Joint external evaluation of IHR core capacities of

Sierra Leone

Mission report:

27 February – 3 March 2023

World Health Organization

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Abbreviations

AMR:	Antimicrobial Resistance
AST:	Antimicrobial Susceptibility Testing
CBRN:	Chemical, Biological, Radiological and Nuclear
CDC:	United States Centers for Disease Control and Prevention
CPHRL:	Central Public Health Reference Laboratory
CVL:	Central Veterinary Laboratory
DEHS:	Directorate of Environmental Health Services
DHSE:	Directorate of Health Security and Emergencies
DLDBS:	Directorate of Laboratory, Diagnostics and Blood services
e-CBDS:	The electronic case-based disease surveillance system
ECDC:	European Centre for Disease Prevention and Control
ECOWAS:	Economic Community of West African States
EIOS:	Epidemic Intelligence from Open Source
EOC:	Emergency Operation Centres
EPR:	Emergency Preparedness and Response
EPRRG:	Emergency Preparedness Resilience and Response Group
EQA:	External Quality Assurance
EVD:	Ebola Virus Disease
FAO:	Food and Agriculture Organization of the United Nations
FETP:	Field Epidemiology Training Programme
GDP:	Gross Domestic Product
HCAI:	Health care associated infection
HRH:	Human Resource for Health Policy
IAEA:	International Atomic Energy Agency
IDSR:	Integrated Disease Surveillance and Response
IHR NFP:	National IHR focal points
IHR:	International Health Regulations
IMS:	Information management system
HPV:	Human papillomavirus
ILO:	International Labour Organization (Office)
INFOSAN:	International Food Safety Authorities Network
INTERPOL:	International Criminal Police Organization
IPC:	infection prevention and control
JRA:	Joint Risk Assessment Operational Tool

LQMS:	Laboratory quality management systems
MAFS:	Ministry of Agriculture & Forestry
MDAs:	Ministries, Departments and Agencies
MDRO:	Multidrug-resistant organisms
MOECC:	Ministry of Environment and Climate Change
MOHS:	Ministry of Health and Sanitation
NAPHS:	National Action Plan for Health Security
NEMS:	National Emergency Medical Service
NERP:	National Emergency Response Plan
NLS:	National Laboratory Services
NPHEPR:	National Public Health Emergency Preparedness and Response
NSRPA:	Nuclear Safety and Radiation Protection Authority
OH:	One Health
ONS:	Office of National Security
PBSL:	Pharmacy Board of Sierra Leone
PCR:	Polymerase chain reaction
PHEIC:	Public health emergency of international concern
PHU:	Peripheral health unit
PoC:	Point of contact
PoE:	Point of entry
RCCE:	Risk Communication and Community Engagement
RRT:	Rapid Response Team
RSLAF:	Republic of Sierra Leone Armed Forces
SARS:	Severe acute respiratory syndrome
SLMTA:	Strengthening Laboratory Management Toward Accreditation
SOP:	Standard operating procedure
STAR:	Strategic Tool for Assessing Risk
TAT:	Turn-Around-Time
TB:	Tuberculosis
THIRA:	Threats Hazard Identification and Risk Assessment
TWG:	Technical Working Group
UNEP:	United Nations Environment Programme
UNICEF:	United Nations Children's Fund
WHO:	World Health Organization
WOAH:	World Organisation for Animal Health (formerly the OIE).

Executive summary

Sierra Leone is the first country in the African Region to conduct a second JEE, and the third country in the world to use the third edition of the JEE tool. This demonstrates leadership, strong commitment and confidence in the process on the part of the government. The country is commended for the tremendous success recorded over the past few years in the health sector, and especially in the animal health sector, where Sierra Leone moved from a 32% score in 2018 to a 51% score rating in 2021.

Since the last JEE in 2016, considerable efforts have been made by the country in the domain of public health, as reflected in the table below.

2016 JEE priority areas for improvement	Country status and key achievements by 2023
• Revise laws and legislation to facilitate the implementation of the International Health Regulations (IHR 2005), specifically the Public Health Ordinance of 1960 and the Animal Act of 1949.	• Public health laws and legislation (Public Health Bill, Animal Health Bill and Animal Welfare Bill) in the human and animal health sectors have been revised.
• Systematize and provide resources and direction to strengthen and sustain the National IHR Focal Point and the World Organisation for Animal Health (WOAH).	• The National IHR Focal Point centre is now running and is adequately equipped with human resources and administrative and technological capacities.
• Scale up the Field epidemiology training programme (FETP) to cover intermediate and advanced courses at national and district levels, including veterinary and laboratory staff.	• Two levels of FETP (frontline and intermediate) are in place in the country. • The country has equally launched the FETP Light, a less demanding programme, that equips a wider range of technical staff with preliminary analysis skills.
• Accelerate the implementation of the One Health approach.	• Improved multisectoral coordination at the national level.
• Conduct joint Ministry of Health and Sanitation (MOHS) and Ministry of Agriculture, Forestry and Food Security (MAFFS) formal prioritization of the zoonotic diseases list.	• The list of priority zoonoses was developed using the One Health Zoonotic Disease Prioritization Process in a multisectoral forum convened in 2018. They are: anthrax; salmonellosis; plague; viral haemorrhagic fevers (Ebola Virus Disease, Marburg, and Lassa fever); rabies and zoonotic influenza.
• Develop strategies and plans for the detection of antimicrobial resistance (AMR) and its mitigation and stewardship.	• The country has a national One Health AMR strategic plan (2018–2022) approved in 2019.
• Formulate a multi-hazard National Public Health Emergency Preparedness and Response (NPHEPR) plan, underpinned by the One Health and whole-of-government approach.	• There is a Multihazards Public Health National Emergency Response Plan which was developed in coordination with the MOHS EPR unit.
• Strengthen cross-border collaboration and initiatives and cross-border community-based surveillance as part of the comprehensive NPHEPR plan.	• Cross-border coordination meetings have been conducted with the neighbouring countries.

To sustain and further advance these achievements, the country is encouraged to fully leverage the IHR (2005) in order to strengthen its core capacities for responding effectively to both known and unknown public health threats in the future. That said, on the basis of the findings of the JEE 2023 mission, some key areas that still require attention were identified.

Key areas that need improvement

- Build on existing legal mapping, by conducting subsequent legal analysis (legal mapping and legal assessment) across sectors. This includes greater emphasis on legal assessment, including simulation exercises, as part of wider emergency preparedness planning.
- Develop a resource mobilization strategy for implementation of a National Action Plan for Health Security (NAPHS).
- Develop an advocacy strategy for the implementation of the IHR 2005 and a systematic sensitization of the general public and decision-makers.
- Build leadership, communication, monitoring and technical skills of AMR points of care through training and mentorship.
- Develop memorandums of understanding (MOUs) to formalize coordination of priority and endemic zoonoses surveillance activities between human, animal and wildlife sectors and to integrate a fully functioning Zoonoses technical working group (TWG) into the One Health platform at the national level, as outlined in the One Health Strategic Plan.
- Provide targeted national laboratories for food safety with the required equipment, reagents and standard operating procedures (SOPs) for foodborne diseases or food contamination (chemical and microbiological) detection according to existing reference tests. Train the staff and evaluate their capacities during simulation exercises.
- Develop and roll out a national training curriculum for pre-service and in-service training, including supportive supervision, in biosafety and biosecurity.
- Implement monitoring and evaluation mechanisms for the human health laboratory tier system, support the development of a tiered laboratory system in the animal health sector, and formalize existing collaboration with academic institutions.
- Increase human resource capacity by 20% at all levels in the animal health sector, ensuring the availability of personnel in wildlife, and for improved animal production practices, through active recruitment, training and deployment.
- Develop MoUs or agreements detailing the roles, responsibilities and information-sharing of the public health and security authorities during a public health event, and update the 2019 National Emergency Response Plan (NERP) accordingly.
- Develop and implement a comprehensive national strategic plan for health-care acquired infections (HCAI) surveillance (including pathogens that are antimicrobial-resistant and/or prone to outbreaks).
- Develop an all-hazards plan for points of entry (PoEs) with a multisectoral approach inclusive of the NERP and the national surveillance system.
- Develop an MoU on chemical events surveillance and response, outlining major stakeholders, their roles and responsibilities, coordination and accountability mechanisms.
- Develop detailed SOPs for key radiation emergency response functions, building on the responsibilities and concepts of operation outlined in existing policies, plans and strategies.

Sierra Leone scores and priority actions

The table below is the summary of the final scores for each technical area (details and priority actions are shown in the respective report chapters), as agreed by the national and external JEE teams. The principles of the scoring system are described in the JEE tool, available from:

https://www.who.int/emergencies/operations/international-health-regulations/joint-external-evaluations

Briefly, the scoring is a 5-step Likert scale in which a score of 1 designates no capacity, and incremental obligatory criteria for each indicator must be fulfilled to reach the next level. A score of 5 designates that the country has the required capacity and is able to sustain it. Indicators are proxies and are chosen with the aim of representing a probable wider capability than the actual measured factor.

For ease of overview, a "traffic light" colouring system is used, whereby scores of 1 are shown as red; scores of 2 and 3 are yellow; and 4 and 5 are green.

Scores and priority actions

Technical areas	Indicator no.	Indicator	Score	Priority actions
PREVENT				
P1. Legal instruments	**P1.1**	Legal instruments	**3**	• Build on existing legal mapping, by conducting subsequent legal analysis (legal mapping and legal assessment) across sectors. This includes greater emphasis on a legal assessment including simulation exercises as part of wider emergency preparedness planning. This can harmonize and clarify roles and responsibilities to avoid overlapping functions and allow for effective implementation. • Develop or revise necessary legal instruments for the effective implementation of forthcoming legislation (Public Health Bill of 2022, Animal Health Bill, Animal Welfare Bill) as well as ensure subsequent legal instruments for the IHR NFP, health emergency management, biosafety and biosecurity and food safety at national and intermediary levels. • Develop a mechanism for relevant MDAs (including the Ministry of Health and New Public Health Agency) to have access to legal advisors to guide the IHR implementation and the management of health emergencies. • Conduct an orientation with relevant stakeholders (policymakers, public health officials, law enforcement officers, etc.) on the recent changes in legal instruments in all sectors. • Develop an action plan to address identified high priority gender gaps in existing MOHS assessment on gender mainstreaming gaps, incorporate it into annual workplans and complement existing MOHS assessment to cover additional IHR capacities.
	P1.2	Gender equity and equality in health emergencies	**2**	

Technical areas	Indicator no.	Indicator	Score	Priority actions
P2. Financing	P2.1	Financing for IHR implementation	2	• Develop a resource mobilization strategy for NAPHS implementation. • Engage parliamentarians, local administrations and other stakeholders including the private sector to increase the domestic funding for IHR implementation through taxation on commodities like fuel/ cigarettes/alcohol/ air time etc. • Establish a mechanism for easy and rapid disbursement of funds for all relevant ministries or sectors for the execution of activities to strengthen and sustain IHR capacities at all levels of the system including the management of public health emergencies. • Establish a monitoring and accountability framework to track the funds allocated for IHR implementation.
	P2.2	Financing for public health emergency response	2	
P3. IHR coordination, National IHR Focal Point functions and advocacy	P3.1	National IHR Focal Point functions	3	• Develop a common data platform to consolidate surveillance information with relevant sectors. • Disseminate and implement multisectoral coordination mechanisms at the intermediate level. • Develop an advocacy strategy for the implementation of IHR and a systematic sensitization of the general public alongside decision-makers. • Develop a business continuity plan to obtain dedicated emergency preparedness and response funding.
	P3.2	Multisectoral coordination mechanisms	3	
	P3.3	Strategic planning for IHR, preparedness or health security	3	

Technical areas	Indicator no.	Indicator	Score	Priority actions
P4. Anti-microbial resistance (AMR)	P4.1	Multisectoral coordination on AMR	4	• One Health TWG should clarify roles and responsibilities, funding sources, and monitoring mechanisms/tools included in the strategic and operational plans. Actual implementation should be monitored by an officially designated AMR point of contact (PoC) on a quarterly basis with quarterly reports submitted to MDAs' leadership –including the status and next steps to implement priority activities. • Build leadership, communication, monitoring, and technical skills of AMR PoCs –through training and mentorship. • In coordination with National-Laboratories component (D.1): a) provide enhanced training and mentorship on AMR diagnosis and surveillance; b) ensure laboratory equipment is operational and properly maintained; c) ensure laboratory supplies and reagents are available and within min/max predefined stock levels; d) increase demand of bacteriology services; and e) implement quality assurance/improvement approaches. • Implement stewardship policies and programmes. Stewardship should include as a minimum: regular measurements of antimicrobial use, IPC procedures implementation, monitoring the availability of bacteriology & antibiogram services, updated treatment guidelines, feedback systems to encourage appropriate use of antimicrobials, and enforcement of antimicrobials regulations. • In coordination with National-Laboratories (D.1) and Surveillance (D.2) components: a) facilitate effective use of laboratory networks for bacteriology services, including clinical and public health laboratories; b) implement an integrated and simplified specimen transportation strategy and a simplified system to ensure results timely reach national/international reporting systems (e.g., GLASS) and clinical services for care management. • In coordination with Financing (P.2) and Human resources (D.3) components, identify actions to facilitate laboratory, surveillance, and MDAs' supervisory teams are properly staffed and have access to the operational budget to implement AMR-related activities. • Work with technical partners and the academia to define multidrug resistant organisms (MDRO), develop/implement a national guidance for MDRO containment, and support laboratories' capacities to identify and report MDRO. • Review existing legislation to update national capacities to facilitate the optimal access and use of quality antimicrobials. • Regulators, including the Pharmacy Board, should collaborate with law enforcement to implement existing legislation to improve the access and use of quality antimicrobials for human and animal use and antimicrobial pesticides.
	P4.2	Surveillance of AMR	1	
	P4.3	Prevention of MDRO	1	
	P4.4	Optimal use of antimicrobial medicines in human health	2	
	P4.5	Optimal use of antimicrobial medicines in animal health and agriculture	2	

Technical areas	Indicator no.	Indicator	Score	Priority actions
P5. Zoonotic disease	P5.1	Surveillance of zoonotic diseases	2	• Develop MOU to formalise coordination of priority and endemic zoonoses surveillance activities between human, animal and wildlife sectors and to integrate a fully functioning zoonoses TWG into the One Health platform at the national level as outlined in the One Health Strategic Plan. • Develop a strategy, guidelines, and SOPs for an integrated surveillance system for wildlife disease including priority zoonoses with the active involvement of the environmental sector. • Develop a national plan, guidelines and SOPs for good practices in animal breeding and production of animal products along the livestock value chain based on international standards, ensuring these are published and disseminated with a training programme. • Increase human resource capacity by 20% at all levels in the animal health sector, ensuring the availability of personnel in wildlife and for improved animal production practices through active recruitment, training and deployment.
	P5.2	Response to zoonotic diseases	3	
	P5.3	Sanitary animal production practices	2	
P6. Food safety	P6.1	Surveillance of foodborne diseases and contamination	2	• Ensure regular meetings of the Food Safety Technical Working Group and put in place a formal mechanism for information sharing among all stakeholders in the country to facilitate the implementation of the food safety programme. • Disseminate guidelines and SOPs and train the different stakeholders for surveillance, response, emergency management, rapid risk assessment and diagnostic laboratory testing for food safety. • Provide targeted national laboratories for food safety with required equipment, reagents and SOPs for foodborne diseases or food contamination (chemical and microbiological) detection according to existing reference tests. Train the staff and evaluate their capacities during simulation exercises.
	P6.2	Response and management of food safety emergencies	2	

Technical areas	Indicator no.	Indicator	Score	Priority actions
P7. Biosafety and biosecurity	**P7.1**	Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	**2**	• Further develop and implement the national biosafety and biosecurity regulatory framework and National Biosafety and Biosecurity Policy and Guidelines, under the strategic direction of the national biosafety and biosecurity council, with the following key activities: • Endorse National Biosafety and Biosecurity Policy and Guidelines and develop necessary legal instruments to support a comprehensive and multisectoral biosafety and biosecurity system and oversight programme. • Consolidate high-consequence agents into a minimum number of facilities and support active monitoring and maintaining of up-to-date records and inventory of pathogens. • Develop and implement biosafety and biosecurity risk control measures, incident reporting systems, and procedures for safe handling, decontamination and disposal of infectious waste. • Develop and roll out national training curriculum for pre- and in-service training, including supportive supervision, in biosafety and biosecurity. • Advocate for a whole of government approach to biosafety and biosecurity and increased resources to sustain the system and its oversight.
	P7.2	Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture)	**2**	
P8. Immunization	**P8.1**	Vaccine coverage (measles) as part of national programme	**3**	• Conduct serosurveys to support Measles and Rubella elimination in Sierra Leone. • Develop and implement a comprehensive National Immunization Strategy using a One Health Approach. • Roll out the electronic Stock Management Tool (eSMT) to all health facilities for effective monitoring of vaccine availability at all levels. • Procure and distribute equipment for cold chain maintenance to all health facilities as appropriate. • Increase the government budget allocation for the procurement of vaccines to avoid stock out.
	P8.2	National vaccine access and delivery	**2**	
	P8.3	Mass vaccination for epidemics of VPDs	**3**	

Technical areas	Indicator no.	Indicator	Score	Priority actions
DETECT				
D1. National laboratory systems laboratory	D1.1	Specimen referral and transport system	2	• Implement an integrated and reliable/efficient specimen referral system for national specimen referral across units in both human and animal laboratory sectors. • Expand implementation of the quality system across all human health laboratories and ensure rollout in the animal laboratories including maintaining SLMTA training. • Establish a laboratory licensing body under the Allied Health Bill and enforce laboratory licensure. • Expand the diagnostic capacity to cover all priority diseases across both human and animal diseases, ensuring in-country testing capacity as much as possible to minimize delays encountered in international specimen referral. • Implement monitoring and evaluation mechanisms for the human health laboratory tier system, support the development of a tiered laboratory system in the animal health sector, and formalise existing collaborations with academic institutions. • Ensure sustained investment in human resources across the laboratory system, including recruitment and retention of, and support to, animal health laboratory personnel.
	D1.2	Laboratory quality system	1	
	D1.3	Laboratory testing capacity modalities	2	
	D1.4	Effective national diagnostic network	1	
D2. Surveillance	D2.1	Early warning surveillance function	3	• Extend the roll out of the early warning system to all private health facilities through training, provision of tools, supportive supervision, and performance monitoring, among others. • Integrate the indicator-based and the event-based surveillance systems and roll out community based surveillance in all areas as appropriate using the One Health approach. • Test, review, evaluate and update the event verification and investigation systems on a regular basis. • Build capacity for advanced data analytics at national level, and continue to strengthen capacity for surveillance data analysis at district level through training/refresher training, provision of tools and logistics and, supportive supervision • Strengthen data sharing between human and animal health sectors through the establishment of an integrated electronic system.
	D2.2	Event verification and investigation	4	
	D2.3	Analysis and information sharing	3	

Technical areas	Indicator no.	Indicator	Score	Priority actions
D3. Human resources	D3.1	Multisectoral workforce strategy	2	• Develop a consolidated multisectoral workforce strategy, ensuring it's routinely monitored, updated or implemented consistently. • Increase the capacity of human resource from the animal health sector to achieve IHR at all levels and ensure the availability of personnel through active recruitment and training. • Conduct a gap analysis of required surge workforce required in all sectors for emergencies and update the national multisectoral workforce surge strategic plan.
	D3.2	Human resources for implementation of IHR	2	
	D3.3	Workforce training	3	
	D3.4	Workforce surge during a public health event	2	
RESPOND				
R1. Health emergency management	R1.1	Emergency risk assessment and readiness	3	• Develop intermediate all hazards risk profiles based on a multihazard risk assessment with priorities identified. • Resource and implement a readiness and/or contingency plan at both national and subnational levels. • Develop intermediate-level plans that outline a system for the pre-deployment of surge personnel and teams, including sending and receiving personnel and teams during PHE • Review and update MCM plan and ESC playbook based on the identified risks/hazards. • Develop a Health Emergency Action Plan or Framework for directing research for emergency preparedness and response
	R1.2	Public health emergency operations centre (PHEOC)	4	
	R1.3	Management of health emergency response	4	
	R1.4	Activation and coordination of health personnel in a public health emergency	2	
	R1.5	Emergency logistic and supply chain management	2	
	R1.6	Research, development and innovation	1	
R2. Linking public health and security authorities	R2.1	Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological, chemical or radiological event	2	• Develop MOUs or agreements detailing the roles and responsibilities and information sharing of the public health and security authorities during a public health event, and update the 2019 NERP accordingly. • Develop a regular cadence for meetings in all sectors and integrate contact points for the BWC, CWC, IAEA, INTERPOL, WOAH, UNSC Resolution 1540, and the UNSG's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons. • Systematize joint risk assessments and planning between public health and security authorities, building on existing joint activities at points of entry • Develop multisectoral SOPs or agreements to support joint epidemiological and criminal investigations to identify and respond to suspected biological, chemical and radiological events of deliberate origin. • Validate developed MOUs, SOPs, and protocols through simulation exercises, and train public health and securities agencies.

