory Assistance and Aids were trained in AFB microscopy using ZN staining method and seven five (75) Laboratory staff including 15 CDOs trained on the new Light Emitting Diode Fluorescence Microscopy as well as re-instated AFB microscopy at 6 health facilities.

WHO supported the national TB Program to train of 78 laboratory staff from 15 GeneXpert sites on basic laboratory procedures, introduction to Laboratory Quality Management System (LQMS), sample management, inventory management, TB diagnostics (AFB microscopy and TB and HIV diagnostics using the GeneXpert technology).

The TB Annex laboratory was successfully enrolled into external quality assurance (EQA) program system through the Uganda Supra-National Reference Laboratory (SRL) for all diagnostic methods performed. In the first EQA, Liberia scored 100%.

Responding to Tuberculosis is one of the major priorities of the Ministry of Health (MoH) and key MoH partners are: Global Fund USA, ID, WHO, UNAIDS, UNFPA, UNICEF, and UN Women.

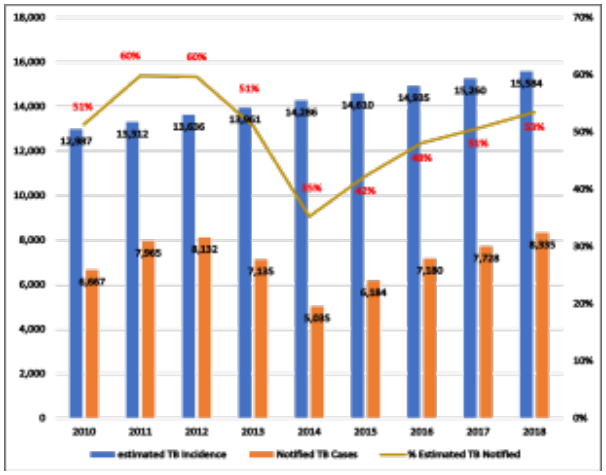


Figure 3.1: *Trend of TB Treatment Coverage 2010 - 2018.*

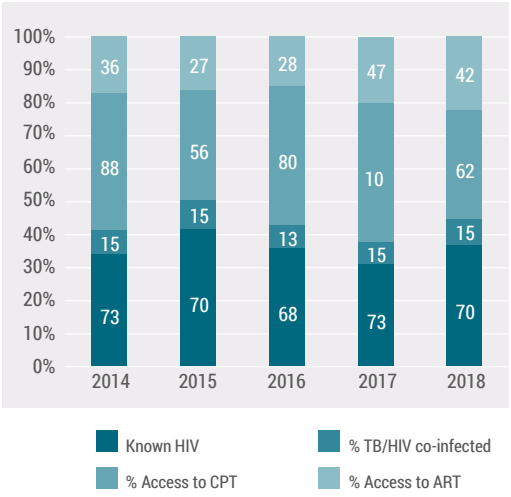


Figure 3.2: *Trend of TB/HIV Indicators 2014 - 2018.*

3.1.3 Viral Hepatitis

The prevalence of Hepatitis B Virus and Hepatitis C Virus in the country is currently 6.2% and 1.8%, respectively (among blood donors) in the general population. Viral Hepatitis testing services are integrated in HIV Testing Services, Blood Safety Program, Immunization and Family Health.

The government has placed high priority on Viral Hepatitis and is currently collaborating with several partners to reduce the incidence.

Major efforts of WHO in supporting the government address this disease have resulted in: increase in Penta 3 coverage from 98.7% in 2018 as compared to 94% 2017; increased advocacy and

resource mobilization; integration of Viral Hepatitis in Prevention of Mother to Child Transmission of HIV (PMTCT) and HIV Testing Services (HTS); advocacy and technical support to integrate birth dose HBV vaccine in the routine immunization program; development and implementation of guidelines for the prevention, Care and Treatment of Viral Hepatitis; and, provision of technical assistance to generate strategic information to guide the development of National Strategic Plan for Viral Hepatitis. Unfortunately, Birth dose for HBV is yet to be administered in the country.

3.1.4 Malaria

Malaria is the major cause of morbidity and mortality in Liberia. The current Malaria prevalence is 28%. In addressing the current malaria situation in the country, WHO provided both technical and financial support to the National Malaria Control Program to adopt and implement the Malaria Global Technical Strategy and WHO recommendations and guidelines in the National Strategic Plans for Malaria.

WHO provided technical support to mobilize Global Fund grant in the amount of $36m for Malaria response for the period July 2018 to June 2021. WHO provided financial and technical support to conduct surveys, studies, and reviews to generate strategic information for decision-making including: therapeutic Efficacy Testing of Anti-Malaria medicines used in Liberia; Health Facility survey and Malaria treatment compliance study; mass distribution of 2.7 million Long Lasting Insecticide Treated Nets (LLIN) thus increasing household ownership from 55% to 65%; and mid-Term Review of the Malaria National Strategic Plan

Due to this support, total Malaria cases declined from 2.3 million in 2016 to 1.3 million in 2017; although children under five accounted for more than 30% of the cases. Malaria admissions remained relatively constant at nearly 90,000, with children under five accounting for more 60% of the admissions while Malaria deaths in children declined from 820 to 557.

3.2 Neglected Tropical Diseases (NTDs)

NTDs are a diverse group of communicable diseases that prevail in tropical and subtropical conditions in 149 countries, affecting more than one billion people mainly living in poverty with inadequate sanitation; and cost developing economies billions of dollars every year.

Liberia has a multiple burden of NTDs with a high prevalence and co-endemicity of: Onchocerciasis, Lymphatic filariasis, Schistosomiasis, Soil transmitted helminths, Buruli Ulcer and Leprosy. Rabies and Dengue have recently been confirmed in Liberia. This multiple burden is an impediment to socio economic development of already impoverished rural communities identified to be at risk of these disabling diseases, and possess a great challenge to achievement of the SGDs.

The MoH through the NTDs program has prioritized control and elimination of NTDs in line with the targets established by WHO including: to eliminate Lymphatic filariasis as a public health problem by 2020; eliminate Onchocerciasis as a public health problem by 2025; eradication of yaws by 2020.

WHO has provided technical, financial support, capacity building and guidance to the NTDs program, in collaboration with other partners including: Sight Savers, Liverpool School of Tropical Medicine (LSTM), Accelerating Integrated Management Initiative (AIM), DAHW, AIFO, Effect-Hope (Leprosy Mission Canada), Medical Assistance Program (MAP), Partners in Health (PIH), Schistosomiasis Control Initiative (SCI); to fast-track the program targets

WHO provided technical support, guidance, capacity building, and through a multi-medicine donation by Merck and GSK supported Mass Medicines Administration (MMA) for Schistosomiasis and soil transmitted helminths (STH) in 2 phases, using praziquantel in seven targeted counties including Grand Bassa, Grand Cape Mount, Montserrado, River Gee,

Figure 3.3: *Schistosomiasis MMA implementation map, Liberia, 2018.*

Bong, Lofa and Nimba counties. An average of 82.5% (of 1,374,316 targeted people) therapeutic coverage for Schistosomiasis and STH (***The target per WHO guidelines is 75%***).

Onchocerciasis MMA was conducted in six targeted counties including Bomi, Gbarpolu, Grand Gedeh, Bong, RiverGee, and Rivercess counties. An average of 86% therapeutic coverage for Onchocerciasis.

A total of 380 health workers, 6,336 Community Directed Distributors (CDDs) and 3,723 Town Criers were trained on MMA for Schistosomiasis and STHs in 7 Counties. A total of 3,927 health personnel (252 health professionals, and 3675 community health workers) trained in NTDs ahead of MMA with emphasis on control and management of public health priority NTDs (Onchocerciasis, Lymphatic Filariasis, Schistosomiasis, Soil Transmitted Helminths and the case management of Buruli Ulcer, Leprosy, and Hydrocele).

With support from WHO, and in partnership with Center for Neglected Tropical Disease (CNTD) Liverpool, Lymphatic Filariasis (LF) Pre-Transmission Assessment Survey (Pre-TAS) was conducted at sentinel and spot check sites in 9 Counties (Maryland, Grand Kru, Rivergee, Grand Gedeh, Nimba, Lofa, Margibi, Montserrado, and Grand Cape Mt). Pre-TAS report was commissioned, with 60% (9/15) counties found to have a prevalence of LF less than 1%.

With technical and financial support from WHO, training for integrated mapping for Yaws, Buruli ulcers and Leprosy was conducted. A pilot integrated mapping was conducted in Maryland County. Yaws was confirmed to be endemic in Liberia, in Maryland county - case management, surveillance and control strategies being implemented.

