Republic of Sudan

Federal Ministry of Health

&

World Health Organization

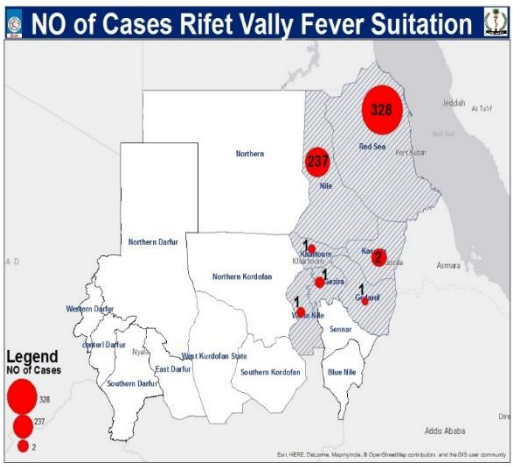
Rift Valley Fever outbreak After Action Review

7 September 2020

1. EXECUTIVE SUMMARY

Starting from 25th of September 2019 up to 25 January 2020 the outbreak affected two states (Red Sea &River Nile) in addition to 6 sporadic cases in more 5 states. The total number of cases were 571 with two deaths. Sixty seven samples out of 160 were tested positive to RVF by PCR test (41.9%).

The RVF outbreak started in Red Sea (25th September 2019) and River Nile States (5th October 2019). About 576 suspected cases of RVF, with 7 deaths (CFR=1.2%). Of the reported cases, 160 (28 %) were laboratory tested; of these 68 (42.5%) were confirmed positive for Rift Valley fever by PCR test.



The start of the epidemic was in epidemiological week 37 2019 and the inclusion of the RVF outbreak response operation management in the ongoing National Emergency Operations Centre (EOC) was on 25th September 2019.

On 25 September 2019, 47 cases presented with high fever, headache and joints pain also 2 deaths were reported to FMOH from Red Sea State , Elgounob Olieb locality ,Tohashban village .Abortions among animals were reported. All Five samples sent to National Public Health Laboratory were positive to RVF by PCR tes

On the 4th of October 2019 FMOH IHR National Focal Point reported confirmed RVF cases to the Eastern Mediterranean Regional Office (EMRO) - World Health Organization (WHO) through WHO Sudan Country Office

On 3rd November 2019, the first follow up report sent to OIE. Number of 16 cases of abortions and 3 deaths in goats, 37 abortions and 5 deaths in sheep in Fetwar, Barbar, River Nile State. RVF infection confirmed by ELISA test.

Reactive integrated vector management activities were conducted in the affected 2 states beside other high risk states and states reported sporadic or imported cases (White Nile, Gadaref, Kassalla and Gazera states).

Some sporadic human cases were reported from different states but the field investigations by Ministry of Animal Resources didn't report any animal cases in these foci.

Epidemics ended at epidemiological week 4, 2020 and declared over on 22nd January 2020. Early set up of EOC ensured quick effective coordination however; most high-risk states partially implemented their RVF preparedness and response plan.

The purpose of the to RVF and other infectious outbreaks. The participating organizations for the RVF AAR included FMoH/FMoAR officers, State Epidemiologists, Disease Surveillance and Notification Officers from the affected States, State ministries of animal resources, DGs of health from RSS and RNS. There were also representatives from Ministries, Departments and partner representatives from World Health Organisation (WHO), University of Khartoum, roosters of expertise on Viral Haemorrhagic Fever and state physician's representatives. This is beside the senior WHO management and the Federal Mister of Health.

The meeting facilitated using the WHO after Action Review manual. The meeting sessions conducted using via power point presentations, group discussions and plenary discussions. Participants grouped into thematic areas namely Coordination,

Surveillance, Case management, Risk communication and Social mobilization, Laboratory and IVM & IPC. Each group identified best practices, challenges and drew up lists of key activities to be carried out. Plenary sessions also incorporated opportunities for questions and answers.

The group discussions on the best practices in the different thematic areas were mostly on, importance of coordination and rapid response team (RRT), good partnership and collaboration, timely reporting, effective case management, prompt testing and release of laboratory results. Others include procurement and prepositioning of medicines and health consumables, radio and social media to communicate to the public. Discussions also covered availability of sample collection protocol and sample containers.

As a follow-up to this report, WHO with FMoH will activate the One Health forum which includes (FAO, WHO, FMoH, FMoAR, other professionals with a range of expertise), the aim of the forum is to effectively coordinate, detect, respond to, and prevent outbreaks of zoonoses and food safety problems, epidemiological data and laboratory information should be shared across sectors.