Technical areas	Indicator no.	Indicator	Score	Priority actions
R3. Health services provision	R3.1	Case management	1	• Conduct a comprehensive mapping of available required resources for case management for the emergency priority conditions, according to IHR (2005) • Expand the scope of the national clinical case management guidelines to include all hazards according to IHR (2005) • Develop, test and implement a comprehensive case management referral protocol usable at every level of care • Develop and implement a package of EHS and plan/guidelines for continuity of essential health services during emergencies and a mechanism for monitoring service continuity during emergencies with consideration of marginalized and vulnerable populations • Establish a national facility/provider accreditation system or other national external evaluation systems, to ensure quality services and public trust for continued service utilization during emergencies
	R3.2	Utilization of health services	3	
	R3.3	Continuity of essential health services (EHS)	2	
R4. Infection prevention and control (IPC)	R4.1	IPC programmes	3	• Validate the updated National Infection Prevention and Control Action Plan, disseminate the National Infection Prevention and Control (IPC) Guidelines, and publish, disseminate, and train staff to implement WHO minimum requirements for IPC, while ensuring monitoring systems are in place to detect the % of health facilities meeting the WHO minimum requirements (aiming for more than 75%). • Develop and implement a comprehensive national strategic plan for HCAIs surveillance (including pathogens that are antimicrobial resistant and/or prone to outbreaks). • Conduct HCAI point of prevalence surveys in selected health facilities using the new WHO and ECDC protocol. • Implement the dissemination and the use of WASH standard quality guidelines to ensure continued access to safe water in all health facilities in collaboration with WASH Programme and other related sectors. • Develop and implement the standards for reduction of overcrowding and optimization of staffing levels in health care facilities, according to WHO minimum requirements.
	R4.2	HCAI surveillance	1	
	R4.3	Safe environment in health facilities	1	

Technical areas	Indicator no.	Indicator	Score	Priority actions
R5. Risk communication and community engagement (RCCE)	**R5.1**	RCCE systems for emergencies	**3**	• Train District Medical Officer, District Agricultural Officers, and other senior district officers on how to use the infodemic management dashboard. • Integrate Community Lead Action(CLA) model into the Community Health Workers and Community Animal Health Workers recruitment training model and roll out rumour reporting and responding training for chiefdom level Risk Communication and Community Engagement staff. • Train Community Health Workers, Community Animal Health Workers, Front line Extension Workers, Block Extension Workers, Forest Rangers and Forest Guides on Community Lead Action(CLA) model as well as the different RCCE domains at all levels. • Review and have signed the MOU on public health reporting between the Independent Media Commission (IMC), the Ministry of Agriculture and Food Security, and the Ministry of Environment/ Environment Protection Agency. • Hold annual RCCE resource mobilization/ advocacy meetings.
	R5.2	Risk communication	**4**	
	R5.3	Community engagement	**4**	
IHR RELATED HAZARDS AND POINTS OF ENTRY AND BORDER HEALTH				
PoE: Points of entry and border health	**PoE.1**	Core capacity requirements at all times for PoEs (airports, ports and ground crossings)	**2**	• Complete the implementation of all times core capacity requirements at designated PoEs (airports, ports, and ground crossings), notably sanitary conveyance inspection, environmental hygiene, vector control management and arrangements for human and animal isolation/quarantine facilities where required. • Develop an all-hazards plan for PoEs with a multisectoral approach and integrate into the National Emergency Response plan and into the National surveillance system. • Integrate more non-designated PoEs into the national surveillance system in line to the strategic risk assessment at the Point of entry results. • Conduct Field testing of the public health emergency contingency plans (including Simulation exercises) • Develop and implement a national multisectoral process with mechanism to determine the adoption of international travel related measures on a risk-based manner
	PoE.2	Public health response at PoEs	**3**	
	PoE.3	Risk-based approach to international travel-related measures	**1**	

Technical areas	Indicator no.	Indicator	Score	Priority actions
CE. Chemical events	CE.1	Mechanisms established and functioning for detecting and responding to chemical events or emergencies	2	• Develop a MOU on Chemical Events surveillance and response, outlining major stakeholders, their roles and responsibilities, coordination, and accountability mechanisms. • Propose a sustainable funding strategy to be able to:
	CE.2	Enabling environment in place for management of chemical event	1	• Improve capacity (trained personnel, laboratory, reagents) to detect poisons and toxins and strengthen laboratory diagnostic capacity to confirm chemical events. • Build the capacity for technical staff at national and district levels along the chemical event chain. (Identify involved responders (mentioned in first bullet point) at local, district, and national levels: these could be but not limited to, paramedics, fire fighters, civil defense responders, but also emergency room medical personnel, and high level crisis managers and coordinators. For all identified responders, design training curricula adapted to each role's competency standards, design a training strategy, and implement the training. Equipment needed for each role should be also identified, purchased and involved in the capacity building program. Joint in person exercises and Simex would ensure the quality of the capacity building program. • Strengthen awareness raising in risk communication for chemical events at national and district levels. (design risk communication messages for different target audiences, such general public, public health stakeholders, and groups mentioned in point b) above. An awareness campaign strategy should be designed and implemented for prevention around high risk areas, and for response after the event occurs) • Develop and or finalize the development of: • National chemicals emergency, preparedness, and response plan. • Strategic and public health plan to strengthen the assessment and management of chemical incidents/emergencies.

Technical areas	Indicator no.	Indicator	Score	Priority actions
RE. Radiation emergencies	**RE.1**	Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	**2**	• Train first responders and technical personnel expected to engage in radiation emergency response activities to IAEA and WHO accepted competencies through targeted training and exercise opportunities. • Identify a dedicated budget to support preparedness and response to radiation emergencies. • Promulgate drafts of current policies, plans, and procedures related to radiation emergencies, test them through discussion and operations-based radiation response exercises, and implement a continuous improvement program for these policies, plans, and procedures. • Develop detailed Standard Operating Procedures for key radiation emergency response functions, building on the responsibilities and concepts of operation outlined in existing policies, plans, and strategies. • Expand the capacity of radiation monitoring mechanisms in the food and consumer products sector through additional staffing and equipment.
	RE.2	Enabling environment in place for management of radiological and nuclear emergencies	**2**	

Scores: 1=No capacity; 2=Limited capacity; 3=Developed capacity; 4=Demonstrated capacity; 5=Sustainable capacity.

PREVENT

P1. Legal instruments

Introduction

he International Health Regulations (IHR) (2005) provide obligations and rights for States Parties. In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even if new or revised legislation may not be specifically required, States may still choose to revise some regulations or other instruments in order to facilitate IHR implementation and maintenance. Implementing legislation could serve to institutionalize and strengthen the role of the IHR (2005) and operations within the State Party. It can also facilitate coordination among the different entities involved in implementation of the regulations. Detailed guidance on IHR (2005) implementation in national legislation is available. In addition, policies that identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

Target

Adequate legal instruments for States Parties to support and enable the implementation of all their obligations and rights created by the IHR. The development of new or modified legal instruments in some States Parties for the implementation of the Regulations. Where new or revised legal instruments may not be specifically required under a State Party's legal system, the State may revise some laws, regulations or other legal instruments in order to facilitate their implementation in a more efficient, effective or beneficial manner.

Sierra Leone level of capabilities

Sierra Leone has instruments in place to support the country's obligations and implementation of core capacities under the IHR, including a range of legal instruments that contain various mechanisms for multisectoral coordination to address health risks across national, intermediate and local levels of government.

Building on lessons learned from the Ebola Virus Disease (EVD) outbreak in West Africa as well as from COVID-19, the Government of Sierra Leone has placed significant emphasis on revising and/or developing new legal instruments based on identified gaps. Through extensive multisectoral engagement over the past five years, the Public Health Bill, 2022 was passed by Parliament and is currently awaiting the assent of the President. Development of the Public Health Bill, 2022 represents significant progress for Sierra Leone and its efforts to identify gaps and determine potential areas for revision and or development of legal instruments. Sierra Leone also has additional legal instruments (including the Animal Health Bill and the Animal Welfare Bill that are before Parliament).

However, multiple bills and subsequent legal instruments supporting IHR implementation in various technical areas and sectors still remain in draft and will require an extensive process in order to be finalized – especially where additional harmonization is necessary to ensure clarity on roles and responsibilities and to avoid overlapping functions. To facilitate the effective implementation of forthcoming legislation, subsequent legal instruments will be necessary (e.g. National IHR Focal Points (IHR NFP), health emergency management, biosafety and biosecurity, and food safety).

A legal research unit exists at the Law Reform Commission in Sierra Leone to review current legal instruments and remedy conflict of laws, but designated legal officers are necessary within the health sector to serve as focal points to support and advise on IHR implementation and the management of health emergencies.

Sierra Leone has prioritized legislative interventions to support gender equity. The Gender Equality and Women's Empowerment Act was signed into law in January 2023. The law includes a 30% quota for women's participation in government both for appointed positions (including cabinet and ministers) and elected positions. Sierra Leone has also created a gender desk (including in the health sector) to support gender mainstreaming. However, resources are limited to expand the MOHS assessment on gender mainstreaming gaps. Moreover, Sierra Leone has shown significant progress in developing risk communication strategies that are tailored to support gender-specific messaging and communication.

Indicators and scores

P1.1 Legal instruments – Score 3

Sierra Leone has conducted legal mapping of relevant legal instruments in the health sector and has identified and reviewed gaps in order to revise legal instruments to support IHR implementation. Legal assessment capabilities are present at the national level to remedy conflict of laws and to complete comparative studies.

Strengths

- A legal research unit is present at the Law Reform Commission at the national level to review existing legal instruments, remedy conflicts of legal instruments and complete comparative studies.
- Legal mapping has been carried out to map legal instruments across the health sector at the national and intermediate public health response levels as part of ongoing efforts to review and revise legal instruments across the health sector.
- Through extensive multisectoral engagement based on the identification of gaps from legal mapping and stakeholder engagement, the Public Health Bill, 2022 has been developed and passed by Parliament. Once ratified by the president, it will support the prevention, detection and response to public health emergencies.
- A revised Animal Health Bill and Animal Welfare Bill have been developed and are presently before Parliament.
- A range of legal instruments is in place that contain various mechanisms for multisectoral coordination to address health risks across national, intermediate and local levels of government.

Challenges

- There is a limited centralized database for collecting and reviewing various legal instruments across the health sector, including mechanisms for capturing the status of bills currently in process.
- Limited opportunities are available to sensitize relevant stakeholders within the health sector and across all sectors when changes are made to relevant legal instruments.
- No designated legal officers within the health sector can serve as focal points to support and advise on IHR implementation and the management of health emergencies.
- Multiple legal instruments exist to support emergency response, notification and information-sharing, as well as multisectoral coordination. However, harmonization is necessary to ensure clarity on roles and responsibilities, to avoid overlapping functions and to allow for effective implementation.
- There are limited resources to support legal analysis at the intermediate or local levels.
- Multiple bills and subsequent legal instruments that support IHR implementation in various technical areas and sectors still remain in draft status and will require an extensive stakeholder engagement process to be finalized.

P1.2 Gender equity and equality in health emergencies – Score 2

Sierra Leone can demonstrate evidence of a gender assessment in at least one IHR capacity.

Strengths

- The Gender Equality and Women's Empowerment Act was signed into law in January 2023. The law includes improvements in women's access to finance, employment opportunities, equal pay, maternity leave and a 30% quota for women's participation in government both for appointed positions, including cabinet and ministers, and elected positions.
- A gender desk has been established across government offices (including the health sector) to support gender mainstreaming and to ensure the efficient allocation of resources.
- An assessment of gender mainstreaming gaps within the MOHS was conducted, with a specific focus on gender gaps in participation in the FETP and the Field Epidemiology and Laboratory Training Programme (FELTP).
- The electronic case-based disease surveillance system (e-CBDS) collects disaggregated data on gender.
- Risk communication strategies are tailored to support gender-specific messaging and communication.

Challenges

- *R*esources to expand and complement the MOHS assessment on gender mainstreaming are limited.
- Additional activities are needed to support the process of translating evidence-based gaps identified in the MOHS assessment into an action plan.

Recommendations for priority actions

- Build on existing legal mapping by conducting subsequent legal analysis (legal mapping and legal assessment) across sectors. This includes greater emphasis on legal assessment, including simulation exercises as part of wider emergency preparedness planning. This can harmonize and clarify roles and responsibilities to avoid overlapping functions and allow for effective implementation.
- Develop or revise necessary legal instruments for the effective implementation at national and intermediary levels of forthcoming legislation (Public Health Bill of 2022, Animal Health Bill, Animal Welfare Bill) as well as to ensure subsequent legal instruments for the IHR NFP, health emergency management, biosafety and biosecurity, and food safety.
- Develop a mechanism for relevant ministries, departments and agencies (MDAs), including the Ministry of Health and New Public Health Agency, to have access to legal advisors to guide IHR implementation and the management of health emergencies.
- Conduct an orientation with relevant stakeholders (policy-makers, public health officials, law enforcement officers etc.) on the recent changes to legal instruments in all sectors.
- Develop an action plan to address identified high-priority gender gaps in existing MOHS assessments on gender mainstreaming gaps, incorporate the plan into annual workplans and complement existing MOHS assessment to cover additional IHR capacities.

P2. Financing

Introduction

The implementation of the IHR (2005), including development of the core capacities, requires adequate financing. States Parties should ensure sufficient allocation of funds for IHR implementation.

Target

States Parties ensure provision of adequate funding for IHR implementation through the national budget or other mechanisms. The country has access to financial resources for the routine implementation of IHR capacities and financial resources are available that can be accessed on time and distributed for readiness and response to public health emergencies.

Sierra Leone level of capabilities

The 2014–2016 EVD outbreak provided an opportunity to attract many external partners to Sierra Leone. These donors constitute the main source of funding that has supported the post-Ebola recovery efforts to strengthen the country's IHR capacities. Sierra Leone conducted the first round of the IHR Joint External Evaluation (JEE) in November 2016 followed by the development of a National Action Plan for Health Security (NAPHS) for the period 2018–2022. The NAPHS was fully costed but not adequately funded as expected. In 2022, the country allocated 11% of its gross domestic product (GDP) to health, which is below the 15% recommended by the Abuja Declaration. Sierra Leone currently dedicates 2.4% of its GDP to the agricultural sector while the Malabo Declaration called for an increase to 10%. The government allocation of funds to MDAs is based on a ceiling set by the Ministry of Finance which prepares the annual domestic budget and submits it to parliament for approval. Each MDA defends its proposed budget before an independent Budget Hearing Committee which is set up by the parliament. The country has no funds set aside for public health emergency preparedness and response. The routine allocation of funds to implement IHR capacities is subject to heavy bureaucracy.

Indicators and scores

P2.1 Financing resources for IHR implementation – Score 2

Financial planning and allocation of resources to support IHR implementation are limited to some concerned MDAs.

Strengths

- There are internal and external audit systems for evaluating financial performance.
- Budgets are aligned with government priorities for the implementation of the IHR.
- There is an independent Budget Hearing Committee in the parliament that validates the budgets submitted by MDAs after the hearing.
- The annual budget is flexible as there is a possibility to increase it in case of emergencies.
- Several stakeholders provide substantial funding for IHR implementation.

Challenges

- Inadequate allocation of funds for IHR implementation.
- No accountability of partners' financial contributions to IHR implementation.

P2.2 Financial resources for public health emergency response – Score 2

There is an existing mechanism for mobilizing emergency public financial resources but the process for activating funds disbursement is cumbersome and slow.

Strengths

- Funding for emergency response is coordinated through the national incident management system to avoid duplication.
- Some stakeholders provide catalytic funding for emergency response, especially in the early phase.
- Resources are mobilized and distributed to respective response pillars based on the needs and magnitude of the incident.
- The MOHS provides oversight through the internal audit unit to the allocation, execution and monitoring of financing in response to public health emergencies.
- There are procedures for the redistribution of funds at all levels during emergencies.
- A safety net system is established, and mechanisms are put in place to support vulnerable groups through food and cash distribution in collaboration with the anti-corruption commission to ensure that the intended beneficiaries receive the support.