With technical and financial support from WHO, delineation of onchocerciasis breeding sites was

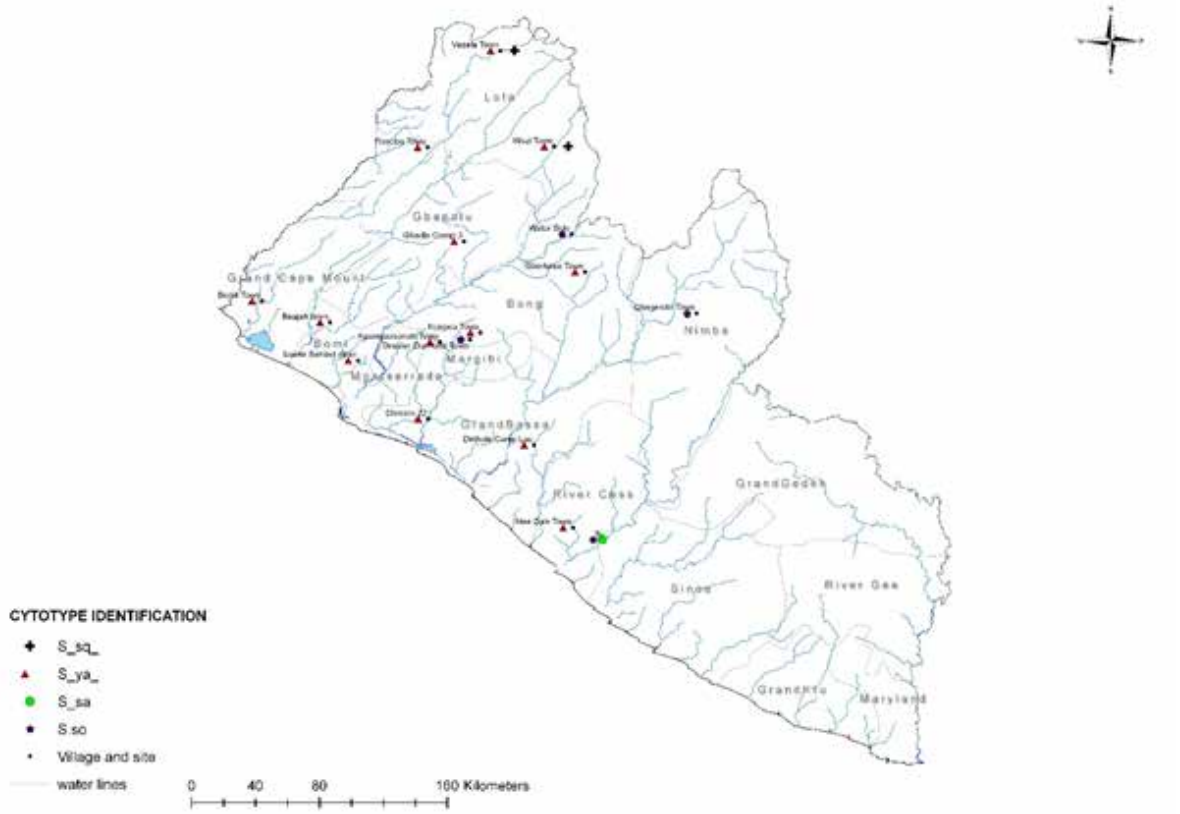


Figure 3.4: *Species distribution for the Northwest and Southwest Regions.*

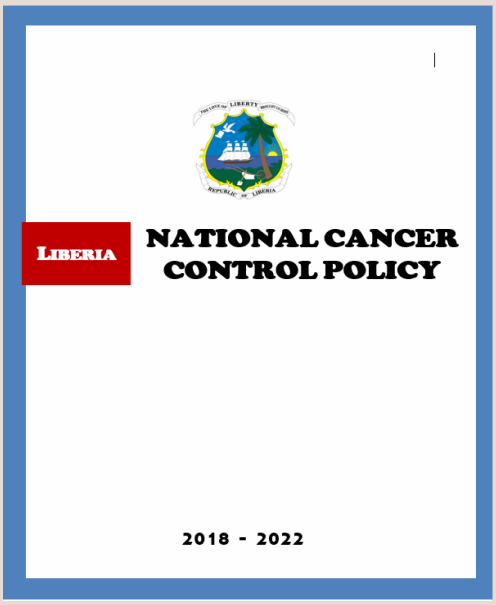
conducted, in collaboration with Sight Savers, in ten (10) counties including: Bomi, Grand Cape Mount, Gbarpolu, Montserrado, Margibi, Grand Bassa, Rivercess, Bong, Lofa and Nimba; to identify possible breeding sites of black flies that cause Onchocerciasis. The Onchocerciasis delineation report was commissioned and ***Simulium yahense*** was identified as the most widespread species in the Southwest and Northwest regions of Liberia. In addition, Onchocerciasis MMA impact assessment was conducted.

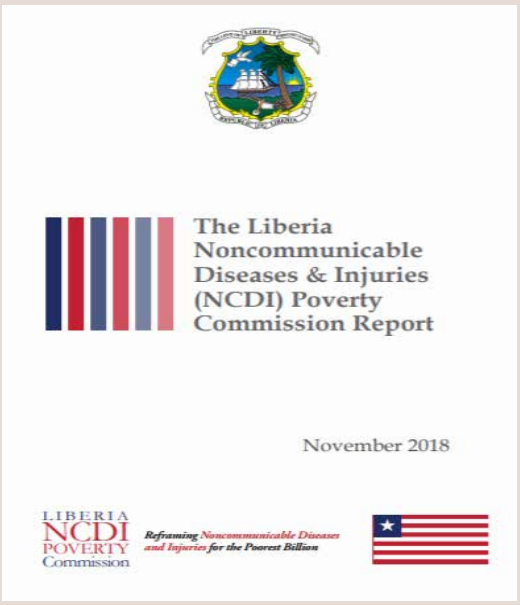
With technical support from WHO, the National NTDs steering committee was established. The National Onchocerciasis Elimination Expert Committee (NOEEC) annual meeting was held.

3.3 Non-Communicable Diseases and Injuries (NCDIs)

Non-Communicable Diseases (NCDs) are diseases of long duration and generally slow progression, with cardiovascular diseases (heart attacks and stroke), cancers, chronic respiratory diseases (chronic obstructive pulmonary disease and asthma) and diabetes as the four main types. The common NCDs in Liberia include hypertension, cancers, diabetes and chronic obstructive pulmonary diseases. NCDIs constituted an estimated 37.9% of Liberia's total disease burden and 43.4% of all deaths, in 2016. Additionally, there is a huge burden of Mental Health and Substance Abuse in Liberia due to the 14 years Civil Crisis and the Ebola outbreak. Road Traffic Accidents Deaths in Liberia reached 1,585 or 4.51% of total deaths in 2017 according to WHO report.

To combat the increasing burden of NCDIs, the MoH established the NCD program with the aim of developing and implementing strategies to increase access to NCDIs preventive, management, and control interventions, including minimizing risk factors; in collaboration with local and international partners. The program, with support from partners, developed the NCDs multi-sectoral plan to prioritize and guide interventions to combat NCDIs. Additionally, in 2017, the Government of Liberia through the MoH established the Liberia NCDI Poverty Commission, in collaboration with the Lancet Commission on Reframing Non-Communicable Diseases and Injuries for the Poorest Billion. The Commission's objectives were to explore





and quantify the burden of NCDIs and current service availability, and to propose a list of priority NCDIs and interventions that could have a favorable impact on the health and economy of Liberia.

Some of the partners supporting prevention and control of NCDIs include: WHO; Non-Governmental Organizations (NGOs) like Partners in Health, Sight Savers, Mount Sinai Hospital; Community Based Organization (CBOs) like The Cancer Association; the private sector, Drug regulatory bodies and other Government sectors like Ministries of Education, Internal Affairs, Justice, Youth and Sports, Commerce and Industry, Information, Culture & Tourism, among others.