Table of timeline of key milestones

KEY MILESTONES	DATES

Ministry of Live stock reported abortion among animals from Berber locality locality in RN State	**25th September 2019**
Date of start of outbreak (Red Sea State)	**25th September 2019**
date of detection of outbreak or event	**28th September 2019**
date of outbreak or event intervention	**29th September**
Date of verification of outbreak event	**29th September**
date of laboratory confirmation	**29th September 2019**
Confirmation from National veternarian lab (VRL)	**2nd October 2019**
Date of public communication	**3rd October 2019**
Notification to the WHO under the IHR	**4th October 2019**
Date of Start of the outbreak in River Nile State	**5th October 2019**
Date of the report to the OIE by the animal sector	**13th October 2019**
Date of deceleration of the end of outbreak in animal sector	**16th November 2019**
Date outbreak or event declared over	**22nd January 2020**
Date of official declaration to WHO	**12th April 2020**
AAR timeline start	**20th August 2020**
AAR timeline end	**7th September 2020**

2. BACKGROUND ON EMERGENCY

The RVF outbreak started in Red Sea and River Nile States in 28th of September 2019. About 571 suspected cases of RVF, with 11 deaths (CFR=1.9%). Of the reported cases, 160 (28 %) were laboratory tested; of these 68 (42.5%) were confirmed positive for Rift Valley fever by PCR test.

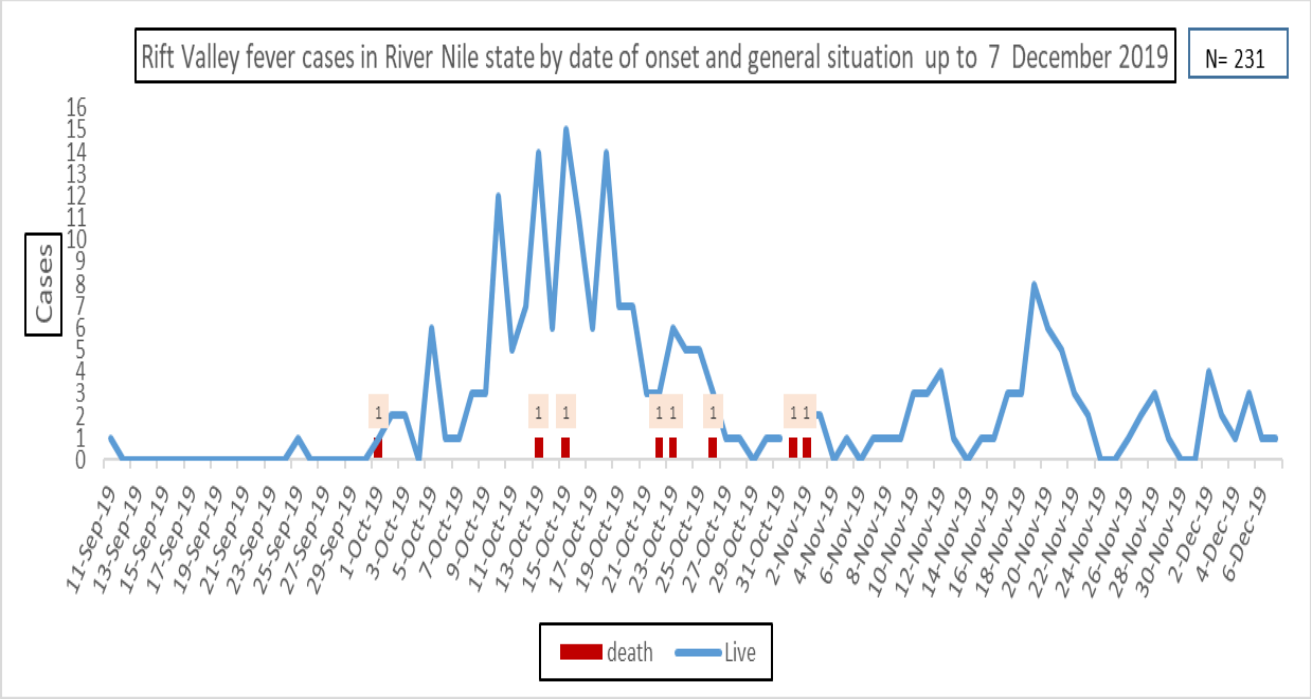
The start of the epidemic was in Epidemiological week 37, 2019 and the National EOC activated on 28th of September 2019. The RVF epidemic ended at epi week 4, 2020.