Challenges

- There is no mechanism in place for the rapid distribution and execution of funds in case of emergencies.
- The cumbersome accountability procedures can delay distribution of funds during emergencies.

Recommendations for priority actions

- Develop a resource mobilization strategy for NAPHS implementation.
- Engage parliamentarians, local administrations and other stakeholders – including the private sector – to increase domestic funding for IHR implementation through taxation on commodities such as fuel/cigarettes/alcohol/air time etc.
- Establish a mechanism for easy and rapid disbursement of funds for all relevant ministries or sectors for the execution of activities to strengthen and sustain IHR capacities at all levels of the system, including the management of public health emergencies.
- Establish a monitoring and accountability framework to track the funds allocated for IHR implementation.

P3. IHR coordination, National IHR Focal Point functions and advocacy

Introduction

The effective implementation of the IHR requires multisectoral/multidisciplinary approaches through national partnerships for efficient alert and response systems. Coordination of nationwide resources, including the designation of a National IHR Focal Point (NFP), and adequate resources for IHR implementation and communication, is a key requisite for a functioning IHR mechanism at country level.

Target

Multisectoral/multidisciplinary approaches through national partnerships are required that allow efficient, alert and response systems for effective implementation of the IHR. Resources should be coordinated nationwide, including sustainable functioning of an NFP – a national centre for IHR communications which is a key obligation of the IHR – that is accessible at all times. States Parties will provide WHO with contact details of NFPs, continuously updating and annually confirming them. There is timely and accurate reporting of notifiable diseases, including the reporting of any events of potential public health significance, in accordance with WHO requirements and with consistent relay of information to the Food and Agriculture Organization of the United Nations (FAO) and to WOAH. Planning and capacity developments are undertaken and supported through advocacy measures to ensure high-level support for the implementation of the IHR.

Sierra Leone level of capabilities

Sierra Leone has an NFP centre consisting of a lead and designated focal points for the areas of Surveillance, Emergency Preparedness and Response, Points of Entry (PoE) and Public Health Laboratory. The Director of the Directorate of Health Security and Emergencies (DHSE) in the Ministry of Health and Sanitation (MOHS) is designated as NFP lead and is the authorizing official for communication on behalf of the Government of Sierra Leone.

The NFP is accessible at all times for communications with WHO IHR Contact Points. Information from WHO is communicated to the government through the IHR NFP lead. The One Health platform also facilitates the dissemination of information to, and consolidation of inputs from, all relevant sectors.

Functional mechanisms are in place to support multisectoral collaboration. The weekly multisectoral Emergency Preparedness Resilience and Response Group (EPRRG) meetings coordinate different pillars and sectors, including human and animal surveillance, laboratory and clinical services, etc. The EPRRG also serves as a platform to collaborate with all One Health sectors and other relevant ministries, departments and Agencies (MDAs) to accelerate targeted operational readiness actions for imminent threats. The development of contingency plans for high-ranking public health risks was conducted in a multisectoral forum.

There is an Emergency Preparedness and Response Unit in the Directorate of Health Security and Emergency that coordinates emergency preparedness and response under the One Health platform. There is also a Multihazards Public Health National Emergency Response Plan which was developed with the coordination of the MOHS Emergency Preparedness and Response unit.

Indicators and scores

P3.1 National IHR Focal Point functions – Score 3

Sierra Leone has an IHR NFP centre adequately equipped with human resources and administrative and technological capacities. The IHR NFP personnel are trained on IMS and are capable of communicating with WHO and other focal points when necessary.

Strengths

- Standard operating procedures (SOPs) are in place to provide clear roles and responsibilities for the National IHR Focal Point.
- The country has a duty officer system in place to ensure that the NFP is accessible at all times (24/7/365)[1] for urgent communication with WHO.
- The IHR NFP uses the One Health platform to communicate and collect information.
- The IHR NFP has the administrative, human and technological resources necessary to perform its communication, monitoring and evaluation functions.
- The IHR NFP has personnel trained on IMS and other functions that support the functions of the NFP

Challenges

- The multisectoral mechanism for coordination and integration across all sectors at the intermediate level is intended to ensure timely and systematic information exchange, including consolidation of surveillance information, but is very weak.
- The IHR NFP lacks express legal authorization to access relevant information sources and decision-makers in the other One Health ministries – the Ministry of Agriculture & Forestry (MAFS) and the Ministry of Environment and Climate Change (MOECC).
- There is limited integration of NFP functions within health-sector policies.

P3.2 Multisectoral coordination mechanisms– Score 3

Continuous multisectoral coordination is mainly based on the national-level weekly multisectoral EPRRG meeting where different sectors come together. The intermediate level does not have such a coordination mechanism. The One Health Strategic Plan also advocates multisectoral coordination.

Strengths

- The weekly multisectoral EPRRG meeting coordinates different pillars and sectors including human and animal surveillance, laboratory and clinical services.
- SOPs are in place for activation of the multisectoral IMS.
- A One Health Strategic Plan is in place and includes the One Health Secretariat, Technical Committee, Coordinating Committee and Technical Working Groups.

Challenges

- The multisectoral mechanism for coordination and integration across all sectors at the intermediate level – which aims to ensure timely and systematic information exchange including consolidation of surveillance information – is weak.

1 24/7/365 = 24 hours a day, 7 days a week, 365 days per year.

P3.3 Strategic planning for IHR, preparedness or health security – Score 3

Regular simulation exercises coordinated by the IHR NFP are carried out for preparedness. However, the country lacks a dedicated standby emergency contingency fund for utilization in emergencies. The system also lacks regular monitoring of the implementation of the National Action Plan for Health Security.

Strengths

- Capacity assessment and resource mapping has been done during the STAR and THIRA risk assessments.
- A multihazard emergency response plan is available.
- A contingency plan is in place for 10 high-ranking hazards.
- Regular simulation exercises are being carried out.

Challenges

- There is no written advocacy strategy for IHR implementation and decision-makers in government/ legislative bodies at the national level are sensitized to IHR/health security on an ad hoc basis.
- There is limited support for the NFP to create established mechanisms for continuous development and training for NFP staff.
- Emergency or contingency funds are not readily available to support the response and are dependent on funding from development partners

Recommendations for priority actions

- Develop a common data platform to consolidate surveillance information with relevant sectors.
- Disseminate and implement multisectoral coordination mechanisms at the intermediate level.
- Develop an advocacy strategy for the implementation of IHR and a systematic sensitization of the general public alongside decision-makers.
- Develop a business continuity plan to obtain dedicated emergency preparedness and response funding.

P4. Antimicrobial resistance (AMR)

Introduction

Bacteria and other microbes evolve in response to their environment and inevitably develop mechanisms to resist being killed by antimicrobial agents. For many decades, the problem was manageable as the growth of resistance was slow and the pharmaceutical industry continued to create new antibiotics.

Over the past decade, however, this problem has become a crisis. Antimicrobial resistance (AMR) is evolving at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.

Target

A functional system in place for the national response to combat AMR with a One Health approach, including:

- multisectoral work spanning human, animal, crops, food safety and environmental aspects – this comprises developing and implementing a national action plan to combat AMR, consistent with the Global Action Plan (GAP) on AMR;
- surveillance capacity for AMR and antimicrobial use at the national level following and using internationally agreed systems, such as the WHO Global Antimicrobial Resistance Surveillance System (GLASS) and the WOAH global database on use of antimicrobial agents in animals;
- prevention of AMR in health-care facilities, food production and the community, through infection prevention and control measures;
- ensuring appropriate use of antimicrobials, including assuring the quality of available medicines, conservation of existing treatments and access to appropriate antimicrobials when needed, while reducing inappropriate use.

Sierra Leone level of capabilities

Sierra Leone has a multisectoral coordination mechanism and multisectoral costed plans to combat AMR using a One Health approach. The actual implementation of multisectoral plans is limited due to financial constraints and insufficient human resource capacities. Sierra Leone requires a stronger network of public health and clinical laboratories working together for the timely identification, report and response to AMR. Sierra Leone should increase the availability and use of updated policies and guidelines up to the service provision level, including updated treatment guidelines, antimicrobial stewardship programmes, SOPs for clinical care and infection prevention and control (IPC), and enforcement of medication/pesticides prescription and procurement policies. Environmental and animal health components for AMR prevention require additional human resources, increased laboratory capacities, updated guidelines and supervision strategies/tools. To increase uninterrupted access to quality medicines, Sierra Leone should reinforce supply chain management mechanisms. In addition, One Health TWG should increase engagement with the private and academic sectors beyond education services.

Indicators and scores

P4.1 Multisectoral coordination on AMR – Score 4

Sierra Leone has a multisectoral national AMR action plan that has been approved, as well as a costed operational plan. The level of implementation is limited due to financial constraints.

Strengths

- An AMR One Health technical working group (TWG) represents the MOHS, MOA, MoE/EPA, Ministry of Trade, and public health universities. The TWG has terms of reference (ToR) and meets quarterly to review progress on the implementation of the national AMR strategic plan.
- A national One Health AMR strategic plan (2018–2022) was approved in 2019, integrating human, animal and environmental health and taking account of GAP objectives. Food and agriculture are represented.
- AMR annual costed operational plan (2021–2022).

Challenges

- Limited funding, human resources and laboratory capacities for the effective implementation of the AMR plans.
- There are no formal mechanisms or tools to monitor the implementation of AMR plans.

P4.2 Surveillance of AMR – Score 1

Sierra Leone has very limited capacities to generate, collect or report antimicrobial resistance data.

Strengths

- AMR surveillance plans:
- national AMR surveillance strategy plan (2021–2025) and
- national AMR surveillance and AMU monitoring strategy for animal health (2022–2026).
- Sierra Leone is GLASS-certified (2021).
- Three laboratories with minimum capacities to detect, isolate and identify AMR pathogens (human health) – including ongoing renovations to expand their testing capacity. Five hospitals are planning to start implementing AMR diagnosis and surveillance.
- There is a national plan to start AMR surveillance in 200 poultry farms.

Challenges

- An animal-laboratory is equipped but requires human resources and supplies to become operational.
- The food laboratory requires equipment, human resources, logistics support and supplies to become operational. There is no environmental laboratory.
- No operational reference laboratories exist for human and animal health.
- No AMR reports are generated (including GLASS reports) as there are no AMR surveillance activities as yet.

P4.3 Prevention of multidrug resistant organism (MDRO) – Score 1

The country has not started to identify MDRO and there is no standard definition.

Strengths

- IPC prevention and control guidelines exist (2022) – including hand hygiene, contact detection, patient isolation and environmental cleaning strategies/tools.

Challenges

- There is no stand definition of MDRO in Sierra Leone.
- There are no MDRO surveillance or reporting activities.
- Laboratories are available for human and animal health but are not totally operational (animal health) or designated (human health) for MDRO confirmatory testing.

P4.4 Optimal use of antimicrobial medicines in human health – Score 2

Sierra Leone's health system has national policies and regulations promoting the proper use of antimicrobials. The country has begun to prepare for the implementation of stewardship programmes.

Strengths

- National policies and guidelines:
- national medicines policy,
- essential medicine list (2021), and
- pharmacy and drug Act (2001), including prescription rules and animal-health recommendations.
- A pharmacy board is available and regulates antimicrobials in Sierra Leone, including control of counterfeit/substandard products.
- There is at least one point prevalence survey on antibiotics use in humans.

Challenges

- Standard treatment guidelines (2006) are outdated and there is no systematic audit of adherence to the guidelines.
- There is no formal plan or policy for antimicrobial stewardship.
- There is no evidence of the proper use of prescriptions in pharmacies (especially in the private sector).
- There is no evidence of testing/control of counterfeit/substandard products.

P4.5 Optimal use of antimicrobial medicines in animal health and agriculture – Score 2

Current national legislation covers only some aspects of the quality and distribution of antimicrobial products for animal use.

Strengths

- The Pharmacy and Drug Act (2001) mandates the Pharmacy Board to monitor the quality of antimicrobial drugs for animals and collect data on imports, exports and sales of antimicrobial drugs.
- An AMR situation analysis exists for food and agriculture (2022).

Challenges

- There are no updated guidelines on the appropriate use of antibiotics in animals.
- There is no national selection mechanism for recommended antibiotics.
- There is no evidence of the actual need for a prescription to obtain antibiotics. Antimicrobial pesticides are not controlled.
- No antimicrobial stewardship programmes exists.

Recommendations for priority actions (top 3 priorities in bold text)

- The One Health TWG should clarify roles and responsibilities, funding sources, and monitoring mechanisms/tools included in the strategic and operational plans. Actual implementation should be monitored by an officially designated AMR Point of Contact (PoC) on a quarterly basis with quarterly reports submitted to the MDAs' leadership – including the status and next steps to implement priority activities.
- **Build leadership, communication, monitoring, and technical skills of AMR PoCs – through training and mentorship.**
- **In coordination with the** National Laboratories component (D.1)**: a) provide enhanced training and mentorship on AMR diagnosis and surveillance; b) ensure that laboratory equipment is operational and properly maintained; c) ensure that laboratory supplies and reagents are available and within minimum/maximum predefined stock levels; d) increase demand for bacteriology services; and e) implement quality assurance/ improvement approaches.**
- **Implement stewardship policies and programmes. Stewardship should include as a minimum: regular measurements of antimicrobial use, IPC procedures and implementation, monitoring of the availability of bacteriology and antibiogram services, updated treatment guidelines, feedback systems to encourage appropriate use of antimicrobials, and enforcement of regulations on antimicrobials.**
- In coordination with the National Laboratories (D.1) and Surveillance (D.2) components: a) facilitate effective use of laboratory networks for bacteriology services, including clinical and public health laboratories; b) implement an integrated and simplified specimen transportation strategy and a simplified system to ensure results timely reach national/ international reporting systems (e.g., GLASS) and clinical services for care management.
- In coordination with Financing (P.2) and Human Resources (D.3) components, identify actions to facilitate laboratory, surveillance and properly staffed MDA supervisory teams with access to the operational budget to implement AMR-related activities.
- Work with technical partners and academia to define multidrug-resistant organisms (MDRO), develop/implement national guidance for MDRO containment, and support laboratories' capacities to identify and report MDRO.
- Review existing legislation to update national capacities to facilitate optimal access and use of quality antimicrobials.
- Regulators, including the Pharmacy Board, should collaborate with law enforcement to implement existing legislation to improve access to and use of quality antimicrobials for human and animal use and antimicrobial pesticides.

P5. Zoonotic disease

Introduction

Zoonotic diseases are communicable diseases that can spread between animals and humans. These diseases are caused by viruses, bacteria, parasites and fungi carried by animals, insects or inanimate vectors that aid in disease transmission. Approximately 75% of recently emerging infectious diseases affecting humans are of animal origin; and approximately 60% of all human pathogens are zoonotic.

Target

Functional multisectoral, multidisciplinary mechanisms, policies, systems and practices are in place to minimize the transmission of zoonotic diseases from animals to human populations.

Sierra Leone level of capabilities

Key strengths:

- Multisectoral mechanisms and structures are outlined in the National Strategic Plan and One Health governance manual.
- National exchange of information occurs between the animal health, human health and environmental sectors during a weekly meeting.
- The country has a list of priority zoonoses that are agreed between the sectors and which include: anthrax; salmonellosis; plague; viral haemorrhagic fevers (Ebola Virus Disease, Marburg, and Lassa fever); rabies; and zoonotic influenza. Contingency plans have been developed for most of these.
- Training in the Joint Risk Assessment Operational Tool (JRA) has been conducted at national level for national training of trainers and JRAs have been undertaken for Lassa fever and rabies.
- Field epidemiologists from the animal, human health and the environment sectors are trained as members of the rapid response team (RRT) and are available to respond to threats and outbreaks at the animal-human interface.

Sierra Leone has an established One Health platform/structure in which a zoonoses TWG should play a crucial role in supporting the One Health secretariat which coordinates One Health activities and subgroups.

There is developed capacity in the human health sector but limited capacity in the animal health sector due to lack of personnel.

Indicators and scores

P5.1 Surveillance of zoonotic diseases – Score 2, (Human Health – Score 3, Animal Health – Score 2)

The JEE team and national counterparts reached a consensus score of 3 for human health and 2 for animal health.

This score reflects the well-established surveillance systems for human health through Integrated Disease Surveillance and Response (IDSR) and eIDSR which include both indicator-based and event-based surveillance of 26 priority diseases, including most of the priority zoonoses.

The Integrated Animal Disease Surveillance and Reporting system is the equivalent surveillance system in animals as outlined in the Animal Diseases Strategic Plan 2021–2025. Reports on 16 priority animal diseases are collected weekly, and this includes 8 zoonoses of which 6 are the priority zoonoses. The system is less developed than that for human health, and staff shortages in the animal sector delay its full implementation.

Strengths

- The list of priority zoonosis was developed using the One Health Zoonotic Disease Prioritization Process in a multisectoral forum convened in 2018. They are: anthrax; salmonellosis; plague; viral haemorrhagic fevers (Ebola Virus Disease, Marburg, and Lassa fever); rabies and zoonotic Influenza. *Needs reprioritization*
- Surveillance for priority zoonoses done through IDSR/eIDSR for human health and IADSR/EMA-I for animal health (except for salmonella).
- The exchange of information regarding potential and confirmed cases of zoonotic diseases takes place through animal and human health epidemiological updates to the weekly EPRRG which is attended by human, animal and environmental sectors.

Challenges

- No routine wildlife surveillance.
- Weakness within the animal surveillance sector due to lack of personnel at all levels.
- Links to the One Health secretariat could be strengthened.

P5.2 Response to zoonotic diseases – Score 3 (Human Health 3, Animal Health 3)

The score reflects the strengths below and the submission of reports demonstrating good multisectoral approaches when dealing with outbreaks of zoonotic disease and during table-top simulation exercises.

Strengths

- The National One Health Strategic Plan (2019–2023) outlines mechanisms for the coordination of, and response to, outbreaks of zoonotic diseases by the human, animal and wildlife sectors.
- Regular exchange of information for detection and response to zoonotic and potentially zoonotic incidents takes place during the weekly EPRRG meeting.
- There are national and district multidisciplinary RRTs which include animal health and environment specialists. These are available to respond to outbreaks of zoonotic diseases, and good examples of multidisciplinary outbreak response and management reports are presented.
- Contingency plans are available for most priority zoonoses.

Challenges

- Poor workforce policy and human resources in the animal sector at all levels.
- Poor laboratory network for the animal sector.
- Environmental and wildlife sectors need greater inclusion in any response.