Through technical support from WHO, multi-sectoral consultations, collaboration other partners, NCDI commission report was developed, validated and endorsed by the MoH and disseminated to stakeholders. Seventeen (17) priority NCDIs were selected for Liberia, including, asthma, chronic obstructive pulmonary disease, cardiovascular disease, rheumatic heart disease, diabetes (type 1 and 2), cervical cancer, non-Hodgkin lymphoma, breast cancer, major depressive disorder, schizophrenia, substance abuse disorders, anxiety disorders, epilepsy, sickle cell disease, vision loss, refraction and accommodations disorders cirrhosis, chronic kidney disease, and motor vehicle road injuries

Through technical and financial support from WHO and other partners like Mt. Sinai Hospital, the first ever five-year National Cancer Control policy for Liberia was developed and validated, following a multi-sectorial consultation and collaboration with other partners. The policy has five priorities including: breast and cervical cancers, Childhood cancers, Prostate cancer, Hepatitis B vaccination efforts to prevent liver cancer, and prevention of alcohol and tobacco use; and is to be implemented in 3 phases within 5 years and beyond. In addition, the community cancer registry was established at six health centres.

With technical support and guidance from WHO, establishment of Palliative care service provision was explored in Liberia following an assessment conducted by African Palliative Care Association (APCA) in 2017. A follow up mission held, training of personnel was conducted and a technical working group was established. Palliative care service provision was piloted at Redemption hospital.

3.3.1 Mental Health and Substance Abuse

Liberia has a huge burden of mental health and substance abuse problem having been through 14 years of war from 1989 to 2003 and the Ebola epidemic that killed more than 4800 people. Currently, there is one mental health referral facility and one psychiatrist for a population of 4.5 million inhabitants in the country located in Monrovia the capital. There are no well-established programs on substance abuse and those that exist are mainly provided by some churches and private individuals that are very substandard.

WHO supported MoH to increase access to quality mental health and substance abuse services (MHS), including the capacity building of mental health clinicians/MHSA workforce and infrastructure development. A total of 20 health workers from 6 counties were trained as National Addiction Professionals who also trained 35 service providers through Echo Training. One Mental Health Wellness Unit was constructed at the CH Rennie Hospital in Kakata, Margibi County.

WHO supported advocacy for budgetary allocation for mental health and substance abuse in annual national Health Budget 2018-2019 leading to receipt of US$1.5 million through the President Special Initiative Project (PSIP) for the establishment of a National Rehabilitation Center in Grand Bassa County and Construction of Mental Health Wellness Units in each of 10 Counties.

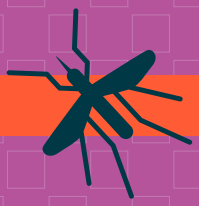
WHO collaborated with Carter Center and MoH to acquire psychotropic medications from MAP International for the treatment of more than 2,000 clients with mental disorders.

WHO supported adaptation of National Treatment Protocol for the management of Substance Use Disorders; mid-Term Review of the National Mental Health Policy and Strategic Plan; and, facility Survey for Treatment Access, Availability and Quality for the management of People with Substance Use Disorders.

WHO provided technical and financial support to the MOE in the development and validation of National School Health Policy. In addition, WHO provided logistical support for the operation of the "Step Down Project".

Figure 3.5: *Substance Use Disorders Treatment Protocol Adaptation in Gbarnga, Bong County.*

MALARIA



Health Facility survey and Malaria treatment compliance study; mass distribution of

2,700,000

million Long Lasting Insecticide Treated Nets (LLIN) thus increasing household ownership from **55% to 65%**.

HIV

The HIV service coverage has increased from 20% in 2016 to

61% in 2018.

The number of clients on ART increased from **12,116** (84% female)

in 2017 to **13,110** (74% female) in 2018.

TB

WHO supported the national TB Program to train **78** laboratory staff from 15 GeneXpert sites on basic laboratory procedures, and introduction to Laboratory Quality Management System (LQMS).

MENTAL HEALTH

WHO supported MoH to increase access to quality mental health and substance abuse services (MHS), including the capacity building of mental health clinicians/MHSA workforce and infrastructure development. A total of **20** health workers from 6 counties were trained as National Addiction Professionals who also trained 35 service providers through Echo Training.

4 FAMILY AND REPRODUCTIVE HEALTH

The FRH cluster is one of the six clusters within the WCO. The major programs of the cluster include child and adolescent health and nutrition as a block; immunization and vaccine development as another block and reproductive and women's health as a third block.

Its goal is to promote the continuum of care spanning from pregnancy and childbirth, to childhood, adolescence and beyond. The vision is to support Liberia as a country to end preventable maternal and child deaths and control vaccine preventable diseases, improve nutrition, sexual and reproductive health, gender, equity and human rights and promote healthy ageing. The mission is to promote health through the life cycle.

4.1 Reproductive Maternal Neonatal Child and Adolescents Health

WCO FRH cluster worked closely with other clusters within the WCO as well as with the Ministry of Health, specifically the Family Health Division, Community Health Services Division, EPI Division, HMIS, Nutrition Division, the Global Fund programs and other relevant programs of the MoH. Other partners included the UN agencies, Non-Governmental Organizations, health training institutions, among others. The collected efforts were towards ensuring the survival of mothers, their babies, women of childbearing age, children under five, adolescents, youth and the populace as a whole in terms of reproductive health care services. Emphases were placed on ensuring the wellbeing and the enabling environment to promote the desired health outcomes.

In an effort to support Liberia's health and overall development agenda, WHO HQ, AFRO and WCO technically and financially supported the Ministry of Health (FHD), in planning, and successfully conducting the first ever National Family Planning Conference which promoted family planning in a way that increased awareness and support for family planning interventions. The successful hosting of the conference created maximum advocacy on family planning and increased access to family planning interventions, with political commitment and uptake of family planning commodities at operational levels**.** A resolution on family planning was accepted and passed nationally. This led to increased access to family planning counseling and services.

Through the availability of skilled HR in the use of ICT equipment and data management tools, RMNCAH data analyzed resulting to the revised functional RMNCAH national scorecard; the scorecard depicts the status of core RMNCAH-N indicators being monitored for targeted interventions and policy decisions. This

Figure 4.1: *A - WCO donating an ambulance to the MoH geared towards enhancing referral pathway;*

B- National Family Planning Conference, Liberia, 2018

supported generation, dissemination and utilization of strategic RMNCAH Information, as well as monitoring RMNCAH indicators for policy making and evidence-based decisions.

Integrating WHO standards for improving QOC of maternal and newborn care in health facilities and MoH existing QOC structures, WCO technically and financially supported the MNH QOC standards in the Liberia Government Hospital in Bomi County, and its ongoing implementation in four additional health facilities. A checklist for monitoring quality of maternal and newborn care in health care facilities was developed and being utilized at the four health facilities serving as MNH QOC demonstrating sites in the country.

Task-sharing: a possible solution to accelerating the reduction of the high burden of deaths among pregnant women and neonates in Liberia: approximately nine additional obstetric clinicians trained for emergency obstetric care services and four trained as neonatal clinicians to manage and care for the sick newborn including the depressed baby. This has contributed to increased access to emergency obstetric and neonatal services in 6 counties covering seven major hospitals.

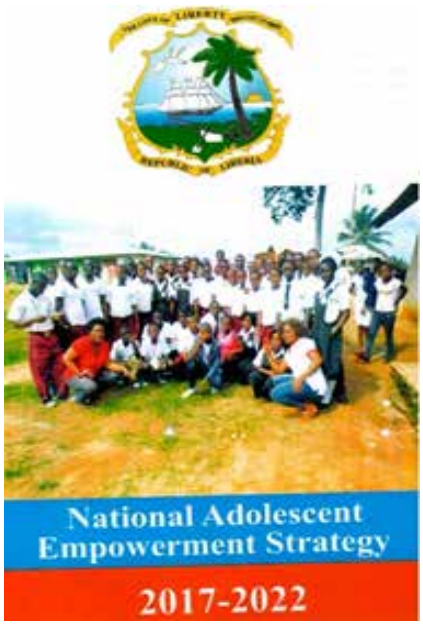


Figure 4.2: *A - Preterm newborn infant receiving Oxygen treatment; B - Training of mid-level health professionals as obstetric Clinicians.*

The Programme also provided technical support to the finalization and validation of the National Adolescent Empowerment Strategy; the strategy details key interventions for addressing adolescents and young people's specific health and development needs through sexuality education; health related interventions targeting reduction of teenage pregnancy, unsafe abortion and STIs. The National Adolescent Empowerment Strategy was developed and validated, contributing to harmonization of services for adolescents and youth.