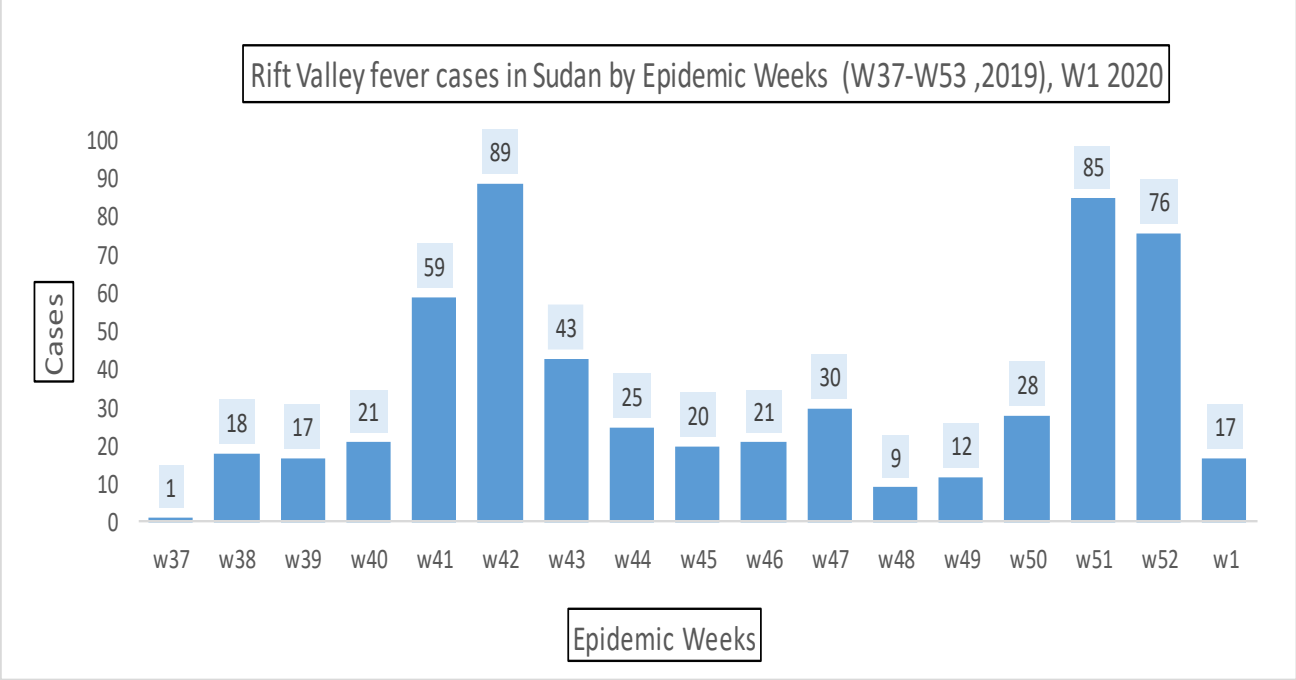
Early set up of Emergency Operations Centre (EOC) using the Incident Management System (IMS) ensured quick effective coordination however; most high-risk states partially implemented their RVF preparedness and response plan.

Some sporadic human cases reported from different states but the field investigations by Ministry of Animal Resources did not report any animal cases in these foci.

On the 4th of October 2019 FMOH IHR National Focal Point reported confirmed RVF cases to the Eastern Mediterranean Regional Office (EMRO) - World Health Organization (WHO) through WHO Sudan Country Office. On third of November 2019 the first follow up report was sent to OIE. Number of 16 cases of abortions and 3 deaths in goats, 37 abortions and 5 deaths in sheep in Fetwar, Barbar, River Nile State. RVF infection confirmed by ELISA test.

On 16 October Ministry of agriculture and land Reclamation, General Organization for Veterinary services addressed MoR temporary suspension of livestock export from SUDAN.


Rift Valley fever cases in River Nile state by date of onset and general situation up to 7 December 2019
N= 231
Cases
death
Live


Rift Valley fever cases in Sudan by Epidemic Weeks (W37-W53 ,2019), W1 2020
Cases
Epidemic Weeks
w37
w38
w39
w40
w41
w42
w43
w44
w45
w46
w47
w48
w49
w50
w51
w52
w1

3. SCOPE AND OBJECTIVE OF REVIEW

During the AAR, a number of response functions has been identified and reviewed. Functions reviewed included surveillance, operational or intersectoral coordination EOC(s); infection prevention and control; disinfection and waste management; risk communications; engagement of communities; and coordination at national and sub-national (intermediate) level.

Objectives:

- Objective observation: establish how actions actually implemented, rather than how they would ideally have happened according to existing plans and procedures.
- Analysis of gaps/best practices and contributing factors: identify gaps between planning and practice; analyze what worked and what did not work, and why.
- Identification of areas for improvement: identify actions to strengthen or improve performance, and determine how to follow up on them.