P5.3 Sanitary animal production practices – Score 2

Although capacity for this new indicator requires major development, some activities are in place.

Strengths

- Legal instruments are in place. Revisions to the 1948 Animal Health Production Regulations were made in 2022.
- Meat inspection is undertaken in all districts.
- Animal inspections take place at the border for imported animals.
- There is an active breeding project at Njala University.

Challenges

- Meat inspection: postmortem examinations undertaken by public health staff in some districts.
- Lack of human resources at all levels.

Recommendations for priority actions

- Develop MOU to formalize coordination of priority and endemic zoonoses surveillance activities between human, animal and wildlife sectors and to integrate a fully functioning zoonoses TWG into the One Health platform at the national level as outlined in the One Health Strategic Plan.
- Develop a strategy, guidelines and SOPs for an integrated surveillance system for wildlife disease, including priority zoonoses, with the active involvement of the environmental sector.
- Develop a national plan, guidelines and SOPs for good practices in animal breeding and production of animal products along the livestock value chain based on international standards, ensuring these are published and disseminated with a training programme.
- Increase human resource capacity by 20% at all levels in the animal health sector, ensuring the availability of personnel in wildlife and for improved animal production practices through active recruitment, training and deployment.

P6. Food safety

Introduction

Food- and water-borne diarrhoeal diseases are leading causes of illness and death, particularly in less developed countries. The rapid globalization of food production and trade has increased the potential likelihood of international incidents involving contaminated food. The identification of the source of an outbreak and its containment is critical for control. Risk management capacity with regard to control throughout the food chain continuum must be developed. If epidemiological analysis identifies food as the source of an event, based on a risk assessment, suitable risk management options that ensure the prevention of human cases (or further cases) need to be put in place.

Target

A functional system is in place for surveillance and response capacity of States Parties for foodborne disease and food contamination risks or events, with effective communication and collaboration among the sectors responsible for food safety.

Sierra Leone level of capabilities

The Government of Sierra Leone has established policies and regulations (such as the Public Health Ordinance, 1960; Fisheries Management Act, 1994; Fishery Product Regulations, 2007) for food safety control and surveillance, and a response capacity for food- and water-borne disease risk or events. In this regard, provisions in the Public Health Ordinance, 1960, sections 109 and 110, give the MOHS Directorate of Environmental Health Services (DEHS) the authority to manage food safety control in the country. This responsibility is put in place by the head of the DEHS Food Safety Unit who coordinates and manages the safety of food supplies to service providers, consumers and export markets. At district level, the process is coordinated by the District Environmental Health Superintendent. Since 2021, the country has developed national Food Safety and Quality Control guidelines to address food safety emergencies using the One Health approach. In this regard, the Food Safety TWG was established as a national mechanism for multisectoral collaboration to ensure a rapid response to food safety emergencies and outbreaks of foodborne diseases. This TWG includes core group members with relevant expertise and experience in different areas related to food safety from the MOHS Food Safety programme, the ministries of Agriculture, Trade, Fisheries, Environment, Industries, Security, Customs and Immigration as well as local universities.

The country is part of the International Food Safety Authorities Network (INFOSAN) and the Director of Environmental Health and Sanitation is the INFOSAN Emergency Contact Point. At national and district levels, RRTs (including food safety personnel) have been formed and trained to respond to outbreaks and other public health events, including foodborne outbreaks. The surveillance for foodborne diseases is moreover integrated with IDSR (Integrated Disease Surveillance and Response) and is done together with other priority diseases in the country. Some aspect of monitoring is done through routine inspection of food, premises and/or establishments.

Indicators and scores

P6.1 Surveillance of foodborne diseases and contamination – Score 2

- Surveillance for foodborne diseases is integrated with IDSR and is done together with other priority diseases in the country.
- Key stakeholders and focal points for foodborne disease surveillance and food contamination monitoring have been identified.
- Routine inspection of food and food markets, premises or establishments is done on a regular basis.
- Priority foodborne diseases as well as priority hazards (chemical and microbiological) are identified.
- Case definitions for notifiable foodborne diseases have been developed.

Strengths

- A functional TWG for food safety is in place.
- Needs assessment regarding food safety has been achieved.
- Food assessors (16) across the districts of the country are trained in the use of food safety tools.

Challenges

- No risk profiling of food safety problems.
- Limited capacity of human resource to implement surveillance activities of foodborne diseases and contamination.
- Limited coordination and communication among stakeholders.
- Limited laboratory capacity to assign the etiology of foodborne diseases or origin of a contamination event.
- Limited funding to support regular TWG meetings and food safety activities.
- Lack of support from partners.

P6.2 Response and management of food safety emergencies – Score 2

- The country has developed Food Safety and Quality Control guidelines with a specific chapter on foodborne disease outbreak investigation and control.
- A checklist is available for investigating foodborne disease outbreaks.

Strengths

- A multisectoral coordination mechanism is in place through the food safety TWG meetings.
- A national contact person has been designated and a TOR on stakeholders' roles and responsibilities has been developed.
- A national regulation on the "Food and Feed Safety Act, 2017" is in place.
- Incidents of foodborne risks are investigated.
- Food safety personnel are included in RRTs.

Challenges

- Limited capacity to undertake rapid risk assessments.
- Limited capacity building for district staff and other food actors.
- Limited resources (human, logistical, financial) to address food safety emergencies or events.
- Need to strengthen awareness-raising at national and district levels.

Recommendations for priority actions

- Ensure that the Food Safety TWG meets regularly and put in place a formal mechanism for information-sharing among all stakeholders in the country to facilitate the implementation of the food safety programme.
- Disseminate guidelines and SOPs and train the different stakeholders for surveillance, response, emergency management, rapid risk assessment and diagnostic laboratory testing for food safety.
- Provide targeted national laboratories for food safety with required equipment, reagents and SOPs for foodborne diseases or food contamination (chemical and microbiological) detection according to existing reference tests. Train the staff and evaluate their capacities during simulation exercises.

P7. Biosafety and biosecurity

Introduction

It is vital to work with pathogens in the laboratory to ensure that the global community possesses a robust set of tools – such as drugs, diagnostics and vaccines – to counter the ever-evolving threat of infectious diseases.

Research with infectious agents is critical for the development and availability of public health and medical tools that are needed to detect, diagnose, recognize and respond to outbreaks of infectious diseases of both natural and deliberate origin. At the same time, the expansion of infrastructure and resources dedicated to work with infectious agents have raised concerns about the need to ensure proper biosafety and biosecurity to protect researchers and the community. Biosecurity is important in order to secure infectious agents against those who would deliberately misuse them to harm people, animals, plants or the environment.

Target

A whole-of-government multisectoral national biosafety and biosecurity system with high-consequence biological agents is identified, held, secured and monitored in a minimal number of facilities according to best practices. Biological risk management training and educational outreach are conducted to promote a shared culture of responsibility, reduce dual-use risks, mitigate biological proliferation and deliberate use threats, and ensure safe transfer of biological agents. Also, country-specific biosafety and biosecurity legislation, laboratory licensing and pathogen control measures are in place as appropriate.

Sierra Leone level of capabilities

There is evidence of significant progress in biosafety and biosecurity since the previous JEE in Sierra Leone in 2016. Prior to this, no elements of a comprehensive national biosafety and biosecurity system were in place. However, the 2014–2015 EVD outbreak catalysed investment in this area in both the human and animal health sectors, which display increasing strength, as demonstrated throughout the COVID-19 pandemic. Expertise in biosafety and biosecurity has advanced in the country, reducing reliance on partner agencies for technical assistance and enabling the development of national legislation, policies and implementation plans.

Biosafety and biosecurity in Sierra Leone are closely connected with the Directorate of Laboratory, Diagnostics and Blood Services (DLDBS), which is mandated to oversee laboratory matters in Sierra Leone. To address specific issues, a National Biosafety and Biosecurity Council was established. Significant achievements have included drafting the National Biosafety and Biosecurity Policy and Guidelines, establishing the biobank and integrating biosafety and biosecurity training into the national curriculum. The next key focus area will be the implementation of these components to continue to develop national biosafety and biosecurity in Sierra Leone.

However, significant challenges remain, and sustained financial investment is required to ensure that capabilities can be built and sustained over time. The finalization of key documents is a lengthy process which slows down the launch and implementation process. There are additional gaps in systematic pre- and post-service training, and there is a need to institutionalize biosafety and biosecurity across curricula.

Indicators and scores

P7.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities – Score 2

The JEE team and Member State counterparts reached a consensus score of 2 for this indicator. Some elements of biosafety and biosecurity are in place for both human and animal health, including the establishment of a biobank for high-consequence pathogens and development of a national framework. However, the country is yet to achieve a comprehensive system.

Strengths

- Substantial progress has been made in establishing and developing biosafety and biosecurity systems, including the development of national policy and guidelines.
- The country has established a national bio banking facility to store high-consequence pathogens, which will be launched in July 2023.
- Laboratories are starting to roll out and implement biosafety and biosecurity measures described in the draft National Biosafety and Biosecurity Policy and Guidelines.

Challenges

- The National Biosafety and Biosecurity Policy and Guidelines have been developed but are still awaiting signature and launch.
- There is no legislation or regulation in place to support a comprehensive biosafety and biosecurity system and a national oversight programme. While National Biosafety and Biosecurity Guidelines have been drafted, operationalization of components covered will require extensive resources and mechanisms for implementation, including legally embedded mechanisms to support effective implementation.
- Some sites still lack SOPs for biosafety and biosecurity, and some laboratories have weak security measures to prevent unauthorized access.
- The functional role of the governing council and technical working group needs to be strengthened.
- There is a lack of active monitoring and maintenance of records that are up to date and an inventory of pathogens within facilities that store or process high-consequence biological agents.
- There is insufficient funding in place to support activities in this area to promote sustainability.

P7.2 Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture) – Score 2

The JEE team and Member State counterparts reached a consensus of score 2 for this indicator. Training is carried out on an ad hoc basis, and the country is in the process of developing more sustainable, integrated academic programmes.

Strengths

- Training has been conducted at the MDA level with the involvement of key stakeholders such as the ONS.
- Human and animal health laboratories have dedicated biosafety and biosecurity officers.
- The animal health laboratory has developed a biosafety and biosecurity manual and biosafety SOPs.
- Sensitization of laboratory personnel has been done on biosafety and biosecurity issues but has been largely ad hoc.
- Some academic institutions have included biosafety and biosecurity in their curriculum.

Challenges

- Training, capacity-building and in-country supervision for biosafety and biosecurity need to be institutionalized in a systematic fashion.
- There is no national biosafety and biosecurity curriculum for training purposes.

Recommendations for priority actions

- Further develop and implement the national biosafety and biosecurity regulatory framework and National Biosafety and Biosecurity Policy and Guidelines, under the strategic direction of the national biosafety and biosecurity council, with the following key activities:
- Endorse National Biosafety and Biosecurity Policy and Guidelines and develop necessary legal instruments to support a comprehensive and multisectoral biosafety and biosecurity system and oversight programme.
- Consolidate high-consequence agents into a minimum number of facilities and support active monitoring and maintenance of up-to-date records and inventory of pathogens.
- Develop and implement biosafety and biosecurity risk control measures, incident reporting systems and procedures for safe handling, decontamination and disposal of infectious waste.
- Develop and roll out national training curriculum for pre- and in-service training, including supportive supervision, in biosafety and biosecurity.
- Advocate for a whole-of-government approach to biosafety and biosecurity and increased resources to sustain the system and its oversight.

P8. Immunization

Introduction

Immunizations are estimated to prevent more than 2 million deaths a year globally. Immunization is one of the most successful global health interventions and cost-effective ways to save lives and prevent disease. Measles immunization is emphasized because it is widely recognized as a proxy indicator for overall immunization against vaccine-preventable diseases (VPDs). Countries also identify and target immunization to populations at risk of other epidemic-prone VPDs of national importance (e.g. cholera, Japanese encephalitis, meningococcal disease, typhoid and yellow fever). Diseases that are transferable from cattle to humans, such as anthrax and rabies, are also included.

Target

A national vaccine delivery system – with nationwide reach, effective distribution, easy access for marginalized populations, adequate cold chain and ongoing quality control – that is able to respond to new disease threats.

Sierra Leone level of capabilities

Sierra Leone expanded routine immunization to over 1500 peripheral health units (PHUs) to increase the population's access to immunization services. The country also conducted nationwide capacity-building in immunization practice among health workers, with more than 1500 personnel trained in the Reach Every District–Reach Every Child approach. There are some ongoing efforts to improve the national and district cold chain capacity with the establishment of two cold chain stores in the newly created districts of Falaba and Karene, and the acquisition of two cold chain trucks. The human papilloma virus (HPV) vaccine was introduced in the routine immunization programme with the vaccination of 183 218 girls aged 10 years in and out of schools. Immunization is offered outside the scope of the WHO Global Vaccine Action Plan for diseases such as COVID-19, Hepatitis B, rabies and typhoid. Sierra Leone has one of the best performances for COVID-19 vaccination in WHO's African Region, recording 85.9% coverage for people who received at least one dose and 77.5% for those who are fully vaccinated among the target population in 2022. The national coverage for PENTA1 and PENTA3 is within the target (90%), standing at 91% and 90% respectively in 2022. Despite these attempts to increase capacity for immunization, Sierra Leone has experienced a stock-out of measles vaccines since December 2022 at national and district levels, inadequate cold chain maintenance and a lack of cold chain monitoring, as revealed during the field visit to the 34 Military Hospital of Freetown. As a result of these weaknesses, the country reported a measles outbreak which has affected several districts in the past months.

Indicators and scores

P8.1 Vaccine coverage (measles) as part of the national programme – Score 3

Administrative coverage for measles and rubella vaccine in 2022 was at 90% for the first dose and 73% for the second dose. The country has a comprehensive Vaccination Multiyear Plan for 2017–2021 which is being reviewed to develop a National Immunization Strategy.

Strengths

- A comprehensive multiyear plan was designed to guide immunization service delivery during 2017–2021.
- There is an ongoing process of developing a National Immunization Strategy and an EPI policy.
- Performance-based quarterly incentives are provided by Gavi for staff of the EPI programme staff and of health facilities to enhance outreach activities.
- Integration of routine vaccination with other programmes aims to enhance performance, including bednet distribution and administration of vitamin A and Albendazole.
- Integration of COVID-19 and other newly introduced vaccines (e.g. HPV) into the routine immunization programme ensures maximum utilization of available resources.
- Monitoring of vaccine coverage at all levels of service delivery through monthly and quarterly analysis and feedback to the health facilities.

Challenges

- The comprehensive Multiyear Vaccination Plan is outdated and needs to be updated.
- The comprehensive Multiyear Vaccination Plan does not include zoonotic diseases of national concern.
- There is no specific support (monetary and staffing) for data collection and reporting.
- There is a high rate of defaulters.
- Hard-to-reach communities often require mobile vaccination teams with demanding logistical requirements.
- The is inadequate transportation to ensure adequate coverage of communities in need.

P8.2 National vaccine access and delivery – Score 2

Efforts to enhance cold chain capacity for vaccine delivery are insufficient to cover the target population. Inadequate cold chain capacity combined with a stock-out of measles vaccines since December 2022 at central and district levels.

Strengths

- Cold chain infrastructure expanded to all districts, including the two new districts of Falaba and Karene.
- Use of an electronic stock management tool and WhatsApp platforms to monitor district-level vaccine consumption enables timely redistribution from districts of low consumption to districts of high consumption.
- The country has an Inventory Replacement Plan (IRP) and Cold Chain Equipment Operational Plan (CCEOP) which monitor the status of all cold chain inventory in the country and guide the replacement and distribution of CCEs.
- Vaccines and other supply needs are forecasted and requested by the government through the UNICEF supply division.
- Vaccine distribution matrices are developed at all levels to guide equitable distribution.
- Special teams are assigned to marginalized and vulnerable populations to improve access and coverage during outreach services and mass vaccination campaigns.
- Gavi is providing quarterly incentives for immunization service delivery at all levels and for last-mile distribution. During new vaccine introduction, allowances are given to team members.

Challenges

- Lack of Internet and other electronic logistics for monitoring vaccine utilization at PHU level.
- High costs of fuel for ensuring a permanent power supply to cold room stores at district and peripheral health unit levels.

P8.3 Mass vaccination for epidemics of VPDs – Score 3

A national guideline for the regulation and acquisition of new and experimental vaccines is available and in use. There is a draft national plan for mass vaccination response to outbreak of VPDs.

Strengths

- The Pharmacy Board of Sierra Leone (PBSL) is the regulatory body that fast-tracked the approval of the nOPV2 vaccine to respond to the cVDPV2 outbreak. The PBSL also granted the programme Emergency Use Authorization licences to enable roll-out the first batch of COVID-19 vaccines in Sierra Leone.
- An electronic system is used for data collection and monitoring of coverages.
- Monitoring of AEFIs uses an electronic platform to notify, investigate and manage cases.
- Cold chain assessment is done at all levels of immunization service delivery before the introduction of new vaccines using Fridgetag (device).
- Special measures are in place to ensure cold chain maintenance for health facilities without cold chain equipment.
- Global vaccine stock levels are always considered when planning for vaccine campaigns.

Challenges

- Factors that hinder the introduction of new and experimental vaccines include the public perception, limited financial and logistical support, misinformation and hesitancy.
- There is no specific support (monetary or staffing) for reporting of vaccine coverage and safety data.
- Logistical and operational costs for vaccination campaigns are high.

Recommendations for priority actions

- Conduct serosurveys to support measles and rubella elimination in Sierra Leone.
- Develop and implement a comprehensive National Immunization Strategy using a One Health approach.
- Roll out the electronic Stock Management Tool to all health facilities for effective monitoring of vaccine availability at all levels.
- Procure and distribute equipment for cold chain maintenance to all health facilities as appropriate.
- Increase the government budget allocation for the procurement of vaccines to avoid stock-out.

Detect

D1. National laboratory system

Introduction

Public health laboratories provide essential services, including disease and outbreak detection, emergency response, environmental monitoring and disease surveillance. State and local public health laboratories can serve as focal points for a national system through their core functions for human, veterinary and food safety – including disease prevention, control and surveillance; integrated data management; reference and specialized testing; laboratory oversight; emergency response; public health research; training and education; and partnerships and communication.

Target

Surveillance with a national laboratory system, including all relevant sectors – particularly human and animal health, and effective modern point-of-care and laboratory-based diagnostics.