Data in pictures showing status of national core indicators for 2017/2018

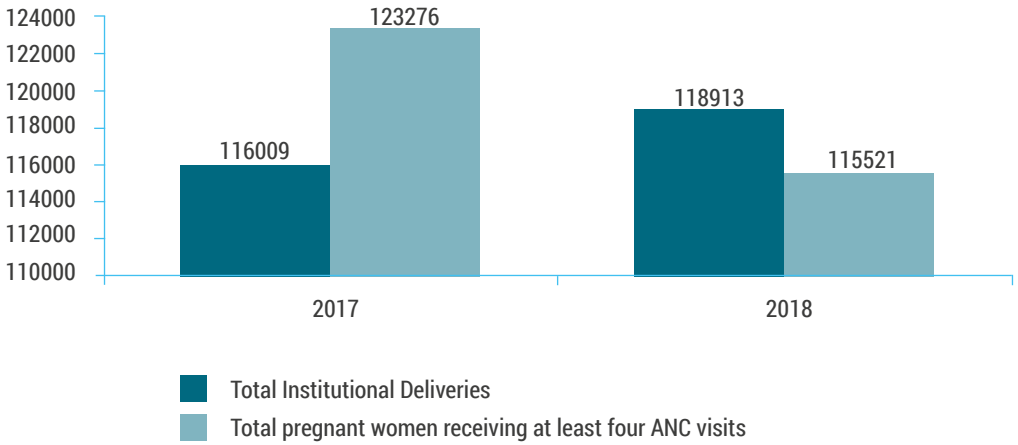


Figure 4.3: *Institutional deliveries Vs Pregnant women receiving at least four ANC visits.*
Figure 4.4: *Indicates an increase in the total number of institutional deliveries conducted in 2018 as compare to total number of deliveries conducted in 2017. There was a decrease in women receiving ANC 4 in 2018 as compare to 2017.*

Pregnant women covered with 2nd dose Intermittent Preventive Treatment (IPT) 2018

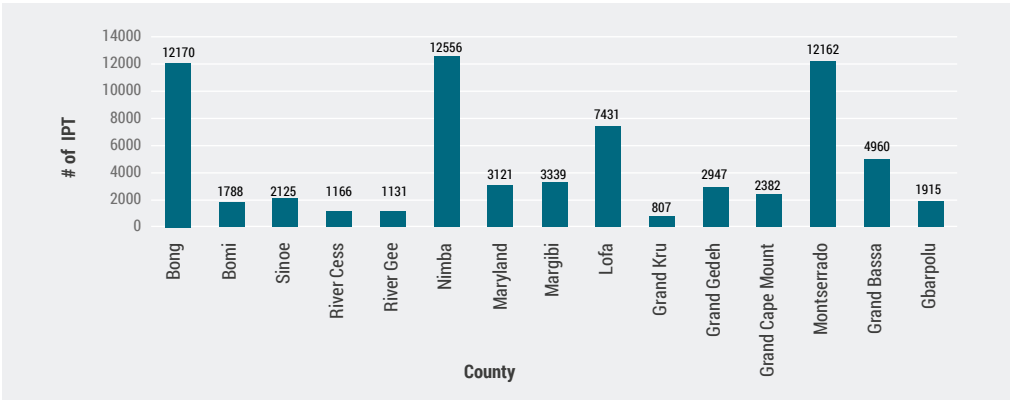


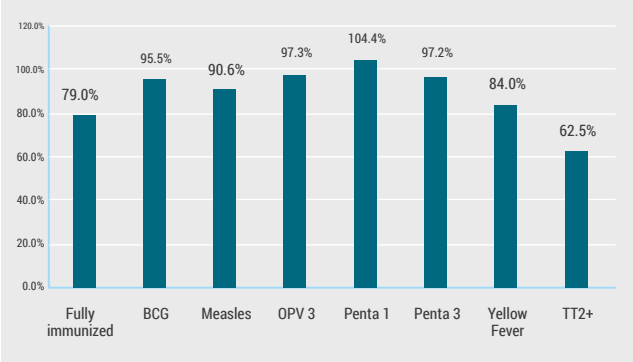
Figure 4.5: *Pregnant women covered with 2nd dose of intermittent preventive treatment (IPT) of malaria as per county for, 2018, low uptake was noted in Bong 17%, Nimba 18%, Montserrado 17, Lofa 11% counties respectively.*

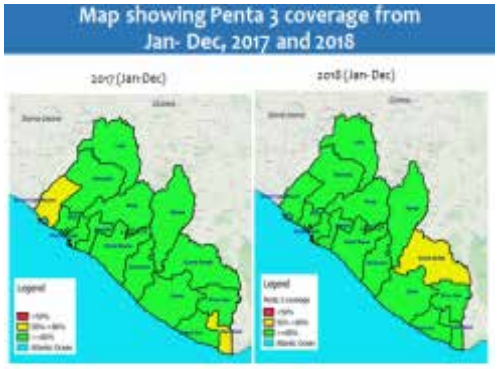
4.2 Expanded Program on Immunization (EPI)

During the review period, the goal of WHO on the program of immunization was continual restoration and strengthening of immunization services to ensure they are accessible, acceptable to all targeted beneficiaries in the country so as to attain and surpass pre-EVD outbreak coverage levels and contribute to the reduction of vaccine preventable diseases.

4.2.1 Routine Immunization

Figure 4.6: *Cumulative routine immunization coverage from January- December 2018*





The National Immunization Policy was revised and updated with technical and financial support from WHO along with other partners; Ministry of Health; EPI, Policy, M&E, Legal Departments, WHO, UNICEF, JSI and LMH.

WHO provided technical support to the Ministry of Health to conduct the 4 quarterly review meetings that meeting together all 15 child survival focal persons, CHOs, and key immunization partners. Review meeting reports were produced, with key recommendations.

WHO supported MoH personnel in the use of electronic integrated supportive supervision checklists (ISS) at county level during supportive supervision. A total of 1,612 ISS checklists have been completed from Jan - December, 2018 during the visits. Data analyzed and feedback provided to county teams to inform action plans for continued program improvement.

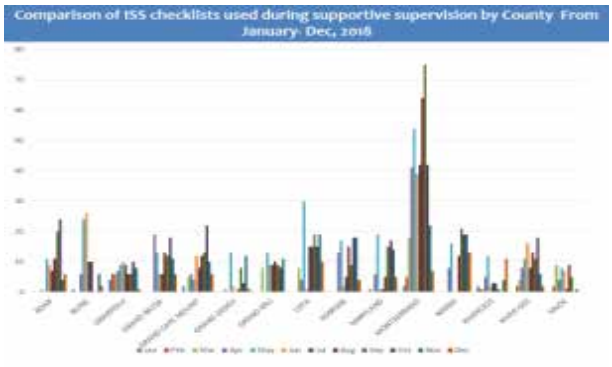


Figure 4.7: *HFs where ISS was conducted and number of ISS visits per county.*

WHO supported the 8th African Vaccination Week celebrated from 24 to 30 April 2018 with the theme "Vaccines work, Do your part!". In Liberia, the following strategies were used to reach all the children regardless of their locations:

- Outreach vaccination for hard to reach and underserved communities.
- Involvement of students, teachers and civil society organizations during the AVW.
- Forty-one (41) health facilities were involved in the AVW.

A total of 195 hard-to-reach, underserved and reporting outbreak communities were visited by vaccinators within the seven (7) days of activities. A total of 1, 264 children under 11 months were fully immunized during the AVW.

WHO supported MoH on GAVI Joint Appraisal (JA) review in August 2018. Recommendations were given based on Identified gaps and limitations.

Missed Opportunities for Vaccination (MOV) assessment was conducted in Liberia six counties (Bomi, Grand Bassa, Nimba, Grand Gedeh, Maryland and Montserrado) and improvement plans developed. The MOV technical report, as well as SOPs and Guidelines to conduct MOV were developed.


WHO Photo

WHO supported mentorship of regional vaccine store and data managers in 3 vaccine hubs on monitoring of remote temperature monitoring device, beyond wireless, completion of stock requisition/ receipt voucher; County child survival focal persons and cold chain officers from 15 counties trained on cold chain and vaccine management, including forecasting and ordering of vaccination supplies. In addition, an assessment of regional vaccine store immunization supply chain system with focus on vaccine stock management (E6), distribution (7) and information systems and supportive management functions (E9) was conducted in 15 counties.

WHO provided technical and financial support the MoH for the development of Data Quality Improvement Plan (DQIP). WHO facilitated (coordination, technical and financial support) the development of the DQIP involved desk review of relevant data quality assessments and develop improvement plans from the findings and recommendations.

Technical and financial support was provided to MoH to develop the first Liberia Guidelines, SOPs, Adverse Events Following immunization (AEFI) reporting tools and TORs for AEFI committees on AEFI surveillance and response during a workshop attended by 60 participants from NPHIL, LMRH, WHO, UNICEF, JSI.