4. METHODS

The excercise started early by Key informant interview with senior offecials.

1. Federal minster of health
2. Federal minster of animal resources
3. WHO emergency team lead
4. FAO
5. DG of emergency in Federal minstry of health
6. DG of health in red sea state and river nile state.

During the AAR:

The method adopted included power point presentations, group discussions and plenary discussions.

The Power Point Presentations used to highlight what happened during the outbreak both at the National and at the State level.

The Group Work was done in eight groups. Participants were assigned based on their primary areas of involvement during the response. The focus of each group was to identify best practices (strengths), challenges (weaknesses) and recommendations including activities for future action. The Plenary Presentations was done after the group work and it involved a representative from each group presenting what was done and inputs were made thereafter.

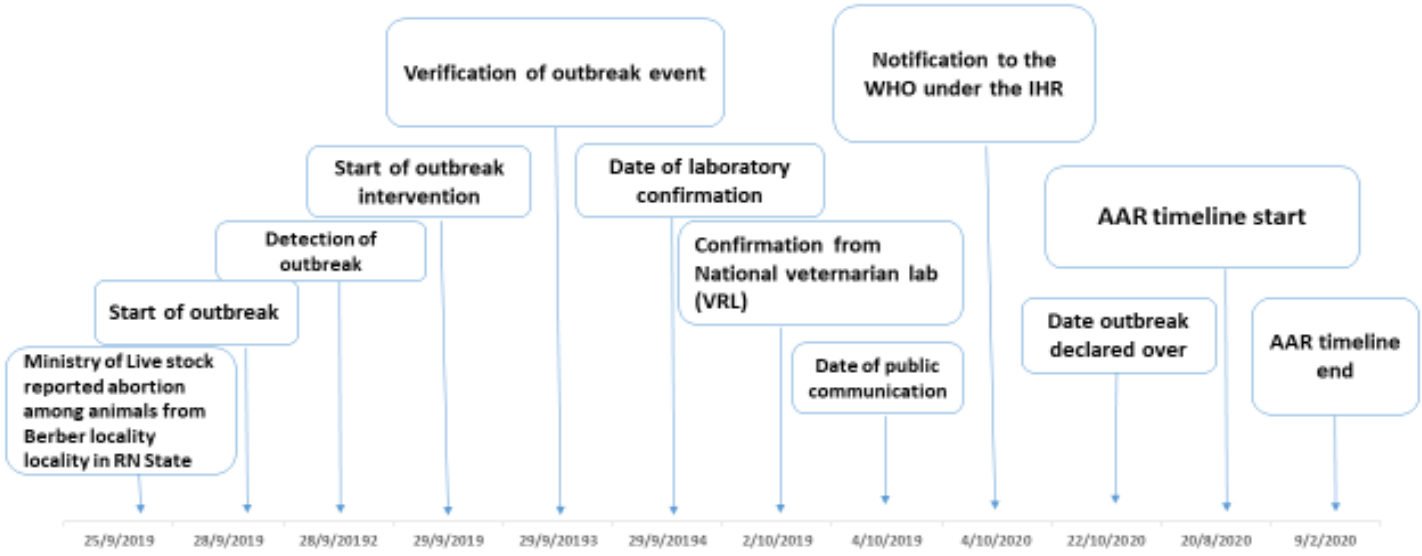
.The participating organizations in the RVF AAR included FmoH, FmoAR World Health Organisation (WHO), University of Khartoum and state physician's representatives.

5. FINDINGS

The group discussions on the best practices in the different thematic areas were mostly on, effective RRT, timely reporting, effective case management, prompt testing and release of laboratory results, medicines and medical health consumables, radio jingles and social media to communicate to the public, availability of sample collection protocol, sample containers and vacutainers. The six technical groups discussed extensively, and they were all guided by trigger questions.

5.1 **Timeline of outbreak**:

The Rift Valley Fever after Action Review exercise included the development of a timeline which is highlighted in the below table and graph.



5.2 Coordination:

Coordination function discussion centered on what were in place prior to the response as well as identifying the best practices and challenges that occurred during the outbreak as it related to coordination. Rift valley Fever preparedness and response plan, National Rift valley Fever guideline and surveillance system were in place at the states. Daily coordination meetings held at federal level and in the two affected states (Red Sea and River Nile states), supplies and other medical consumables prepositioned by the national team, in the states as part of the flood preparedness actions. At the National level, joint RVF technical Working Group established immediately after the deceleration of the outbreak involving (FMoH, FMoAR, WHO and FAO).