Sierra Leone level of capabilities

The Sierra Leone National Laboratory Services (NLS) programme operates under the Directorate of Laboratory, Diagnostics and Blood Services, which provides overarching policy leadership and strategic directions for the country's general capacities. This service is at the centre of the country's response to disease outbreaks/epidemics, including viral hemorrhagic fevers and the COVID-19 pandemic.

The NLS comprises both human health and animal health laboratories. These services support routine human clinical diagnostic services, veterinary disease diagnostic services and disease surveillance. Although some ongoing research projects exist, confirmation of human infectious and zoonotic disease outbreaks is a key function of Sierra Leone's NLS.

There are two reference laboratories in the country for both human and animal health, the Central Public Health Reference Laboratory (CPHRL) and the Central Veterinary Laboratory (CVL) in Makeni. There are multiple additional laboratories across the country that are designated for specific public health functions such as performing antimicrobial susceptibility testing (AST) or testing for viral haemorrhagic fevers. The human laboratory services are divided into clinical and public health sectors, while in the animal sector, one laboratory is currently offering services – the CVL in Makeni which began testing in November 2019.

Indicators and scores

D1.1 Specimen referral and transport system – Score 2

Both animal and human health laboratories were scored at level 2 – **Referral and transport of specimens is organized for some priority diseases but may be restricted within districts or at the intermediate and national levels.**

Strengths

- The human laboratory sector has developed and is implementing an integrated specimen referral system with specimen transportation guidelines and a policy for the human laboratories that govern the transportation of specimens from the intermediate to national and international levels. This was validated during the field visits.
- During the field visits, the external team equally ascertained:
- the existence of acceptance and rejection criteria for all samples that arrive at the CPHRL; and the turn-around-time for tests performed; and
- that documentation of the chain of custody for all samples received from different tiers of the laboratory system and proper sample package during transportation is also captured as best practices.

Challenges

- The animal laboratory sector does not have a tiered system as there is only one site in the country.
- The human laboratory sector integrated specimen referral and transport system needs to be strengthened, including with improvements in staff training, while the animal sector is yet to develop sample referral policies and guidelines.

D1.2 Laboratory quality system – Score 1

The human laboratory sector is more advanced than the animal sector. Therefore there is a difference in scoring for the human and animal laboratories. The human laboratory has developed national quality standards, although these are not being implemented, which guaranteed a score level of 2, while the animal sector has its national laboratory quality standards under development, and thus a score level of 1, bringing the overall country score for this indicator to Level 1.

Strengths

- Both public health and veterinary reference laboratories are implementing quality management systems following the ISO 15189 standards, and the human laboratory sector has staff at the national, regional and district levels trained on laboratory quality management systems (LQMS).
- The human laboratory sector has developed and is implementing SOPs for testing 22 priority diseases.
- Laboratory results are reported within appropriate turn-around times through the pre-analytical, analytical and post-analytical stages of testing.
- A national external quality assurance (EQA) programme or proficiency testing exists for selected pathogens, notably viruses, and the country also participates in additional international EQA programmes.

Challenges

- There is an absence of EQA programmes for priority bacterial pathogens such as cholera.
- The animal laboratories have recently established bacteriology, with no antimicrobial susceptibility testing yet.
- There is no national body in charge of laboratory registration, licensing of laboratories, personnel, certification and accreditation.

D1.3 Laboratory testing capacity modalities – Score 2

There was a difference between the human and animal sectors in scoring for this indicator. The human laboratory sector can verifiably perform nucleic acid amplification testing and bacterial culture with antimicrobial sensitivity testing. The external evaluators verified the existence of quality assurance processes that were in place with sequencing capacity that was present. This represents a score of level 3.

The animal laboratory sector, on the other hand, can support testing modalities, including serological tests (i.e. antigen and antibody enzyme immunoassays) with quality assurance processes in place, representing a score of level 2.

With this difference in scores, the overall country score was agreed to be at level 2 in the hope that the human laboratory will support the animal sector to improve its testing capacity.

Strengths

- The human laboratory has the following:
- a national diagnostic algorithm for testing for priority diseases;
- a competent laboratory workforce with routinely trained staff who are mentored and assessed on specific techniques;
- a wide range of diagnostic platforms, including RT-PCR, bacterial culture, serology and microscopy;
- genetic sequencing capability, currently enabled for SARS-CoV-2 sequencing but with the possibility to expand to look at other pathogens.
- The animal laboratory was established only very recently, carrying out the first tests in November 2019. It has demonstrated significant capability development since then, with the continuing addition of new techniques.
- Laboratory procedures in both sectors adhere to biosafety/biosecurity standards and use routinely maintained and serviced equipment.

Challenges

- Testing capability and capacity for priority diseases is not well developed for the animal sector and is centralized at one facility.
- The NLS experiences difficulties in procuring diagnostic kits and reagents, particularly for emergency response purposes.

D1.4 Effective national diagnostic network – Score 1

For this indicator, the human laboratory sector was verified to have a score level of 3 because it exhibits tier-specific diagnostic testing strategies although they are not being fully implemented. Laboratory levels are distinguishable with a properly constructed laboratory map that identifies public, private, faith-based and higher institutional laboratories, all with their respective testing menus. There is only one animal reference laboratory in the country with a tiered system still being developed – this meant a score level of 1. With the animal laboratory sector still in the initial implementation phase as it was established only three years ago, it was agreed to maintain the country score for this indicator at level 1.

Strengths

- There is systematic coordination and communication between laboratories at different tiers of the human sector.
- There was a verified specimen transportation and recording system noted at the Central Public Health and National TB reference laboratories.
- There are routine coordination meetings, supportive supervision and mentorship from the top tier to lower tiers.

Challenges

- Data-sharing from national/reference laboratories to lower-tier laboratories remains challenging. Whereas the electronic Case-based Disease Surveillance System (eCBDS) is used by the districts to submit sample details and send notifications for sample analysis requests ahead of actual sample transportation, the sending of results through eCBDS from the national/reference laboratories to the districts is a challenge. Districts are often notified by telephone calls from the national surveillance officials in charge of priority disease surveillance. These calls are not logged in a register and therefore it is difficult to track which samples received results or which did not. Results are often relayed to the districts only if a sample tests positive for a pathogen.
- Data-sharing between human and animal laboratories is non-existent for One Health surveillance.
- There is no integrated national laboratory information management systems between the human and animal laboratory sectors.

Recommendations for priority actions

- Implement an integrated and reliable/efficient specimen referral system for national specimen referral across units in both human and animal laboratory sectors.
- Expand implementation of the quality system across all human health laboratories and ensure roll-out in the animal laboratories, including maintaining training in Strengthening Laboratory Management Toward Accreditation.
- Establish a laboratory licensing body under the Allied Health Bill and enforce laboratory licensure.
- Expand the diagnostic capacity to cover all priority diseases across both humans and animals, ensuring in-country testing capacity as far as possible to minimize delays in international specimen referral.
- Implement monitoring and evaluation mechanisms for the human health laboratory tier system, support the development of a tiered laboratory system in the animal health sector, and formalize existing collaboration with academic institutions.
- Ensure sustained investment in human resources across the laboratory system, including recruitment and retention of, and support to, animal health laboratory personnel.

D2. Surveillance

Sierra Leone level of capabilities

Sierra Leone conducted a nationwide roll-out of the third edition of the Integrated Disease Surveillance and Response (IDSR) strategy of WHO's Regional Office for Africa. A list of priority diseases, conditions and events for both human and animal health sectors was established as part of the IDSR implementation. The surveillance system uses a four-layer structure (community, health facility, district and national) to achieve the global health security goal of prevention, early detection and response to public health threats. The country conducts real-time surveillance using a developed early warning surveillance system that can detect public health threats in a timely fashion. These systems provide data for situational awareness for all the country's prioritized events of public health concern. An electronic disease surveillance system for timely data collection and sharing was established. The country uses a One Health approach to improve communication and collaboration across sectors and between national and intermediate levels of authority regarding surveillance and response to events of public health significance. An event-based surveillance is also established to complement indicator-based surveillance. Efforts to sustain the effectiveness of the surveillance system led to the roll-out of the IDSR curriculum to public health training institutions. A weekly epidemiological bulletin is regularly produced and disseminated to stakeholders at national and international levels. Regular IDSR supportive supervisions and data quality audits are carried out to sustain gains and ensure the quality of the system. However, the integration of the public health sector into the surveillance system and the effectiveness of the animal health surveillance system require more attention.

Indicators and scores

D2.1 Early warning surveillance function – Score 3

The country adapted and rolled out the third edition of the WHO African Region's IDSR strategy which is being implemented at all levels of the health system with an immediate and weekly reporting system that integrates laboratory results.

Strengths

- All health facilities have at least one health worker trained in IDSR.
- A list of priority diseases, conditions and events is available for human and animal health surveillance.
- An early warning surveillance system is in place for both human and animal health with a toll-free hotline (117), community-based surveillance, and epidemic intelligence from open source (EIOS).
- Events-based surveillance is implemented through media monitoring, community, call centres, health facilities.
- Indicator-based surveillance is established and reports through the DHIS2.
- There is commendable use of electronic tools for reporting (eIDSR) in human health disease surveillance.
- The surveillance system has targets for timeliness and completeness of reporting at district and national levels.
- All guidelines, job aids, training materials and reporting tools are printed and disseminated to all levels of the system.
- The country has identified thresholds for some priority diseases.
- The animal health system is also implementing surveillance for priority zoonotic diseases and events, including animal death.

- Effective information-sharing exists at national and district levels.
- Data validation and quality assurance are in place.

Challenges

- Independent parallel information systems show a lack of interoperability.
- Reporting tools are lacking at private health facilities, not all staff were trained.
- Community based surveillance is inadequate.
- There is a lack of integration of indicator-based and community-based surveillance systems.
- Data analysis and information-sharing are inadequate, especially at district level.

D2.2 Event verification and investigation – Score 4

National RRT guidelines and SOPs were developed and RRT members were identified and trained at national and district levels to verify, investigate and assess detected events in a multisectoral approach.

Strengths

- Multidisciplinary rapid response teams (RRTs) are trained and available at national and district levels for event verification and investigation.
- Data are stored in the DHIS2 and HMIS database at district and national levels for human health surveillance.
- Data are stored in basic Excel and EMPRES–I for animal health.
- Standard operating procedures for RRTs are developed and implemented.
- Guidance for risk assessment is available for the national level – Strategic Tool for Assessing Risk (STAR) – and for the district level – Threats Hazard Identification and Risk Assessment (THIRA).
- Risk assessment information is disseminated through meetings, training and sharing of soft/hard copies of assessment reports.

Challenges

- There is inadequate capacity in the area of community-based surveillance.
- There is a lack of developed electronic integrated tools for data and information-sharing between the human and animal sectors. Currently information is being shared through meetings and in unstructured ways (e.g. paper forms, emails etc.).

D2.3 Analysis and information-sharing – Score 3

Surveillance data is received regularly and analysed on some priority diseases, or unusual events, often with delay. Data are shared across sectors

Strengths

- There is advanced analysis of surveillance data at national level, with the exception of modelling.
- Health care workers are trained to analyse data at national and district levels.
- National and district level RRT are trained to conduct risk assessment.
- Surveillance data are received, analysed and shared regularly through the Emergency Preparedness and Response Group weekly meeting held every Wednesday with participants from relevant MDAs and health partners.
- Electronic tools are used to link case-level data with laboratory data. The human sector uses eCBDS to facilitate this link while the animal sector uses the EMAI system.
- Surveillance staff at district and national levels are trained on data analysis.
- National and district weekly epidemiological bulletins are produced regularly and disseminated across sectors and internationally.

Challenges

- There is a lack of capacity for advanced data analysis.
- There is no centrally located mechanism for integrating data from the human and animal health sectors.
- No data analysis is done at the district level for the animal health sector.
- There is no centrally located mechanism for integrating data from clinical case reporting and data from clinical or reference microbiological laboratories.

Recommendations for priority actions

- Extend the roll-out of the early warning system to all private health facilities through, inter alia, training, provision of tools, supportive supervision and performance monitoring.
- Integrate the indicator-based and event-based surveillance systems and roll out community-based surveillance in all areas as appropriate using the One Health approach.
- Test, review, evaluate and update the event verification and investigation systems on a regular basis.
- Build capacity for advanced data analytics at national level, and continue to strengthen capacity for surveillance data analysis at district level through training/refresher training, provision of tools and logistics and supportive supervision
- Strengthen data-sharing between human and animal health sectors through the establishment of an integrated electronic system.

D3. Human resources

Introduction

Human resources are important in order to develop a sustainable public health system over time by developing and maintaining a highly qualified public health workforce with appropriate technical training, scientific skills and subject-matter expertise. Human resources include nurses and midwives, physicians, public health and environmental specialists, social scientists, communication, occupational health, laboratory scientists/technicians, biostatisticians, information technology (IT) specialists and biomedical technicians and a corresponding workforce in the animal sector: veterinarians, animal health professionals, para-veterinarians, epidemiologists, IT specialists etc.

The recommended density of doctors, nurses and midwives per 1000 population for operational routine services is 4.45 plus 30% surge capacity. The optimal target for surveillance is one trained (field) epidemiologist (or equivalent) per 200 000 population who can systematically cooperate to meet relevant IHR and Performance Veterinary Services core competencies. One trained epidemiologist is needed per rapid response team.

Target

States Parties have skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR (2005).

Sierra Leone Level of capabilities

Sierra Leone's health workforce is facing severe constraints in terms of the numbers of qualified staff, equitable distribution throughout the country and level of skills and competence.

The MOHS' vision for its Human Resource for Health (HRH) policy (2017) sets the overall direction of national health workforce development for the long term. This policy has served as the starting point for strategic discussions forming the HRH Strategy – a resilient health workforce that is delivering cost-effective, evidence-based and high-quality health-care services that are equitable and accessible for the population of Sierra Leone by 2025. Consequently, the shorter-term goal which the Government of Sierra Leone aims to achieve through the HRH Strategy 2017–2021 is to plan, produce, deploy and maintain a resilient, highly motivated health workforce that can contribute to national socioeconomic development by ensuring equitable, affordable and high-quality health-care services for the population of Sierra Leone.

A robust, resilient and adequately equipped health workforce is essential for continued advancement and sustained achievement of IHR goals. Considerable efforts are being made from the MOHS standpoint to address the critical skills gap in order to support compliance with IHR regulations – e.g. FETP training, recruitment of a One Health coordinator, development of an Emergency Response Workers database, training of surveillance workers with the involvement, inter alia, of several stakeholders – the Ministry of Agriculture, Forestry and Food Safety (MAFFS), the Ministry of Environment (MoE) and Environmental Protection Agency (EPA).

The current public health workforce is about 14 236 persons compared with the set target of 24 000 under the essential package for health services. Epidemiologists are available at national level and in 12 of 16 districts. Clinicians are available but their numbers are not adequate and specialists are very few

according to World Bank data of 2018. Physicians per 1000 people were 0.1 and nurses and midwives were 0.8 per 1000 people. In the animal health sector, the lack of adequate human resources is more pronounced. Currently, there are only three veterinarians in the whole country, two of them working in administrative positions, and two staff with a Bachelor of Science degree are in senior positions in animal production. There are 13 district livestock officers supported by livestock assistants and two laboratory technicians. Many services of the Ministry of Agriculture are handled by volunteers at all levels. Thanks to the field epidemiology programmes being implemented in the country (e.g. FETP training, In-service Applied Veterinary Epidemiology Training [ISAVET]), 11 epidemiologists (eight frontline, two intermediate and one advanced) were trained. With the support of the World Bank's project REDISSE, six students are studying veterinary medicine in Ghana.

Indicators and scores

D3.1 Multisectoral workforce strategy – Score 2

- An assessment of the public health workforce has been conducted.
- A strategy to develop the health workforce exists but does not include all relevant sectors (e.g. animal health, environment).

Strengths

- An HRH strategic plan (2017–2021) is in place.
- The job descriptions for various career tracks and positions (scheme of service 2019) are available in the human health sector.

Challenges

- There is no a workforce strategy for animal health.
- There is an inability to develop a skills inventory and conduct a skills gap assessment for human resources for IHR.
- There is limited coordination for a consolidated multisectoral workforce strategy.

D3.2 Human resources for implementation of IHR – Score 2

Appropriate human resources are available in the public health sector at the national level, to detect, assess, notify, report and respond to events according to IHR provisions.

Strengths

- A surge personnel deployment plan is available.
- National Rapid Response Team SOPs are developed.
- A Rural Retention Action Plan 2019–2029 is available.
- Multidisciplinary task forces have been formed and they communicate with other actors (at national, intermediate and peripheral levels).

Challenges

- There is limited human resources capacity in the country, specifically in the animal health sector.
- Some cardres – such as biostatisticians, information systems specialists, veterinarians and social scientists – are very few or do not currently exist.

D3.3 Workforce training – Score 3

- Regular and routine competency-based training programmes and standards including the One Health approach are available for some professions, cadres or sectors.
- Two levels of FETP (frontline, intermediate) are in place in the country.
- One level (frontline) of the training programme ISAVET (In-service Applied Veterinary Epidemiology Training) is in place.

Strengths

- There are continuing professional education programmes for staff.
- National trainers and mentors are available for the FETP training and ISAVET programme.
- Training modules (IDSR, RRT, IPC, EPR, FETP, ISAVET etc.) are available.
- Partners support the implementation of training programmes.

Challenges

- Training needs have not been fully assessed and identified.
- There is limited ownership and commitment in the country.
- National financial resources allocated for workforce training are limited or lacking.
- The animal health sector has ageing staff and a lack of human resources at all levels.

D3.4 Workforce surge during a public health event – Score 2

A surge personnel deployment plan is available and includes other sectors (chemicals, radiation, animal health etc.).

Strengths

- A database for emergency response workers is available.
- A personnel deployment plan is available.

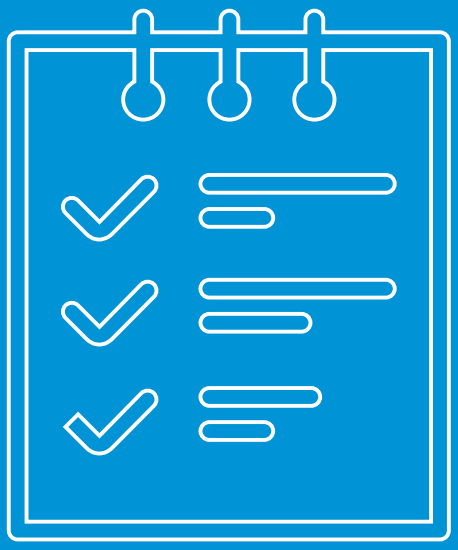
Challenges

- A skills inventory and skills gap assessment are lacking for human resources for IHR.
- Multisectoral coordination is limited.