WHO provided technical support to MoH for the submission of HPV and MCV2 vaccine introduction applications which was accepted and approved by Gavi IRC in 2018 for introduction into routine immunization schedule as MCV2 in July 2019 and HPV in October 2019, respectively. Additionally, the inactivated Polio Vaccine (IPV) Post Introduction Evaluation (PIE) was conducted covering 6 counties and 25 health facilities.

WHO together with MoH, NPHIL, CDC, and NIH developed a Protocol addendum on SEA and logistic hubs for EVD vaccine deployment, updated protocol and developed budget proposal for VSV deployment during an outbreak and simulations exercises. PIE Guidelines and SOPs were adapted, IPV PIE technical report was produced, and, HPV and MCV2 introduction application was approved.

4.3 Polio Eradication

Conducted quarterly National Polio Committee Meetings including NTF, NPEC and NCC members during which annual polio updates were developed and submitted, final classification for AFP cases were conducted.

Provided technical, financial and logistic support for Integrated Oral Polio Campaign conducted from 4 – 7 May 2018 and from October 26 - 29, 2018 with administrative coverage of 98% and 97% respectively for round 1 and 2 which was evaluated with Independent monitoring (IM) and Lots Quality Assurance Sampling (LQAS) survey. Supported pre-implementation, implementation and post implementation activities for the campaigns.

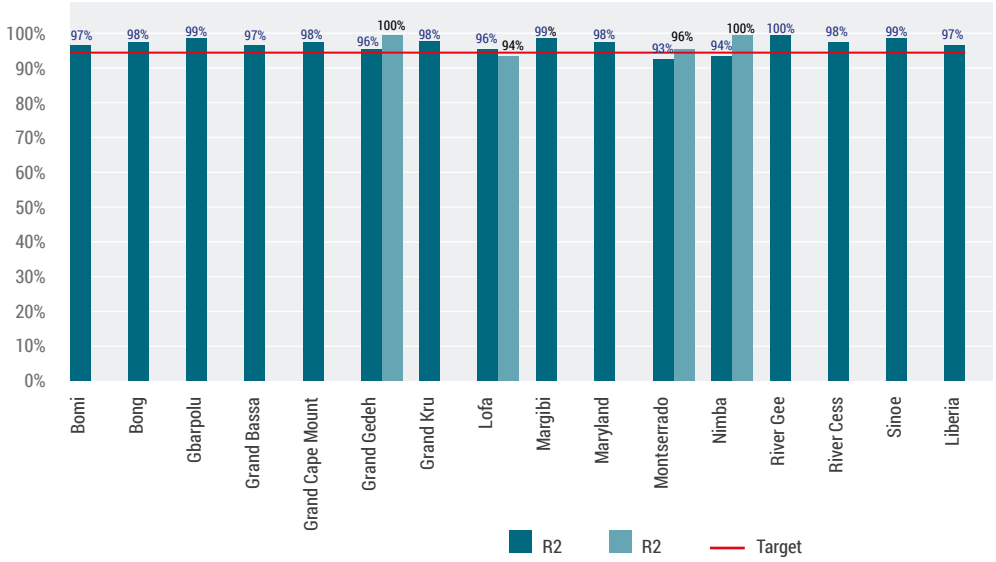


Figure 4.8: *Administrative coverage of round 1 and 2 polio campaign 2018.*

County	Number of <5 Children, LQAS	Conclusions LQAS Feb/2017	Conclusions LQAS Mar/2017	Conclusions LQAS Nov/2017	Conclusions LQAS Dec/2017	Conclusions LQAS May/2018	Conclusions LQAS Oct/2018
Bomi	60	Accepted	Accepted	Rejected	NA	Accepted	NA
Bong	60	Accepted	Accepted	Accepted	NA	Accepted	NA
Gbarpolu	60	Accepted	Accepted	Accepted	NA	Accepted	NA
Grand Bassa	60	Accepted	Accepted	Accepted	NA	Accepted	NA
Grand Cape Mount	60	Accepted	Accepted	Accepted	Rejected	Accepted	NA
Grand Gedeh	60	Accepted	Rejected	Accepted	Accepted	Accepted	Accepted
Grand Kru	60	Rejected	Accepted	Accepted	NA	Accepted	NA
Lofa	60	Rejected	Accepted	Accepted	Rejected	Rejected	Accepted
Margibi	60	Accepted	Rejected	Rejected	Accepted	Rejected	NA
Maryland	60	Rejected	Rejected	Rejected	Rejected	Rejected	NA
Montserrado	60	Accepted	Rejected	Accepted	Accepted	Rejected	Rejected
Nimba	60	Rejected	Accepted	Accepted	Rejected	Accepted	Accepted
Rivercess	60	Rejected	Accepted	Accepted	Accepted	Accepted	NA
River Gee	60	Accepted	Accepted	Rejected	NA	Rejected	NA
Sinoe	60	Rejected	Rejected	Rejected	NA	Accepted	NA

Legend [LQAS Coverage Band]			
	>=90%		
	80%-<90%	NA	No Campaign
	<80%		

Figure 4.9: *LQAS results of all campaigns conducted in 2017 and 2018.*

All the 15 WHO county coordinators were trained on AFP and other VPD surveillance to enable them to sustain the gains made in AFP surveillance and maintain a certification standard of AFP surveillance at the county and districts levels.

WHO conducted Rapid AFP surveillance assessment and active case search in March and August 2018 covering all 15 counties, 50 districts and 99 health facilities across Liberia. A training report was produced. Findings from the assessment were used to inform improvement plans at national and sub-national levels for active surveillance activities for AFP and VPDs. This has resulted in improved AFP surveillance indicators.

AVADAR implementation is ongoing (funded by BMGF and in partnership with Novel-t) in 4 districts of Montserrado county (Careysburg, Central Monrovia, Commonwealth and St Paul districts). A total of 290 informants, 93 health workers and 14 surveillance officers are engaged in AVADAR and provided with mobile phones to report AFP alerts and for investigation.

4.4 Accelerated Measles control

Conducted nationwide measles Campaign (including IM and RCS) in all 15 counties and a nation-wide measles follow-up campaign administrative coverage of 97% and 94% respectively along with partners such as UNICEF, CDC, USAID, JSI, LMH, LIP etc. which was followed by Post Measles campaign coverage survey to evaluate the coverage achieved by the campaign. Whereas the number of measles cases recorded in 2018 were much higher than 2017, a similar downward trend was noticed from Epi week 21 to 52.

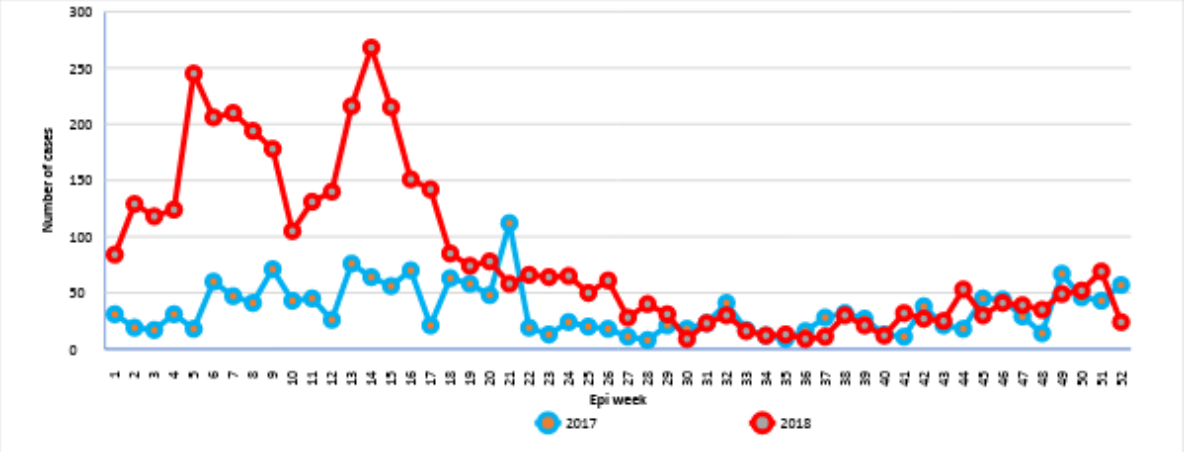


Figure 4.10: *Trends in numbers of suspected measles cases reported by Epi week as of week 52, 2017-2018, Liberia.*

A total of **195** hard-to-reach, under-served and reporting outbreak communities were visited by vaccinators within the seven (7) days of activities.

WHO / P. Glee

A total of

1,264

children under 11 months were fully immunized during the AVW.

5 HEALTH INFORMATION, PROMOTION AND COMMUNICATION

WHO in 2018 joined the rest of the world in commemoration of health days (World Malaria Day, World Diabetes Day, African Vaccination Week, Blood Donor Day, World AIDs Day, and World TB Day) with activities focused on enabling the public increase control and improve their health stimulating recommitment for support and calling for action.

5.1 Health Promotion and Disease Prevention

Health Promotion being a cross cutting and multi-disciplinary strategy, the WCO Health Promotion unit collaborated with the various clusters in addressing the health promotion and communication needs of the all the clusters. WHO in 2018 provided extensive support for key health promotion activities relating to immunization campaigns, maternal and child health priorities, preventing and treating communicable and non-communicable diseases, as well as the importance of antenatal care and institutional deliveries. In all of WHO's health promotion activities community engagement and social mobilization strategies were focused at highlighting the important role played by traditional and religious leaders, the media, youth clubs, sports organizations, women's networks, service organizations such as Lions and Rotary clubs, and the private sector.

WHO in 2018 joined the rest of the world in commemoration of health days (World Malaria Day, World Diabetes Day, African Vaccination Week, Blood Donor Day, World AIDS Day, and World TB Day) with activities focused on enabling the public increase control and improve their health stimulating recommitment for support and calling for action.

WHO supported the development of a wide range of health promotion materials, both print and electronic, covering a range of issues, including Cholera, Buruli ulcer, Yaws and IDSR priority diseases.

WHO supported the MoH with the requisite technical and financial assistance to review and update messages on Health Promotion, Lassa fever and measles and meningitis.

WHO in 2018 supported the Ministry of Health Communication Unit to partner with Liberia Broadcasting System-ELBC and the Fabric FM radio station to keep the public informed and updated about key health programs being undertaken through a total of 96 interactive radio talk show programs.

Figure 5.1: *Social mobilization activity during nationwide measles campaign.*

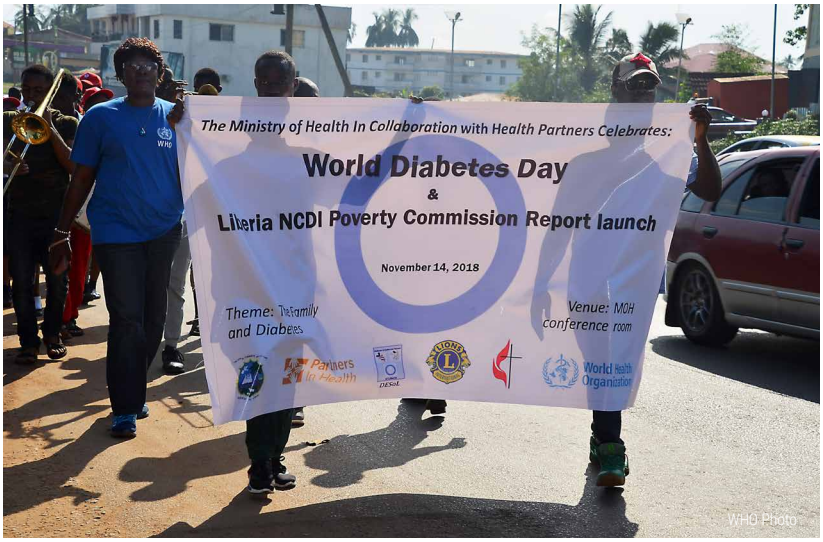


Figure 5.2: *Commemoration of World Diabetes Day in Monrovia, Liberia.*

In collaboration with the US-Center for Disease Control (CDC) in training 72 health promotion officers from the 15 counties on Risk Communication and health reporting.

Five (5) media briefings were organized in collaboration with the Economic Community of West African State radio on key priority health events.

13 web articles on key national health events were developed, shared with AFRO and published on WCO website.

WHO P. Glee

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6 WHO FIELD OFFICES

One of WHO Liberia comparative advantages is presence of field offices in all the 15 counties of the country and the cordial working relationship with County and district health teams across the country in the provision of basic health Services under the Essential Package of Health Services as aligned to the day to day realities in the health sector.

The WHO Field Epidemiologists (technical staff) offer technical, logistical and financial support to the County Health Teams (CHT), District Health Teams (DHT), health facilities and communities with funding support from the US-CDC, GAVI and WHO AFRO region.

The fundamental technical support include; strengthening the surveillance system through IDSR strategy, Community based disease surveillance, Expended Program on Immunization (EPI), Infection Prevention and Control (IPC), Epidemics Preparedness and Response (EPR) Family Reproductive Health, Maternal Neonatal and Peri-natal Death Surveillance (MNPDRS), Neglected Tropical Diseases (NTDs),Non-Communicable Diseases (NCDs), WASH, Laboratory, AMR stewardship, Mental Health, data Management, TB/HIV/Hepatitis/Malaria control programs, risk communication and health promotion as well as health system strengthening.

During the period under review, WHO field teams supported the Ministry of Health's county offices (County health teams) in the implementation of health programs based on the national health investment plan 2015 to 2021 results of which include; 73% (570/777) health facilities surveillance focal persons mentored by WHO Field Epidemiologists and District Surveillance officers (DSOs) on IDSR priority diseases and events using ODK-ISS check list improving timeliness and completeness of surveillance reports to 96 and 94 respectively for 2018 and 7,465 priority diseases alerts reported, verification and investigated with in 48hrs compared to 4,729 reported in 2017.

WHO County Teams also supported the Training and Mentorship of 1150 Health workers on AFP/VPD active case search in 15 counties that led to national Non-AFP Polio Rate of 3.7, a 90.3% of AFP cases with stool specimen collected within 14 days and 27% of non-polio entero viruses (NPENT).

Figure 6.1: *WHO country office and field offices location while on the left is on job supportive supervision for community health workers by WHO field team members.*

AFP surveillance indicators by County, as of Week 52, Liberia

	Total Population	<15 years Population	# of expected AFP cases	# of reported AFP cases	Non-Polio AFP Rate	# of cases within 14 days of stool	% of cases within 14 days stool	# of NPENTs	% of NPENT
Bomi	103,550	46,598	1	2	4.3	2	100.0%	0	0%
Bong	410,514	184,731	4	6	3.2	5	83.3%	2	33%
Gbarpolu	102,650	46,193	1	1	2.2	1	100.0%	1	100%
Grand Bassa	272,905	122,807	2	4	3.3	3	75.0%	1	25%
Grand Cape Mount	156,429	70,393	1	3	4.3	3	100.0%	1	33%
Grand Gedeh	154,192	69,386	1	3	4.3	3	100.0%	1	33%
Grand Kru	71,291	32,081	1	3	9.4	3	100.0%	0	0%
Lofa	340,818	153,368	3	7	4.6	7	100.0%	2	29%
Margibi	258,415	116,287	2	3	2.6	3	100.0%	2	67%
Maryland	167,340	75,303	2	4	5.3	3	75.0%	0	0%
Montserrado	1,376,553	619,449	12	24	3.9	22	91.7%	5	22%
Nimba	568,754	255,939	5	7	2.7	7	100.0%	3	43%
Rivercess	82,217	36,998	1	2	5.4	1	50.0%	1	50%
River Gee	88,028	39,613	1	1	2.5	1	100.0%	0	0%
Sinoe	126,042	56,719	1	2	3.5	1	50.0%	0	0%
Liberia	4,279,698	1,925,864	39	72	3.7	66	90.3%	19	27%
Legend		NPAFP rate			>=2	% of cases within 14 days stool	>=80%	NPENT rate	>=10%
					<2		<80%		<10%

Figure 6.2: *AFP surveillance indicators by County, as of Week 52, Liberia.*

WHO field teams in collaborated with NPHIL, MoH and partners (US-CDC, IOM, PACS, JIZ) and conduct simulation exercises in Grand cape mount, Lofa, Margibi, Bong, Nimba, Grand Bassa and Montserrado counties and lessons learnt used to strengthen the country's readiness and preparedness capacity to prevent, detect, respond and control public health threats and development of contingency plans for Ebola, Lassa fever and Cholera

Additionally WHO field teams In collaboration with the County health teams, US-CDC, ACCEL offered on job training and mentorship for 1,325 HCWs in the application of standard universal precautions in healthcare facilities in Grand Bassa, Rivercess and Lofa counties, increased the production and availability of alcohol –based hand rub (ABHR) for use in all hospitals in Lofa and Bong counties and training 16 pharmacists for scale up the production which led to Improved Hospital's hand hygiene and waste management compliance >80% as compared to < 60% in 2017 and overall 84% IPC standards compliance (for 11 indicators) an improvement of 47% from baseline.