Recommendations for priority actions

- Develop a consolidated multisectoral workforce strategy and ensure it is routinely monitored, updated and implemented consistently.
- Increase the capacity of human resources from the animal health sector to achieve IHR at all levels and ensure the availability of personnel through active recruitment and training.
- Conduct a gap analysis of the surge workforce required in all sectors for emergencies and update the national multisectoral workforce surge strategic plan.

Respond



R1. Health emergency management

Introduction

This capacity focuses on the management of health emergencies and systems for enabling countries to be prepared and operationally ready for response to any public health event, including emergencies, in accordance with the all-hazards requirement of IHR. Ensuring there are risk-based plans for emergency preparedness, readiness and response, robust emergency management structures and mobilization of resources during an emergency is critical for a timely response to public health emergencies.

Target

The target includes: 1) existence of national, strategic, multihazard emergency assessments (risk profiles) and resource mapping; 2) existence of emergency readiness assessment; 3) development of national health EOC81 plans and procedures; 4) establishment of an emergency response coordination mechanism or incident management system; 5) evidence of at least one response to a public health emergency within the previous year that demonstrates that the country sent or received medical countermeasures and personnel according to written national or international protocols; 6) existence of an emergency logistical and supply chain management system/ mechanism; and 7) existence of policies and procedures for research, development and innovation for emergency preparedness and response.

Sierra Leone level of capabilities

Before the 2014–2016 Ebola virus disease (EVD) epidemic in West Africa, limited capacities existed in Sierra Leone for public health emergency management, but since the end of the EVD outbreak Sierra Leone has established functional Emergency Operation Centres (EOCs) at national and subnational levels to support response coordination. Over the years, these EOCs have responded to outbreaks of Lassa fever, measles, anthrax, cholera and the COVID-19 pandemic.

Evidence suggests that the country is better prepared to respond to an outbreak today compared to 2014. The consensus is that Sierra Leone still has more work to do to achieve country readiness to respond to public health emergencies. The EPR programme works closely with the other sectors to strengthen laboratory, IPC, surveillance, risk communication and workforce capacity to respond to disease outbreaks.

Other great achievements have been done in terms of trained human resources, plans, FELTP etc.

Indicators and scores

R1.1 Emergency risk and readiness assessment – Score 3

National and subnational all-hazards risk profiles have been developed based on multihazard risk assessments that have been conducted. Contingency plans have also been developed, but at national level only. No contingency plans are developed yet at subnational level – Score 3

Strengths

- Sierra Leone has developed a National Emergency Risk Profile based on strategic multihazard emergency risk assessments which were conducted in May 2022.
- Readiness assessment has been conducted for certain priority diseases (e.g. EVD, Marburg).
- Sierra Leone has also developed a district-specific multihazard risk profile.
- Sierra Leone has developed and validated a contingency plan for some of the high-priority hazards identified at national level.
- The country has trained personnel who become familiar with risk assessment tools, the strategic tool for assessing risk (STAR), and threat and hazard identification and risk assessment (THIRA).

Challenges

- There is no risk assessment at the community level and no community readiness assessment checklist and mechanism in place.
- National emergency risk profiles are not reviewed or updated annually to accommodate emerging threats or changing risks.
- The private sector is not involved in the simulation exercises or other readiness activities.

R1.2 Public health emergency operations centre (PHEOC) – Score 4

The national PHEOC is in place and is located at Wilkinson Road, Freetown. It is staffed, with daily ongoing operations and maintenance and is capable of a coordinated response within 120 minutes. With district EOCs, the Concept of Operations (ConOps) that forms part of the PHEOC handbook is in place at both national and subnational levels. The district EOCs are established and are functional at subnational level. Strength

- There is an established national and subnational PHEOC with a ConOps document that describes the plans and SOPs for the EOC.
- There is a cadre of local human resources at all levels with the technical, operational and logistical knowledge to respond to public health emergencies.
- Readiness and response coordination structures (EOCs) exist at both national and subnational levels among MDAs, partner agencies and civil society organizations.
- Exercises are conducted to test EOC activation and networking.

Challenges

- No training programme has been developed for EOC staff.

R1.3 Management of health emergency response – Score 4

An IMS integrated with a national PHEOC or equivalent structure is in place and operational at national level and is able to support the subnational level.

Strengths

- An integrated IMS structure is in place and is operational at national and subnational levels.
- Response SOPs are available.
- IMS training is conducted for EOC core staff.
- The IMS structures at all levels are tested through exercises.

Challenges

- There is a need for the establishment of a National Public Health Agency for unified and autonomous response mechanisms.
- There is no sustainable access to response funds.

R1.4 Activation and coordination of health personnel in a public health emergency – Score 2

A national plan has been developed that outlines a system for the deployment of surge personnel and teams, including sending and receiving emergency personnel.

Strengths

- Sierra Leone has developed and validated a plan that outlines mechanisms and decision-making related to sending and receiving health personnel during a public health emergency.
- The validated plan addresses regulatory, licensure, safety, financial and liability concerns for sending and receiving personnel for public health emergency response.
- Awareness sessions are conducted for the development of the Emergency Medicat Team strategy for Sierra Leone.

Challenges

- The country-validated plan for deployment of surge personnel does not include other sectors such as the security and animal sectors.
- No procedures and training materials have been developed to orient surge personnel.
- Officially, the country is not part of any regional/international personnel deployment agreements.

R1.5 Emergency logistic and supply chain management – Score 2

An emergency logistics and supply chain management system/mechanism has been developed but is not able to provide adequate support for health emergencies.

Strengths

- The country has a validated medical countermeasure response plan and an emergency supply chain playbook.
- Sierra Leone has demonstrated its capacity to expand the normal supply chain system rapidly to accommodate the demand posed by public health emergencies.
- The medical countermeasure plan addresses regulatory, safety, logistics, security and financial concerns related to sending/receiving/distributing medical countermeasures.
- Sierra Leone has developed and validated pandemic preparedness plan that addresses countermeasures.

Challenges

- There is no budget to support stockpiling for emergencies.

R1.6 Research, development and innovation – Score 1

Research and development activities (operational and implementation) including approvals of research are conducted on an ad hoc basis.

Strengths

- There are ad hoc processes for conducting operational research guided by the Sierra Leone Ethics and Scientific Review Committee and the National Research for Health Policy.
- The FETP and SORT IT programmes include emergency preparedness research.
- Some institutions locally and externally have been identified for research partnerships.
- A Sierra Leone Ethics and Scientific Review Committee exists.
- There is an existing research policy for the country.

Challenges

- There is no national strategic framework for operational research in health emergencies.

Recommendations for priority actions

- Develop intermediate all-hazards risk profiles based on a multihazard risk assessment with priorities identified.
- Resource and implement a readiness and/or contingency plan at both national and subnational levels.
- Develop intermediate-level plans that outline a system for the pre-deployment of surge personnel and teams, including sending and receiving personnel and teams during public health emergencies.
- Review and update the medical countermeasure plan and Emergency Supply Chain playbook based on the identified risks/hazards.
- Develop a Health Emergency Action Plan or Framework for directing research for emergency preparedness and response.

R2. Linking public health and security authorities

Introduction

Public health emergencies pose special challenges for law enforcement, whether the threat is man-made or naturally occurring. In a public health emergency, law enforcement will need to coordinate its response quickly with public health and medical officials.

Target

The country conducts a rapid, multisectoral response to any event of suspected or confirmed deliberate origin, including the capacity to link public health and law enforcement and to provide timely international assistance.

Sierra Leone level of capabilities

The country has long recognized the need for collaboration between public health and security authorities. The Republic of Sierra Leone Armed Forces (RSLAF) were deeply involved in the logistical coordination of the West African EVD outbreak. During the COVID-19 pandemic, law enforcement agencies also played a role in the enforcement of public health measures throughout the country.

If communication and joint activities exist, their practice should be institutionalized, documented and sustained through regular exercises and simulations.

Indicators and scores

R2.1 Public health and security authorities (e.g. law enforcement, border control, customs) are involved during a suspected or confirmed biological, chemical or radiological event – Score 2

Points of contact have been identified and security agencies participate in coordination meetings in Freetown as well as at points of entry.

Strengths

- National security authorities participate in the One Health platform, Emergency Preparedness Resilience and Response Group (EPRRG), and Chemical, Biological, Radiological and Nuclear (CBRN) committee meetings.
- Information-sharing occurs through the EPRRG email list or the One Health platform.
- A joint exercise (i.e. the Rapid Deployable Isolation and Treatment Facility, or RDITF) was conducted between public health and security authorities.
- Protocols and activities are developed and implemented between public health and security authorities during major outbreaks (i.e. screening protocols for COVID-19 at points of entry).
- The multihazards public health National Emergency Response Plan (NERP) was developed in 2019.

Challenges

- There is no formal MoU or agreement between the security and other sectors for information-sharing and joint response to public health events.
- Activities, coordination and training between public health and security authorities takes place on an ad hoc basis due to their dependence on external support.
- No SOPs or agreements are in place between the public health and security agencies to support joint epidemiological and criminal investigations to identify and respond to suspected biological, chemical and radiological events of deliberate origin.

Recommendations for priority actions

- Develop MoUs or agreements detailing the roles and responsibilities and information sharing of the public health and security authorities during a public health event, and update the 2019 NERP accordingly.
- Develop a regular cadence for meetings in all sectors and integrate contact points for the Biological Weapons Convention, Chemical Weapons Convention, IAEA, INTERPOL, WOAH, UN Security Council Resolution 1540, and the UN Secretary General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons.
- Systematize joint risk assessments and planning between public health and security authorities, building on existing joint activities at points of entry
- Develop multisectoral SOPs or agreements to support joint epidemiological and criminal investigations to identify and respond to suspected biological, chemical and radiological events of deliberate origin.
- Validate developed MoUs, SOPs, and protocols through simulation exercises, and train public health and securities agencies.

R3. Health services provision

Introduction

Resilient national health systems are essential for countries to prevent, detect, respond to and recover from public health events, while ensuring the maintenance of health system functions, including the continued delivery of essential health services at all levels. Particularly in emergencies, health services provision for both event-related case management and routine health services are equally important. Moreover, ensuring minimal disruption in health service utilization before, during and beyond an emergency and across the varied contexts within a country is also a critical element of a resilient health system.

Target

The country should: 1) show evidence of demonstrated application of case management procedures for events caused by IHR-relevant hazards; 2) demonstrate optimal utilization of health services, including during emergencies; and 3) ensure continuity of essential health services in emergencies.

Sierra Leone level of capabilities

The country's support capacities are not the best. All the retained priority events in the list after risk assessment have not been taken into account in the case management strategies. Data for essential services are available in the national surveillance system but there is under-reporting.

The current health sector plan and national emergency preparedness and response plans do not have explicit consideration for the continuity of essential health services. Hence there is a need for a comprehensive plan for the continuity of essential health services during emergencies.

Indicators and scores

R3.1 Case management – Score 1

The case management guidelines are available only for these diseases: COVID-19, viral haemorrhagic fevers, cholera). The guidelines do not take into account of all the priority events found during the risk assessment.

Strengths

- A National Action Plan for health security is available for 2018–2022.
- Sierra Leone has developed basic packages of essential health services 2015–2020.

Challenges

- Not all priority disease conditions are covered.
- The referral system is not fully functional. However an operational system of referral is ongoing through the National Emergency Medical Service (NEMS) for priority groups (maternal and child).
- Limited resources are available to support referral systems.
- The functionality of these protocols had not been tested through simulation exercises.

R3.2 Utilization of health services – Score 3

There were about 4.1 million outpatient cases in 2019 in DHIS2. However, many of the private facilities have data that are not included in DHIS2 and therefore there is under-reporting in the national system. There are challenges in access to health services due to physical distance and availability of health facilities, health workers, equipment, medicines etc.

Strengths

- Every month all health facilities submit aggregate data on essential health services to the District Health Management Team (DHMT). The DHMT then uploads the data to DHIS2 which is accessible at the national level. Data are disaggregated by facility, district and age.
- Professional bodies responsible for the accreditation of health facilities for both public and private service providers include: the Medical and Dental Council Sierra Leone, the Pharmacy Board and The Nurses board.

Challenges

- Reporting is not always fully completed and regular data analysis at the district and national levels is not always done.
- Data analysis for essential health services during emergencies is done but on an ad hoc basis.

R3.3 Continuity of essential health services (EHS) – Score 2

A package of EHS has been defined and documented (2015). Guidelines for continuity of essential health services were developed for COVID-19 in 2020. However, a mechanism for monitoring service continuity may not be fully functional or documented with regular reports.

Strengths

- A national essential health services plan was developed in 2015 and includes the following pillars for packages of essential health services: patient and worker safety; health workforce; essential health services; surveillance and information; and community ownership

Challenges

- The current health sector plan and national emergency preparedness and response plans do not have explicit consideration for the continuity of EHS. Hence there is need for a comprehensive plan for continuity of EHS during emergencies
- There is no EHS continuity plan/guideline or dedicated section in other emergency operations/ management plans available.

Recommendations for priority actions

- Conduct a comprehensive mapping of available required resources for case management for the emergency priority conditions, in accordance with IHR (2005).
- Expand the scope of the national clinical case management guidelines to include all-hazards according to IHR (2005).
- Develop, test and implement a comprehensive case management referral protocol usable at every level of care.
- Develop and implement a package of EHS and plan/guidelines for continuity of essential health services during emergencies and a mechanism for monitoring service continuity during emergencies with consideration of marginalized and vulnerable populations.
- Establish a national facility/provider accreditation system, or other national external evaluation systems, to ensure quality services and public trust for continued service utilization during emergencies

R4. Infection prevention and control

Introduction

To have strong, effective infection prevention and control (IPC) programmes that enable safe health care and essential services delivery and prevention and control of health care-acquired infections (HCAIs), it is critical initially to ensure that at least the minimum requirements for IPC are in place at both the national level and the facility level. From there one can gradually progress to the full achievement of all requirements within the WHO recommendations for IPC core components.

Target

1) The national IPC programme strategy has been developed and disseminated; 2) the national IPC programme plans are implemented, with monitoring and reporting of HCAIs; and 3) there are established national standards and resources for safe health facilities.

Sierra Leone level of capabilities

The 2014–2016 EVD outbreak has provided an opportunity to build the National IPC Programme (NIPCU) in the MOHS of Sierra Leone. The unit provides oversight and coordinates the implementation of the IPC programme in both public and private facilities at national and subnational levels. This is done through a coordinated effort with other Ministry of Health programmes, the private sector, academic institutions, and donors such as the United States Centers for Disease Control and Prevention CDC, WHO and other public health development partners. The National IPC action plan is being updated to integrate all eight WHO minimum core components of IPC.

At the operational level, the NIPCU is represented at the DHMT by an IPC focal point. A comprehensive certificate course in IPC for undergraduate clinical and non-clinical students has been established at universities in Sierra Leone to increase the capacity of the health workforce in the country. Along the same lines, a curriculum for pre-service IPC has been developed, and submitted to the Senate and is pending validation. All hospitals at the national and subnational levels have national guidelines and designated IPC focal points. Efforts are ongoing with the WASH programme and other relevant partners to ensure sustained and quality WASH activities in all health facilities in Sierra Leone.

Indicators and scores

R4.1 IPC programmes – Score 3

A national IPC programme exists, and a national IPC operational plan according to the WHO minimum requirements is available – including the role of IPC in outbreaks and pandemics. National guidelines/standards for IPC in health care are available and disseminated. Selected health facilities are implementing guidelines using multimodal strategies, including health workers' training and monitoring and feedback.

Strengths

- The IPC Programme exists at the national level and in health-care facilities – both public and private.
- There are trained IPC focal points in all hospitals – both public and private – and supervisors in all districts.
- Updated national IPC guidelines/standards are available.
- The National IPC Action Plan and a National IPC Operational Plan are currently being updated in accordance with the WHO minimum requirements, including the role of IPC in outbreaks and pandemics.

Challenges

- There is limited budgetary allocation for the printing and dissemination of IPC guidelines/standards and for training health-care workers to implement these guidelines using multimodal strategies in all health-care facilities, both public and private.

R4.2 HCAI surveillance – Score 1

The HCAI Surveillance Programme or National HCAI strategic plan exists and there are plans to develop a national HCAI surveillance strategy for health-care facilities. Surgical Site Infection monitoring is already done in selected hospitals.

Strengths

- Surgical Site Infection (SSI) surveillance on caesarean section monitoring is ongoing in 16 hospitals.

Challenges

- Absence of the National Strategic Plan for HCAI Surveillance is a challenge. It would include pathogens that are antimicrobial-resistant and/or prone to outbreaks.
- The microbiology laboratory is inadequate for culture and sensitivity testing to conduct HCAI point prevalence surveys in health-care facilities using the new WHO and ECDC protocols.

R4.3 Safe environment in health facilities – Score 1

Some aspects of a safe built environment (IPC and WASH) are under development. However, appropriate infrastructure materials and equipment for IPC, as well as standards for the reduction of overcrowding and for optimization of staffing levels in health-care facilities, are not available.

Strengths

- All hospitals have a designated screening area and permanent isolation facilities.
- There is local production of alcohol-based hand rub and liquid soap.

Challenges

- The quality and maintenance of the WASH infrastructure are inadequate for health-care facilities.
- Sterilization facilities, IPC supplies and the maintenance of medical equipment in hospitals are inadequate.
- There is an absence of standards/protocol for reducing overcrowding and for optimizing staffing levels in health-care facilities.

Recommendations for priority actions

- Validate the updated National Infection Prevention and Control Action Plan, disseminate the National Infection Prevention and Control (IPC) Guidelines, and publish, disseminate and train staff to implement WHO minimum requirements for IPC, while ensuring monitoring systems are in place to detect the percentage of health facilities meeting the WHO minimum requirements (aiming for more than 75%).
- Develop and implement a comprehensive national strategic plan for HCAI surveillance (including pathogens that are antimicrobial-resistant and/or prone to outbreaks).
- Conduct HCAI point prevalence surveys in selected health facilities using the new WHO and ECDC protocol.
- Implement the dissemination and the use of WASH standard quality guidelines to ensure continued access to safe water in all health facilities in collaboration with the WASH programme and related sectors.
- Develop and implement the standards for reducing overcrowding and optimizing staffing levels in health-care facilities, according to WHO minimum requirements.