The WHO field teams supported mentorship of 516 midwives on monitoring MCH progress using the MCH chart which has contributed to noticeable increase in ANC visits and health facility skilled deliveries. Additionally, WHO supported maternal child health (MCH)conferences held in 8 counties where county specific MCH and MNPDSR performance was reviewed and lessons learnt being used to strengthen MNPDSR policy including maternal, perinatal and neonatal death reviews aimed at reducing the maternal, perinatal and neonatal mortality rates in Liberia.

WHO vehicles in the field also facilitated joint field movements with CHTs and partners like out breaks investigation and response, Integrated Joint Supportive Supervision (IJSS), bundle vaccines and medical supplies distribution which strengthened partner's collaboration and team work in field. Additionally, WHO supported the CHTs with emergency medical supplies, IDSR specimen collection kits, IEC materials for priority disease and NTDs drugs which enabled the county health teams extend health service to more vulnerable populations in Liberia.

Figure 6.3: *Emergency supplies and IEC procured for county health teams to respond to disease outbreaks and NTDs.*

WHO County Teams also supported the Training and Mentorship of

1,150

Health workers on AFP/VPD active case search in 15 counties that led to national Non-AFP Polio Rate of **3.7**.

The WHO field teams supported mentorship of

516

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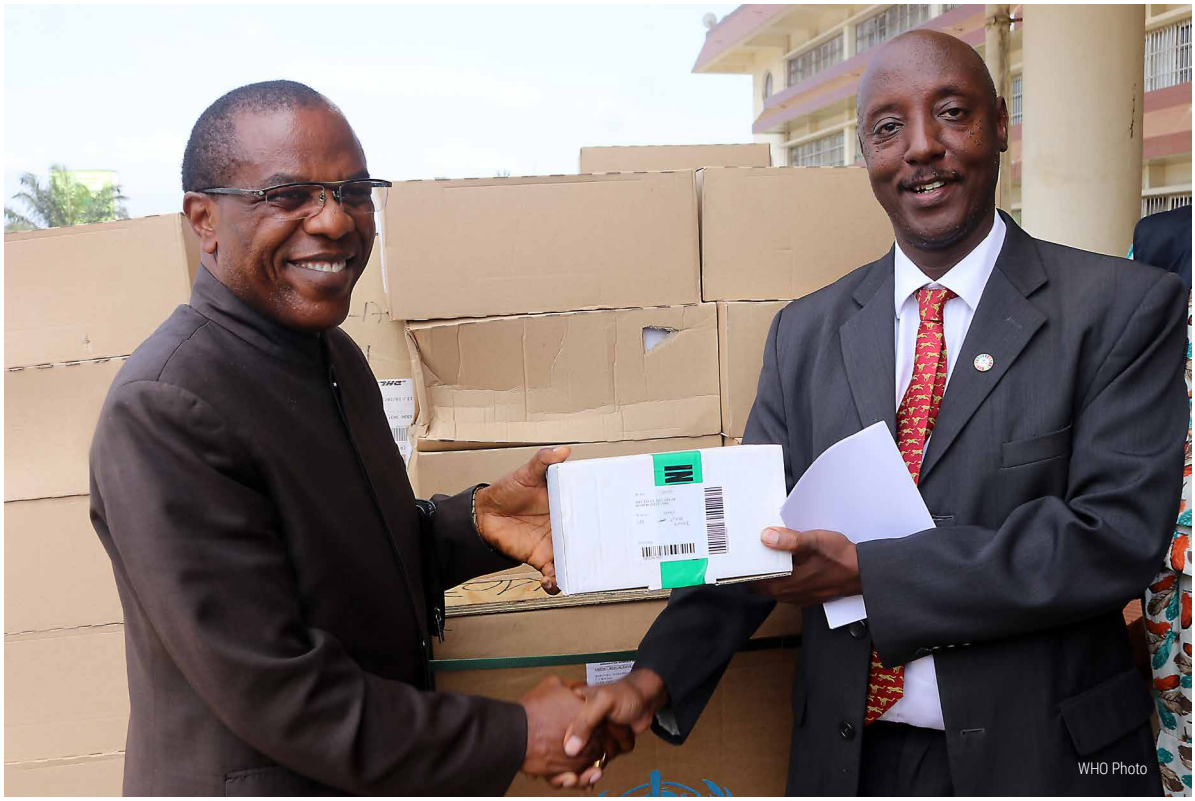
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7 COUNTRY SUPPORT UNIT

The WCO relocated from Mamba Point –UN drive building to Pan African Plaza-One UN building where all UN agencies are located in the same building which has enhanced the collaboration among the UN agencies under One UN platform coordinated by the UN resident coordinator for Liberia.

7.1 Administration, operations and Finance

The Finance and Operations team at WHO Liberia plays a critical role in ensuring a supportive environment that enables staff to deliver on all their responsibilities and commitments. The Finance and Operations Team in 2018 ensured proper implementation of financial procedures, systems and internal controls according to Global Management System (GSM) instructions and WHO rules. In addition, the Finance and Operations team handled disbursement of funds for program activities, tracked expenditures and facilitated the timely payment and transfer of funds to the Ministry of Health for polio campaigns and program activities. Administrative and financial support was provided to the WHO teams in all 15 counties. The E-Imprest system was carefully managed; end-month closure reports were prepared and submitted to the WHO Regional Office for Africa on a monthly basis within the allocated deadlines.

The WCO relocated from Mamba Point –UN drive building to Pan African Plaza-One UN building where all UN agencies are located in the same building which has enhanced the collaboration among the UN agencies under One UN platform coordinated by the UN resident coordinator for Liberia.

7.2 Transparency, Accountability and Risk management

Transparency, accountability and risk management are priorities of the WHO Reform Agenda; in 2018 WHO country office-Liberia enhanced transparency and accountability for all financial transactions thus reducing financial risks to the Organization and its donors. Mechanisms are in place to ensure that reporting and accountability requirements are met on a timely basis. The Country office follows procurement procedures in conformity with the UN standards. The procurement Key Performance Indicator (KPI) of carrying out evaluations of current suppliers' performance was maintained in 2018 in accordance with WHO procurement rules and guidelines.

7.3 Security

The Security Unit also worked closely with UNDSS to ensure that accurate records were maintained with details related to the location of accommodation of WHO international personnel and ensured that the Minimum Operating Residential Security Standards (MORSS) were being met.

The WHO Liberia security KPI was met. All UNDSS security advisories relating to demonstrations, hazardous road conditions, or locations to be avoided were disseminated among WHO national and international personnel.

7.4 Human Resource

The WHO Country Office in 2016 benefitted from the appointment of a Human Resources Officer, who in support of the WHO Regional Office for Africa's Transformation Agenda has enhanced the office's efficiency, transparency and accountability. Throughout the year the Human Resources team played an instrumental role in facilitating WHO Liberia's transition from an emergency to recovery mode. This included timely staffing of the relevant areas most specifically Health Systems Strengthening, exploring cost-effective types of contracts for United Nations Volunteers, effective segregation of roles for members of the administrative teams working at national level in Monrovia and in the 15 field offices across the country, advising on managing redundancy and separations in accordance with the rules and regulations, and establishing a roster for the 84 WHO drivers.

With respect to performance evaluation, compliance with the Enhanced Electronic Performance Management and Development system (ePMDS+) by WHO Liberia personnel has steadily increased.

The WHO Liberia Human Resources (HR) team throughout 2018 provided consistently high levels of support for the 105 Personnel based at the national office in Monrovia and at the 15 county offices.

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8 KEY CHALLENGES

Despite the numerous gains made during 2018, key challenges were experienced during the course of the operational period.

These challenges ranged from health system challenges, both in terms of planning and service provision, including limited technical and institutional capacity along the various hierarchy of the health system and service delivery systems, in terms of inadequate number and limited skill mix and mal-distribution of health workers; management and leadership issues, inadequate supply chain systems and lack of quality information systems with low culture of information use for decision making, planning and monitoring of health service delivery. There is limited fiscal space, alignment and harmonization of domestic and development partners' resources along the priorities set in the national health policy and strategic plan as well as the investment plan for recovery and development of a resilient health system for Liberia.

Bad road conditions during the prolong rainy season that impede effective service delivery and the lack of integrated health sector progress and performance monitoring and review mechanism between programs and the national health system are critical challenges faced the during the implementation of its work plan.

Majority of vaccinators not on GOL payroll and affects motivation to implement activities, while delay or non-payment of incentives/ operational support to surveillance officers adversely affecting VPD and IDSR surveillance activities while delayed disbursement of funds from MoH national level to county levels and liquidation of expenditures from county to national level affecting timely program implementation.