R5. Risk communication and community engagement

Introduction

Risk communications should be a multilevel and multifaceted process which aims at helping stakeholders to define risks, identify hazards, assess vulnerabilities and promote community resilience, thereby promoting the capacity to cope with an unfolding public health emergency. An essential part of risk communication is the dissemination of information to the public about health risks and events – such as disease outbreaks. For any communication about risk caused by a specific event to be effective, the social, religious, cultural, political and economic aspects associated with the event should be taken into account, including the voice of the affected population.

Target

States Parties use multilevel, multisectoral and multifaceted risk communication and community engagement (RCCE) capacity for public health emergencies. Real-time exchange of information, advice and opinions during unusual and unexpected events and emergencies results in informed decisions to mitigate the effects of threats so that protective and preventive action can be taken. This includes a mix of communication and engagement strategies, such as media and social media communications, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement, community engagement and infodemic management.

Sierra Leone level of capabilities

The One Health RCCE TWG ensures consistent, accurate and clear message dissemination for increasing knowledge and influencing attitudes and preventive behaviours, before, during and after human, animal, zoonotic and environmental emergencies/outbreaks across national, district and chiefdom levels.

The One Health RCCE TWG was established in 2018–2019, headed by the risk communication leads from the MOHS, MAFS and EPA and supported by representatives of the Republic of Sierra Leone Armed Forces, 117 call centres, the traditional healers' association and other implementing partners. In 2021, the One Health RCCE TWG included the communication lead from ONS.

The One Health RCCE team is efficient in terms of coordinating the One Health RCCE activities with all the sectors in the One Health approach as well as with different partners. With this, very good results have been achieved so far in terms of RCCE systems for emergencies, risk communication and community engagement.

Basically, the team is running a digital infodemic management approach and system that needs to be strengthened at the district level and at lower levels. This approach guides the operational strategies on the ground.

A great job is being done with the radio programmes; the One Health RCCE team is doing good public communication as well as managing community feedback.

Indicators and scores

Note: The scoring of the Sierra Leone RCCE thematic area was done as a single multisectoral body because the country demonstrated functional operation of the One Health RCCE.

R5.1 RCCE systems for emergencies – Score 3

Both the country team and the external team agreed on the score 3 for R5.1. RCCE systems for emergencies. This means "National RCCE functions are established and being implemented, as well as relevant aspects of infodemic management, behavioural and cultural insights. There are dedicated but insufficient human and financial resources; and multisectoral coordination with multiple technical areas is occurring but limited."

Strengths

- The National OH RCCE strategy is available and guides interventions.
- There are RCCE strategies/plans for specific incidents.
- Trained RCCE personnel are at national, district and chiefdom levels.
- An established infodemic management platform exists, with trained personnel up to chiefdom level reporting through the platform.
- There is strong partner participation in, and support for, RCCE activities.

Best practices

- There is regular review of the One Health RCCE strategy.
- A social listening tool has been developed using the One Health approach – with reporting on human and animal health.
- Availability of the annual One Health RCCE workplan guides partners' interventions.
- There is joint planning, training and implementation among One Health RCCE players and partners.
- Trained and active chiefdom mobilizers and journalists report on the platform.
- There is periodic training of the integrated One Health RCCE team at district level.

Challenges

- Partner coordination at district level is a challenge:
- district One Health RCCE monthly meetings are irregular,
- The RCCE partner mapping platform is not fully utilized by RCCE players.
- The infodemic dashboard is underutilized by district leadership.

R5.2 Risk communication – Score 4

Both the country team and the external team agreed on the score 4: "There is planned communication with ongoing proactive outreach through a variety of channels (e.g. hotline, complaint systems, social listening); online and offline media are monitored daily for feedback, and insights and data are used to adjust and improve risk communication strategies. There is strong infodemic management using search mechanisms for online or/and offline sources to shape messages and strategies. There is coordination of risk communication strategies and messages across sectors and levels of government."

Strengths

- The One Health RCCE TWG is functional at national and district levels.
- Sierra Leone maintains a functional EPRRG at national level.
- A system of infodemic/rumour management is in place.
- There is an established feedback mechanism to respond to public concerns, questions and misinformation.
- There are specific RCCE strategies for specific events (anthrax, EVD, Marburg etc.).
- There is a dedicated message and material subcommittee within the One Health RCCE team.
- Sierra Leone is a member of the African Union and WAHO RCCE network.
- There are trained media monitoring personnel at national and district levels.
- There are dedicated spokespersons at national and district levels for the respective One Health sectors of the RCCE TWG.
- There is a network of health reporters in the country.

Best practices

- The national One Health RCCE team holds meetings twice a month.
- There are district One Health RCCE teams.
- The infodemic Power BI dashboard is used to analyse public concerns and rumours.
- Meetings on misinformation are held once a month.
- Consistent media monitoring is carried out, with reports shared daily.
- Refresher training is conducted for spokespersons at all levels.
- Regular training is conducted for health reporters.
- Regular press briefings are held, and press releases, advisories and public notices are shared.
- Periodic surveys are conducted (via - BBC Media Action Report, KAP Survey – Survey Institute of Governance Reforms, the RCCE team, Breakthrough ACTION, Focus 1000, the MOHS and other partners).

Challenges

- There is inadequate knowledge of the utilization of the dashboard among some of the district leadership.
- There is inadequate support for the national infodemic management team.
- There is delay in processing the MoU between the Independent Media Commission and One Health line ministries (MOHS, MAFS, MoE/EPA).

R5.3 Community engagement – Score 4

Both the country and the external team agreed on the score 4: "There is planned communication with ongoing proactive outreach through a variety of channels (e.g. hotline, complaint systems, social listening); online and offline media are monitored daily for feedback, and insights and data are used to adjust and improve risk communication strategies. There is strong infodemic management using search mechanisms for online and/or offline sources to shape messages and strategies. There is a coordination of risk communication strategies and messages across sectors and levels of government."

Strengths

- There are trained RCCE personnel at the national, district and community levels who support community engagement activities.
- RCCE is a core pillar within the national EPRR framework.
- Established community structures (chiefdom taskforces, FMCs, VDCs) and other networks interface with the One Health RCCE structures at district and national levels.
- Sierra Leone has a toll-free line (117 call centres) that community members can reach.
- SOPs are available for community engagements.
- A Community Led Action manual is available and guides the implementation of the approach.
- There is a fine balance between expert knowledge and lay perspectives.

Best practises

- Trained staff at national, district and chiefdom levels support community engagement efforts.
- Regular KAP surveys are conducted to map out the social, religious, economic and health dynamics of communities.
- The One Health RCCE maintains a database of trained mobilizers within the communities that could be called upon in case of any surge activities.
- Sierra Leone has adapted the Community Led Action module for community engagement.
- Inclusivity of people with disabilities (PWD) – who are trained and utilized during health interventions.
- AAR, IAR and other reviews are conducted to evaluate community engagement interventions.
- Analysis of the infodemic management system fosters the development of RCCE strategy and messaging.
- Communities are capable of developing their action plans.

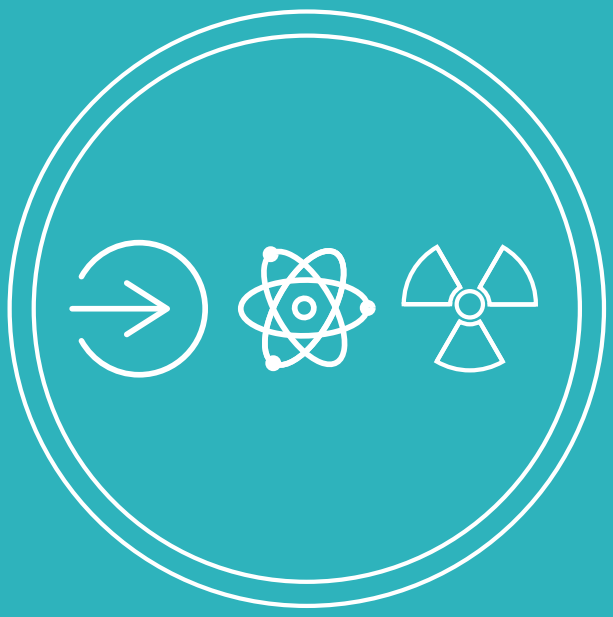
Challenges

- Engagement with vulnerable groups such as people with disabilities, older persons and persons living with HIV is sometimes interrupted.
- Animal and environmental health workers are inadequately distributed across the country.

Recommendations for priority actions

- Train district medical officers, district agricultural officers, and other senior district officers on how to use the infodemic management dashboard.
- Integrate the Community Led Action model into the Community Health Workers and Community Animal Health Workers recruitment training model and roll out training on rumour reporting and responding for the Risk Communication and Community Engagement staff at chiefdom level.
- Train community health workers, community animal health workers, frontline extension workers, block extension workers, forest rangers and forest guides in the Community Led Action model as well as the different RCCE domains at all levels.
- Review and have signed the MoU on public health reporting between the Independent Media Commission, the Ministry of Agriculture and Food Security, and the Ministry of Environment/Environment Protection Agency.
- Hold annual RCCE resource mobilization/advocacy meetings.

IHR-related hazards, points of entry and border health



PoE: Points of entry and border health

Introduction

All core capacities and potential hazards apply to points of entry and thus enable the effective application of health measures to prevent international spread of diseases. States Parties are required to maintain core capacities at designated international airports and ports (and, where justified for public health reasons, a State Party may designate ground crossings), which will implement specific public health measures required to manage a variety of public health risks.

Target

States Parties designate and maintain core capacities at international airports and ports (and, where justified for public health reasons, a State Party may designate ground crossings) that implement the specific public health measures required to manage a variety of public health risks.

Sierra Leone level of capabilities

In Sierra Leone, the main objective of Point of Entry and Border Health is to prevent or reduce the risk of entry of infectious diseases into the country and support the implementation of the IHR (2005). There are four designated points of entry (PoEs) in Sierra Leone: two ground crossings (Gbalamuya and Jendema), one airport (Lungi International Airport) and one seaport (Water Quay Port). Except for the four designated PoEs, 39 of the 163 PoEs identified during a national geomapping exercise currently have Port Health staff present. Eleven non-designated points of entry are linked to the national surveillance system. These PoEs are reporting through DHIS2 and the immediate and weekly reporting of diseases and events under surveillance is effective. All designated PoEs have a tested public health emergency contingency plan for events caused by biological hazards, with the participation of other sectors such as livestock officers, immigration, customs, military and police. There is strong cross-border collaboration with neighbouring countries and a survey on cross-border population mobility was carried out in five border districts (Kono, Kailahun, Falaba, Kambia and Pujehun) to ascertain the population's mobility patterns and to realign the cross-border interventions with the risk of disease spread across borders.

Indicators and scores

PoE1. Core capacity requirements at all times for PoEs (airports, ports and ground crossings) – Score 2

Most of the designated PoEs are implementing some routine core capacities. There is need for designated PoEs to implement all routine core capacities (which entail trained staff for vector control, conveyance inspection etc.) integrated into the national surveillance system for biological/all hazards.

Strengths

- Port Health staff are present at designated PoEs and some non-designated PoEs in order to conduct activities such as immediate and weekly reporting.
- SOPs for Port Health operations are available and are displayed at designated PoEs.
- The Public Health Act of 2022, which is in the final stages of publication, contains legal provisions for PoEs.

Challenges

- PoEs are not implementing all the routine core capacities using an all-hazards approach and few of them are integrated into the national surveillance system.
- There is lack of integration of vector control/management practice in PoE functions.
- The funding allocation for staff capacity-building and for additional deployment of PoE staff at unmanned/porous crossing points is inadequate.

PoE2. Public health response at PoEs – Score 3

The PoE multisectoral public health emergency contingency plan has been developed for all designated PoEs, and for 11 non-designated PoEs that are integrated into the national surveillance system.

Strengths

- A public health emergency contingency plan is available for events caused by biological hazards at the airport, seaport and ground crossings.
- A Crisis Management Team has been established for emergency response at PoEs.
- There is strong coordination among PoE stakeholders during an emergency/event and at all times.
- Cross-border coordination meetings have been conducted with neighbouring countries.

Challenges

The all-hazards approach is not integrated into the current PoE public health emergency response plan.

Temporary isolations are substandard and the referral of sick travellers from PoEs to the nearest health facility is usually delayed.

Technical and financial capacities to integrate additional non-designated PoEs into the national surveillance system are inadequate and need to be guided by strategic risk assessment.

PoE3. Risk-based approach to international travel-related measures – Score 1

Systems are still under development. A survey on cross-border population mobility was carried out to better understand the risk related to the international movement of the population. However, other sectors are yet to be integrated in order to mount a thorough system.

Strengths

- SOPs and guidelines have been developed for human health.
- A survey on cross-border population mobility was carried out in five border districts (Kono, Kailahun, Falaba, Kambia and Pujehun) to understand the population's mobility patterns and fit them into the country's risk analysis.

Challenges

- Others sectors are not yet integrated into the development process of international travel-related measures/guidelines to support the decision-making process in drafting, disseminating and implementing international travel measures in line with the IHR (2005) and the country's risk analysis.

Recommendations for priority actions

- • Complete the implementation core capacity requirements at all times at designated PoEs (airports, ports, and ground crossings) – notably sanitary conveyance inspection, environmental hygiene, vector control management and arrangements for human and animal isolation/quarantine facilities where required.
- • Develop an all-hazards plan for PoEs with a multisectoral approach and integrate it into the National Emergency Response Plan and into the national surveillance system.
- • Integrate more non-designated PoEs into the national surveillance system in line with the results of the strategic risk assessment at PoEs.
- • Conduct field-testing of the public health emergency contingency plan (including simulation exercises).
- • Develop and implement a national multisectoral process with a mechanism to determine the adoption of international travel-related measures with a risk-based approach.

CE. Chemical events

Introduction

Timely detection of, and effective response to, potential chemical risks and/or events require collaboration with other sectors responsible for chemical safety, industries, transportation and safe disposal. This would require States Parties to have surveillance and response capacity to manage chemical risk or events and effective communication and collaboration between the sectors responsible for chemical safety.

Target

States Parties have surveillance and capacity for chemical risks or events. This requires effective communication and collaboration between the sectors responsible for chemical safety – including health, occupational health, emergencies, environment, transportation, safe disposal, agriculture/ veterinary as well as industries.

Sierra Leone level of capabilities

Sierra Leone is a signatory of the main international regulations relating to the management of civilian and weaponized chemical agents, such as the Minamata Convention and the Chemical Weapons Convention. In addition, Sierra Leone has developed several guidance documents and legal frameworks for safely managing and using toxic chemicals and related toxic waste, including in industry and agriculture.

However, the level of preparedness and response for major chemical accidents still needs important improvements – mainly in relation with the coordination mechanisms between stakeholders, the level of training of staff, and the material and financial resources needed for the response to such events.

During the current JEE exercise, the stakeholders involved showed a tremendous capability for objectivity and self-evaluation, identifying the main action points for improvement.

Indicators and scores

CE1. Mechanisms established and functioning for detecting and responding to chemical events or emergencies – Score 2

The JEE team and Member State counterparts reached a consensus score of 2 for this indicator.

This score reflects previous efforts in establishing guidelines, response plans, legal frameworks and, most importantly, a consequent score in good practices, indicating excellent grounds for improvement. The main gaps in relation to this indicator are a lack of coordination and a lack of material, human and financial resources that are needed to get a score of 3 in the next JEE.

Strengths

- Some guidelines are available under the IDSR (for surveillance and response).
- SOPs for the disposal of hazardous waste, pharmaceutical and food waste are available:
- Regularly employ standard operating procedures in the disposal of harmful chemicals and waste, including unwanted pharmaceuticals.
- There is an stablished chemicals control and management unit.
- The NaFRA, MoA, PBSL and Sierra Leone Standards Bureau also have components of chemicals management.

- There is a national list of approved, restricted and banned chemicals and pesticides.
- Guidelines exist for the management of chemicals:
- The regulatory framework has improved – in the new EPA Act (2022), section 36(1) specifically bans the importation into Sierra Leone of hazardous chemicals, including banned chemicals, and strengthens the penalties for noncompliance.
- Integrated pest management exists.
- There is environmental monitoring of licensed companies and parameters are monitored on the basis of WHO, IFC and SLSB standards, including:
- quarterly and biannual monitoring and annual audits.
- Checklist to assess the management of chemicals is available:
- and is distributed to sectors dealing with chemicals.
- There is a National Inventory for Obsolete Chemicals and Associated Waste:
- this applies nationwide and uses the ECOWAS standards and procedures.
- There is a CBRN national action plan.
- Technical working groups and committees are established
- The national pesticide policy and ACT has been validated.
- A National Pesticide Management Committee has been established.

Challenges

- Limited human and technical capacity for detection of toxins and poisons.
- No guidelines for surveillance, assessment and management of toxins and poisons.
- No mechanism for surveillance of chemicals, toxins and poisons and other hazardous substances – including in environmental samples (air, water, soil).
- Lack of funding for the sector.
- Lack of effective collaboration between stakeholders.

CE2. Enabling environment in place for management of chemical events – Score 1

The JEE team and members state counterparts reached a consensus score 1 for this indicator.

Despite several good practices and some essential legislations, many key legally binding frameworks and action plans for the management of chemical events are still in progress or not yet developed preventing the instauration of an enabling environment. Mainly, Sierra Leone still requires effective communication and collaboration mechanisms among the sectors responsible for chemical safety, including health, occupational health, emergencies, environment, transportation and safe disposal, agriculture/veterinary, as well as industries.

During the JEE exercise 2023, the Governmental team managed to identify the most essential gaps, and to propose the most urgent actions to undertake to reach very quickly a sufficient preparedness and response level. Below are the main strengths and weaknesses.

Strengths

- Lead in Paints Regulations, Integrated Air Quality and Pollution Regulations, Hazardous Chemicals and Pesticides Control and Management Regulations, Prohibition of Ozone Depleting Substances, Toxic and Hazardous Substances Regulations.
- Regulatory framework improved given more room for the fast ratification of regulations.
- Currently carrying out an assessment of the regulatory framework for chemicals and waste management with a view to developing a national chemicals and waste profile – funded UNEP project.

- Five teams of national experts established to assess the following thematic areas: Legal framework, Government institutions, public awareness raising, Private sector and National background.
- Sierra Leone is a Party to all Multilateral Environmental Agreements on chemicals.
- Ratified the BRS Conventions, Minamata convention on Mercury (MCM) , SAICM, Montreal Protocol, Bamako Convention, ECOWAS Regulations, etc.

Challenges

- Coordination is ineffective.
- There is limited public awareness or IEC materials on risk related to chemical events/incidents.
- Sierra Leone is not yet party to ILO resolutions 170 and 174 resolutions.
- Inspection and monitoring of chemical events/incidents are ineffective.
- There is a lack of funding.

Recommendations for priority actions

- Develop an MOU on chemical events surveillance and response, outlining major stakeholders, their roles and responsibilities, coordination and accountability mechanisms.
- Propose a sustainable funding strategy for the following:
  - » Improve capacity (trained personnel, laboratory, reagents) to detect poisons and toxins and strengthen laboratory diagnostic capacity to confirm chemical events.
  - » Build the capacity of technical staff at national and district levels along the chemical event chain. Identify involved responders (mentioned in first bullet point) at local, district and national levels. These could be paramedics, fire fighters, civil defence or other responders, but also emergency room medical personnel and high-level crisis managers and coordinators. For all identified responders, design training curricula adapted to each group's competency standards, design a training strategy, and implement the training. Equipment needed for each role should be also identified, purchased and used in the capacity-building programme. Joint in-person exercises and simulation exercises would ensure the quality of the capacity-building programme.
  - » Strengthen awareness-raising in risk communication for chemical events at national and district levels (design risk communication messages for different target audiences, such as the general public, public health stakeholders, and groups mentioned in point b above). An awareness campaign strategy should be designed and implemented for prevention in high-risk areas, and for response after the event occurs.
- Develop and/or finalize the development of:
- a national chemicals emergency, preparedness and response plan; and
- a strategic public health plan to strengthen the assessment and management of chemical incidents/emergencies.

RE. Radiation emergencies

Introduction

To counter radiological and nuclear emergencies, timely detection and effective response towards potential radiological and nuclear hazards/events/emergencies are required in collaboration with the sectors responsible for radiation emergency management.

Target

States Parties should have surveillance and response capacity for radiological emergencies and nuclear accidents. This requires effective coordination among all sectors involved in radiation emergency preparedness and response.

Sierra Leone Level of capabilities

As a result of an International Atomic Energy Agency (IAEA) review, Sierra Leone enacted its foundational legislation on radiation safety through the Nuclear Safety and Radiation Protection Act of 2012, as well as through this legislation's subsequent amendments in 2022. Sierra Leone has also adopted IAEA guidelines.

In Sierra Leone, authority rests in the Nuclear Safety and Radiation Protection Authority (NSRPA) for leading the management of radiation emergencies. The Ministry of Energy is the designated national focal point for chemical, biological, radiological and nuclear matters, and the NSRPA has focal points identified in other ministries, in addition to having its own focal point designated for interaction with the international community and with domestic stakeholders. Technical support for radiation safety and radiation emergency management functions comes from multiple international sources. Sierra Leone relies on the IAEA to provide technical support and training to the NSRPA, while WHO provides technical advice on health impacts.

Additional assessments have been conducted over the last five years – such as for the Sierra Rutile Project environmental, social and health impact assessment in 2018, which evaluated the impacts of tailings from major mining operations. The NSRPA also conducts annual inspections of medical sources within the country, but no comprehensive baseline public health assessment with regard to radiation safety has been conducted.

Although initial documentation has been made of national policies and strategies for detection, assessment, and response and recovery operations related to radiation emergencies, response plans and regulations are still in unpromulgated form, and SOPs for implementing these policies are limited to basic principles for use by first responders. Limitations also exist in the domestic capacity for training staff in competencies relevant to radiological and nuclear emergencies, and in laboratory capacity.

Indicators and scores

RE1. Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies – Score 2

This score is based on the existence of national policy in the form of the relevant legislation governing nuclear safety and radiation protection that has recently been updated, as well as three strategy documents that respectively address detection, assessment and response to radiation emergencies. In addition, Sierra Leone has mechanisms in place for radiation monitoring through the NSRPA, and focal points in place in other ministries, to include within the health sector in order to enable the notification of a PHEIC.

Strengths

- The Nuclear Safety and Radiation Protection Act was enacted in 2012, along with the amendments of 2022.
- A national policy and strategy for the detection, assessment and response to radiation emergencies have been developed.
- SOPs have been developed in some functional areas.
- Laboratory surge capacity can be accessed through Ghana.

Challenges

- Ratification of the Early Notification and Assistance in case of a Nuclear Emergency (1986) Convention is needed.
- Validation and implementation of national policies and strategies need to be completed.
- SOPs need to be enhanced to identify who performs specific actions and how, and should be evaluated through exercises.
- Public awareness of radiation safety and emergency management issue needs to be pursued.
- Dedicated pre-designated funding for radiation emergency preparedness and response activities has not been identified.
- No inventory of health-care facilities to handle radiation emergencies exists.
- There is no stockpile of medical countermeasures.
-

RE2. Enabling environment in place for management of radiological and nuclear emergencies – Score 2

This score is based on the statutory designation of the NSRPA as the competent authority for management of nuclear and radiological events, and the identification of a focal point for communication and coordination on such events within the health sector.

Strengths

- A domestic interagency TWG has been established for radiation emergencies.
- A radiation emergency response plan has been drafted.
- Technical staff of the NSRPA hold daily technical meetings on issues related to radiation safety and preparedness.
- The NSPRA conducts regular safety assessments of regulated facilities to ensure compliance with requirements.
- Arrangements exist with Ghana and Nigeria for the education of radiation professionals.

Challenges

- Monitoring of food and consumer products for radioactive contamination is limited.
- Gamma and alpha spectroscopy capacity is limited; laboratory capacity for monitoring for internal contamination does not exist.
- Education and training of government staff in radiation safety and emergency management does not exist within the domestic education system.
- Emergency response plans, regulations and procedures are mostly still in draft form.
- There is no exercise programme to test capacities for the management of radiation emergencies.

Recommendations for priority actions

- Train – to IAEA and WHO accepted competencies through targeted training and exercise opportunities – the first responders and technical personnel who are expected to engage in radiation emergency response activities.
- Identify a dedicated budget to support preparedness and response to radiation emergencies.
- Promulgate drafts of current policies, plans and procedures related to radiation emergencies, test them through discussion and operations-based radiation response exercises, and implement a continuous improvement programme for these policies, plans and procedures.
- Develop detailed SOPs for key radiation emergency response functions, building on the responsibilities and concepts of operation outlined in existing policies, plans and strategies.
- Expand the capacity of radiation monitoring mechanisms in the food and consumer products sector through additional staffing and equipment.

Annex: JEE background

Mission place and dates

Freetown, Sierra Leone; 27 February to 3 March 2023.

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Relevant documentation

01. Legal instruments

- Constitution of Sierra Leone, 1991
- Law Reform Commission Act of 2017
- Local Government Act of 2004
- Local Government Act of 2017
- Animal Health Bill
- Animal Welfare Bill
- The Public Health Act of 1960
- The Public Health Bill of 2022
- Gender Equality and Women's Empowerment Act of 2022
- Environmental Protection Act of Sierra Leone 2022
- Nuclear Safety and Radiation Protection Act 2022
- Pharmacy and Drug Act 2011
- National Security and Central Intelligence Act of 2002
- National Ebola Response Center (NERC)2014 Action Plan
- National COVID-19 Emergency Response Centre (NaCOVERC) 2022 Action Plan
- Disaster Management Agency Act of 2022
- One Health Governance Manual
- Final Report of the Technical Working Group for the Review of the Public Health Act of 1960
- MOHS Assessment on Gender Mainstreaming Gaps Within the MOHS

02. Financing

- 2017 Amended Local Government Act
- NAPHS 2018–2022
- The Finance Act 2021
- Sierra Leone Medium-Term National Development Plan 2019–2023
- Animal Health Bill 2020
- Constitution of Sierra Leone 1991.

03. IHR coordination, national IHR focal point functions & advocacy

- After-action review report: Tonkolili Lassa Fever Outbreak – Review date: 20 February 2020;
- Covid-19 Intra-action review report;
- IHR-NFP composition;
- IHR NFP notification email to WHO under Article 6 of IHR – December 2021;
- Multi-hazards Public Health National Emergency Response Plan – 2019;
- National Action Plan for Health Security, 2018–2022;
- National One Health Governance Platform; Governance Manual – 2018;
- Report on IHR advocacy to Parliament – 2019;
- Report of the Sierra Leone Joint External Evaluation (JEE) Self-Assessment Scorecard for 2021;
- Standard Operating Procedures for IHR National Focal Point – 2019;
- State Party Annual Report (SPAR) 2021;
- Strategic Tool for Assessing Risks (STAR) Report;
- Threat and Hazard Identification and Risk Assessment (THIRA) Report;
- Weekly public health preparedness update.

04. AMR

- AMR National Strategic Plan (2018–2022).
- AMR TWG terms of reference.
- National (costed) action plan for combating antimicrobial resistance (2021–2022).
- Antimicrobial consumption and use surveillance strategic plan (2021–2025).
- National AMR surveillance and AMU monitoring strategy for animal health (2022–2026).
- AMR surveillance strategic plan (2022–2026).
- GLASS certificate (2021).
- National IPC guidelines (2022).
- Essential medicines list (2021).
- Pharmacy and drug Act (2001).
- Situational analysis of AMU and AMR in the food and agriculture sector (2022).
- Point prevalence survey report (2022) and antibiotic consumption study (2017–2019).
- National pesticide policy.

05. Zoonotic disease

- One Health Strategic plan 2019–2023.
- One Health governance manual.
- MOU or other similar agreement between the Ministry of Health, veterinary authorities and other relevant stakeholders (including private stakeholders) related to the surveillance and control of zoonotic diseases.
- Joint Risk Assessment avian influenza and rabies.
- Prioritization of zoonotic diseases report.
- Performance Veterinary Services (PVS) evaluation 2012 and 2022.
- National Bridging Workshop (2018) and road map (2018 updated 2022).
- Technical Guidance for Integrated Disease Surveillance and Response (IDSR) 2022.
- Sierra Leone Epidemic-Surveillance Network of Animal Diseases Strategic Plan 2021–2025.
- Table-top Simulation Exercises on Preparedness and Response to Highly Pathogenic Avian Influenza
- workshop report 2022.
- National Emergency Preparedness and Response plan for the Prevention and Control of Highly Pathogenic Avian Influenza in Sierra Leone 2022.
- Sample of weekly report of the EPRRG meeting, May 2022.
- After-action review report: Tonkolili Lassa Fever Outbreak 2020.
- Anthrax Outbreak Response Incident Action Plan.
- Report on WAHO evaluation of one health 2021.
- EVD preparedness and response plan.
- Sample SITREP - anthrax outbreak.

06. Food safety

- List of priority foodborne diseases and priority foodborne hazards (chemical and microbiological).
- Food and processing facilities inspection checklist.
- Training reports.
- Updated of food safety staff list and contacts.
- Technical guidelines for the Integrated Disease Surveillance and Response (IDSR).
- Investigation reports.
- ToR for the technical working group (TWG) for food safety.
- National Food Safety and Quality Control guidelines.
- List of INFOSAN contact points.
- List of national food safety stakeholders.
- Minutes of the Food Safety TWG and INFOSAN meetings.
- Report of the routine activities.

07. Biosafety & biosecurity

- National Guidelines for the Sierra Leone Hub and Spoke Specimen Transport System (2022).
- National Clinical Laboratory Supportive Supervision Report (2022).
- Integrated Specimen Transport Annual Report (2021).
- National Biosafety and Biosecurity Policy and Guidelines (draft).
- Priority Diseases of Sierra Leone (draft).
- Assessment deport: Transfer of residual Ebola virus samples to the National Biobank (draft).

08. Immunization

- National Immunization policy 2016 and updated 2023.
- COVID-19 National Deployment and Vaccination Plan (NDVP).
- National Vaccine Monitoring Assessment report.
- National Immunization Performance report 2022.
- Cold Chain Inventory 2022.
- Effective Vaccine Management Assessment 2022.

09. National lab system

- National Laboratory Strategic Plan (2022–2027).
- National guidelines for integrated laboratory specimen referral.
- National policy for integrated specimen referral.
- National Laboratory Quality manual for human (ISO 15189)-2022–2023.
- There is also a drafted quality manual for the animal sector awaiting finalization (ISO 17025).
- National testing algorithm.
- National laboratory mapping.
- Basic package of essential health care.
- Post Market Validation document.
- National Biosafety and Biosecurity Policy and Guidelines (draft).

10. Surveillance

- Samples of surveillance reports used by public health decision-makers in the countries.
- Plans for enhancing early warning surveillance system, including IBS, EBS and CBS.
- WOAH reports (WAHIS).
- Surveillance databases and forms.
- National RRT guidelines and SOPs.
- National weekly epidemiological bulletin.

11. Human resources

- National Rapid Response Team SOPs.
- A Rural Retention Action Plan 2019–2029.
- A Human Resources for Health (HRH) strategic plan (2017–2021).
- The job descriptions for various career tracks and positions (scheme of service 2019).
- A database for emergency response workers.
- A personnel deployment plan.
- A surge personnel deployment plan.

12. Health emergency management

- Threat Hazards Identification Risk Assessment Report (THIRA).
- 2016 STAR report.
- 2019 Vulnerability Risk Assessment Mapping report.
- 2022 STAR report.
- THIRA tool used for the district-level risk assessment in August–September 2022.
- EVD readiness plans.
- Monkeypox readiness assessment report.
- Marburg Incident Action Plan.
- Cholera Elimination/Contingency plan.
- COVID-19 Incident Action Plan.
- Lassa fever table-top simulation exercise, July 2022 report.
- Contingency plans for 10 priority risks.
- Concept of Operations, ConOps 2020.
- Multi-hazard Public Health National Emergency Response Plan.
- Rapid Response Team and guidelines.
- Medical countermeasures response plan.
- Logistics IAR report – COVID-19.
- Emergency supply chain playbook.
- Sierra Leone Personnel Deployment Plan.
- Situation awareness reports.
- Sierra Leone Pandemic Influenza Preparedness Plan.
- Adopted IMS structure.
- IAR and AAR Reports (COVID-19, Lassa fever, Wellington fire disaster).
- Sierra Leone Ethics and Scientific Review Committee.
- Research Policy (validated).
- National Research for Health Policy (validation completed).
- Pandemic response plan.
- EMT awareness-raising report for Sierra Leone.

13. Linking public health & security authorities

- Military Aid to Civil Authorities: a guide to operations in Sierra Leone.
- Standard Operating Procedures for COVID-19 screening at land borders.
- Freetown International Airport COVID-19 Business Restart Standard Operating Procedures.
- Technical Resolution Points between Sierra Leone and Guinea after Cross-Border Coordination Meeting, September 2022.
- Report on a Local Round Table Cross-Border Review Meeting with Liberia and Guinea border officials from Kambia, Kailahun and Pujehun District, July 2022.
- Joint Risk Assessment for Zoonotic Diseases, Workshop Report, July 2021.
- CBRN workshop reports.
- Multihazards Public Health National Emergency Response Plan (NERP), 2019.

14. Health services provision

- Sierra Leone basic packages of essential health services 2015–2020.
- Institutions and programmes in Sierra Leone.
- The Pharmacy and Drug Act 2001.
- Medical and Dental Council of Sierra Leone (MDCSL) self-assessment report.
- Standards for Accreditation of Basic Nursing and Midwifery Educational.
- The National Emergency Medical Service – NEMS.
- COVID-19 guidelines.
- National Cholera Elimination Plan (NaCEP) 2022–2026.
- National Action Plan for Health Security 2018–2022.
- Sierra Leone basic packages of essential health services 2015–2020.
- Report: Strategic risk assessment for health emergency planning in Sierra Leone (STAR tool).

15. Infection prevention & control

- Draft national IPC action plan (to be completed).
- Annual workplan.
- National IPC guideline.
- Protocols for surgical site infection monitoring.
- WASH in health-care facilities guidelines.
- IPC assessment reports.
- UNICEF and WHO JMP 2021 report at: https://washdata.org/.

16. Risk communication & community engagement

- Government of Sierra Leone One Health RCCE Strategy.
- COVID-19 Vaccination Strategy.
- Anthrax RCCE Strategy.
- Marburg Preparedness RCCE Strategy.
- Guide to utilize the RCCE rumour management platform.
- Community Led Action Manual.
- Minuets of the National One Health RCCE TWG Meeting.
- Annual One Health RCCE plan.
- Compendium that includes over 28 files, folders and links.

17. Points of entry & border health

- Port health staff list (to be completed).
- SOPs (COVID-19, referral, human remains, food, screening of ill travellers etc.).
- IHR Core capacity assessment report for PoEs.
- Public health emergency contingency plans for airport, seaport and ground crossings.
- Attendance at and report on the training of PoE stakeholders and formation of cross-border committee.
- TOR for PoE Technical Working Group.
- Guidelines and SOPs (travellers screening protocol).
- Population Connectivity Across Borders (POCAB) report (to be completed).
- List of the 11 non-designated PoEs integrated in national surveillance (to be completed).

18. Chemical events

- EPA Act 2022.
- SOPs for disposal of: a) pharmaceutical waste, b) chemical waste, c) clinical waste and d) expired food.
- Guidelines for: a) management of chemicals, b) a pesticides policy, c) harmonized list of chemicals.
- ECOWAS Pesticides dossiers and standards.
- National Implementation Plan for the Stockholm Convention.
- National Action Plan for the Rotterdam Convention.
- National Action Plan for the Artisanal and Small-scale Gold Mining Sector.
- Minamata Initial Assessment.
- National Inventory of Obsolete Pesticides and Associated Waste Report.
- National Fertilizer Policy and Act.
- Seed Policy and Act.
- The Integrated Pest Management Strategy.

19. Radiation emergencies

- The Basic Radiation Protection Regulations, 2015.
- Nuclear Safety and Radiation Protection Authority Draft Regulations on Emergency Preparedness and Response for Authorized Persons, undated.
- Ministry of Health and Sanitation Technical Guidelines for Integrated Disease Surveillance and Response, January 2020.
- National Policy and Strategies for the Assessment of Radiation Emergencies in Sierra Leone, undated.
- National Policy and Strategies for the Response and Recovery of Radiation Emergencies in Sierra Leone, undated.
- Nuclear Safety and Radiation Protection Act, 2012.
- Government of Sierra Leone Public Health Ordinance, 1960.
- Radiation risk-mapping performed by the Nuclear Safety and Radiation Protection Authority, undated.
- Sierra Rutile Project Area 1 Environmental, Social and Health Impact Assessment, January 2018.
- Nuclear Safety and Radiation Protection Authority Radioactive Waste Management Policy and Strategy for the Republic of Sierra Leone, 2021.
- Sierra Leone Regulations for Radioactive Waste Management, undated.
- Sierra Leone National Emergency Response Plan for Radiological Accident, undated.
- Sierra Leone Standard Operating Procedures for First Responders to a Radiological Emergency, undated.


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