Unacceptably high burdens of maternal and newborn deaths in Liberia: MMR of 1072/100,000 and NMR of 26/1000 (LDHS 2013) and inadequate resources to address the causes of death and recommendations of MNDSR reviews on top of the high staff turnover due to low motivation. Additionally the Low capacity of health care facilities for data quality management, analysis and use at the point of collection for informed decision making and improvement of the quality of care for maternal, newborn and under five years survival, IPC, and disease outbreaks early warning, preparedness and response.

The inadequate funding to sustain WHO technical staff salaries and programs implementation affected catalysis of programs implemented by MoH and the heavy reliance on WHO and a few development partners to support health programs implementation amidst reducing funding remains a challenge. The frequent stock out of basic medical supplies, IPC supplies, on and off stock out laboratory test kits and supplies for priority diseases and lack of adequate dedicated staff for the isolation units hindered the full implementation of the IHR.

Access to safe and quality drinking water in rural and urban Liberia is a challenge. Robust rural and urban water safety planning for an adequate and safe supply of drinking water remains an alternative, while at the same time setting the context to combat the uncertainties arising from changes in the climate and environment. Some challenges experienced by the team during this period of response are from both the WHO and that of partners.

Inadequate funding to support the full implementation of IHR core capacities across the 15 counties and the heavy reliance on partners for funding of MoH/ NPHIL activities.

Health Promotion unit being significant in promoting good Health was constrained in implementing all of the planned core activities for the reporting period. This being due to among other things, the shortage and unavailability of budgetary support.

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9 LESSONS LEARNT

Sustained partnership coordination mechanism added value for setting the agenda for appropriate reforming of the health sector policies and strategies along the continuous recovery and for development of a sustained and resilient health system considering context, actors and process.

The utilization of the Health Services Coordinating Committee, one health platform for sustained harmonization and alignment of stakeholders' programs along a strong cooperation of the WHO with the MoH and all relevant stakeholders in the country led to synergies in health programs implementation. WHO's strong engagement and cooperation with the government and partners provided the basis for priority health sector investment for building technical and institutional capacities at all levels of the health system.

The use of electronic mobile data collection platform (electronic IDSR, ODK for ISS, eSurv, LQAS, Measles Coverage Survey) enhanced real time supervision, feedback and accountability of WHO personnel during field activities.

10 RECOMMENDATIONS AND KEY ACTIONS

Liberia has the drive and capacity to introduce new vaccines into the routine immunization program, however strong monitoring systems should be in-place immediately after introduction to ensure guidelines and SOP are followed.

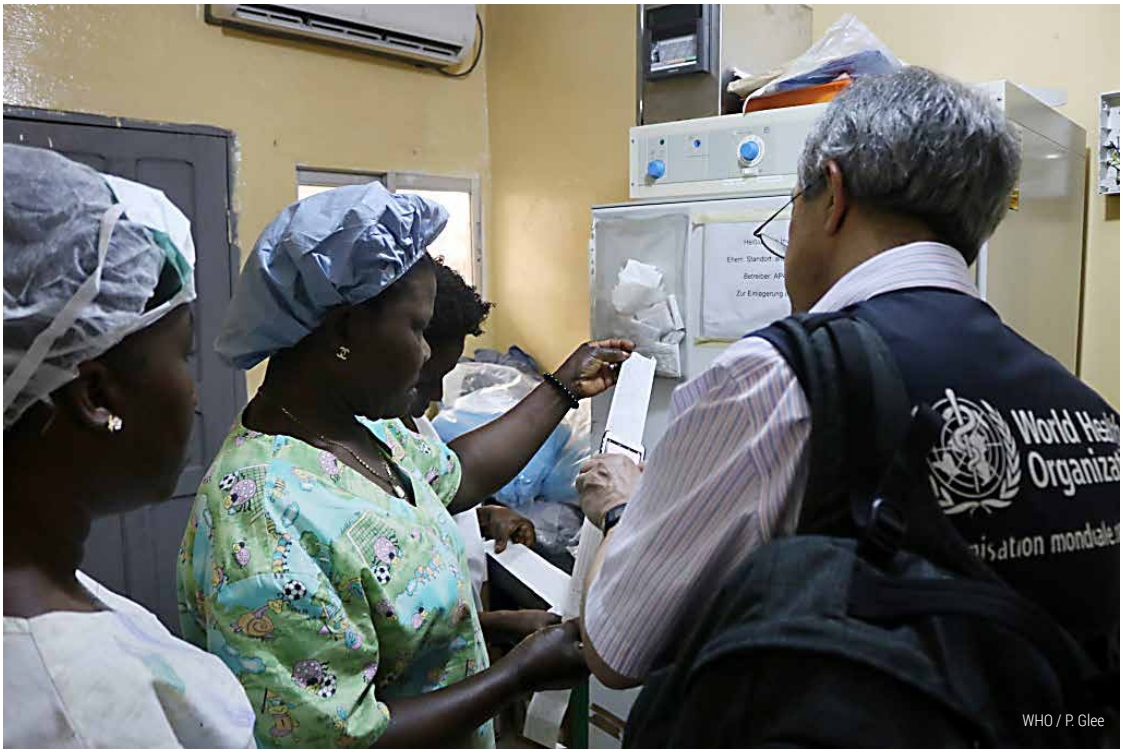
The IDSR system in Liberia is not yet sustainable by GOL and will require further partner support. As such, contingency measures should be in place to support the system when the surveillance officers refuse to work once operational support or incentives are delayed.

Strong data quality improvement systems and in-depth analysis to inform evidence-based decision making for program improvement at all levels.

Enhance WHO's constitutional role for health development considering Liberia's health sector reform and keep momentum in supporting the technical and institutional capacity building for health system strengthening along the national health policy and the investment plan.

Health partners should align and harmonize their individual plans and resources along the national policies and plans as stipulated in the IHP+ for joint results while the MoH should ensure stewardship for implementation and accountability for results.

Innovations for increasing skilled birth attendants such as the task sharing programs for obstetrics and neonatal care do have notable results and can lead to the desired pregnancy outcomes of live healthy mother and infant.



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11 PRIORITIES FOR 2019

Major core priorities for the WHO Country Office (WCO) in 2019 include conducting high quality polio national immunization days (NIDs) campaigns that are integrated with high impact interventions such as nutritional supplementation and deworming in addition to instruction of 2 new vaccines (HPV and MCV2) in the routine EPI schedule.

WHO will support the implementation of community health services operational plan and community engagement strengthening activities.

WHO will provide support to disseminate National cancer strategy, treatment guidelines and finalize palliative care pilot at redemption hospital, scale up to other facilities, roll out IPC, National Water Quality Standards and Guidelines, Health facilities WASH guidelines and update and roll out Liberia IDSR technical guidelines in line with AFRO-IDSR 3rd Edition technical guidelines; Support MoH develop, implement and sustain a standardized and harmonized performance monitoring, evaluation and reviews of programs and national health Plans, including, DASH BOARDS and policy briefs; Provide technical support to the MoH; develop and operationalize a standardized and integrated health information system, including, HF surveys and reviews, RDQA etc.,

WHO will support MoH, LIGGIS, NPHIL and partners conduct of National Demographic Health Survey (DHS), DHS-Ebola and Hepatitis sero-survey, Lassa fever risk assessment survey in 7 counties, Liberia IDSR implementation status research and prevalence of unintentional injuries and develop multi-sectoral action plan to address the findings.

Also key is support in the establishment of multi-disciplinary rapid response committees at health facility level to strengthen resilience in early disease outbreaks detection, response and prevention during their first generation of cases; Scale up operationalization of the adopted maternal newborn quality of care standards in six additional focused counties: Grand Cape Mount, Gbarpolu, Rivercess, Grand Kru, Maryland and River Gee Counties and supportive supervision and mentorship in IDSR, data quality improvement, IPC, WASH, AMR, TB/HIV/Hepatitis services, MNH QOC health facilities for monthly MNH QOC analysis and feedback.

12 CONCLUSIONS

WHO is committed to continue supporting the Government of Liberia through the Ministry of Health and partners to strengthen the health care service delivery as well as capacity for disaster risk management and responding to possible emerging and re-emerging public health emergencies including new health threats.

During the period under review, the country office made progress in building and strengthening local staff capacity as the number of international staff is gradually being reduced. This is aimed at enhancing continuity and sustainability in the execution of the country programs. The Lessons learnt during the implementation of the 2018 work plan, will be used to strengthen the 2019 country office plan.

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