Bi-regional initiative with neighboring countries as part of Sudan commitment to the global health security agenda, Peace and development initiated, Khartoum deceleration between the countries was signed on 2017. It is aimed to closely discuss, analyses and strengthen the collaboration in between the technical bodies to address challenges collectively and on one-to-one basis. Planned bilateral meeting to discuss RVF response in Sudan with Egypt was supposed to be held. Another example of the implementation of the Khartoum declaration is the communication with Libya in regards to the RVF cases reported in Libya from Sudan.

Best Practice, Impact and enabling factors

BEST PRACTICES	IMPACT(S)	ENABLING FACTORS
Timely activation of the EOC	1. Effective coordination 2. Resource mobilization 3. Public Awareness through the instrument of EOC via Press briefing/Radio and TV	1. Existing EOC structure, trained staff and linkage with the state level. 2. Existing RRT at National and in States. 3. Timely notification of outbreak.
Official notification and declaration of the event (transparency)	Early initiation of response Support from stakeholders Enhance public awareness	New approach and new government
Joint investigation and response between MoAR and FMOH	Help control of the outbreak Gained experiance in joint collaboration between the human and animal health	More commitment from both sectors Public pressure due to economic sanctions necessitate colaboration and engagement of senior officials from both sectors

Challenge, impact and limiting factors

CHALLENGES	IMPACT(S)	LIMITING FACTORS
Lack of coordination during notification to international organizations between Health and Animal	Affected national economy since other countries refuse to import animals from Sudan due to reporting	There was no SoP on threshold for RVF There should be joint SoP for notification
Lack of funding the response	Delay in containment	No committment for compensation for loss of animals

Limited support from UN and other agencies (donors)	Delay and failure to contain the outbreak	Limited information sharing (confined within MoAR and FMOH and WHO and FAO) No sharing of the information to the public to garner support from other stakeholders

5.3 Surveillance

Surveillance function identified availability of human resources (e.g. trained surveillance staffs) at both national and state, reporting tools, Line list and Case Investigation Form (CIF) as being available prior to the response A functional Rapid Response Team (RRT) was available at the National level as well as in the states. Working with partners as well as an existing reporting system was also in place.

Trained human resources, Availability of diagnostics facilities at the national level, Implementation of Community Based Surveillance (CBS) in Red Sea state in 2017 considered as preexisting resources. Additionally Data flow steps, timelines of reporting plus methods for reporting and analysis throughout different administrative levels clearly explained in surveillance guidelines

Best Practice, Impact and enabling factors

BEST PRACTICES	IMPACT(S)	ENABLING FACTORS
Activation of Zero reports at all states	1. Health facilities in addition to sentinel sites are sharing daily reports 2. Increased sensitivity of surveillance in searching for suspected cases	Commitment of stake holders and policy makers in addition to availability of policies
Timeliness of reporting. 88.4% of reports received within 24 hours	Timely sharing of case based surveillance data	Availability of: 1. Trained staff 2. Reporting forms

from lower levels to the national		3. Methods of reporting including; phones at sentinel sites, surveillance email and number for immediate notification at national level
Supportive role of the partners	Impact 1:Technical and oprational support Impact 2:Timely response	Close Cordination between MoH and Partners Regular meetings

Challenges, impact and limiting factors

CHALLENGES	IMPACT(S)	LIMITING FACTORS
High turnover among surveillance staff at all levels	Influence the quality of work in terms of; timely reporting, completeness of data and analysis	Discouraging work environment Incentives issues
Suboptimal availability of resources to undertake surveillance and early warning	Affects accurate and timely reporting of suspected cases which ultimately affects response	1 Guidelines are not available at all heath facilities. 2. Lack of phone lines that supports the available network phone 3. Unreliable internet service 4. Insufficient training of health facility staff at sites not covered by sentinel/routine surveillance 5. Limited logistics to conduct MoAR Surveys 6. Lack of kits to conduct MoAR Surveys
Refusal of sample collection by some of animal owners	Delayed sample collection and diagnosis	False beliefs that specimen collection process will negatively affect the animals health

5.4 Response and case management:

Prepositioning of some medicines, medical consumables and laboratory supplies at the treatment facilities by FMoH and identifying designated treatment centers for RVF in the affected states occurred prior to the outbreak. Multi hazard preparedness and response plan including vector borne diseases was in place as well as affected states, Case definition was existing. Clinician's high index of suspicion played a key role in diagnosing cases early. This is partly due to the distribution of the updated RVF Case Management Guidelines, which were available at health treatment facilities.

Best Practice, Impact and enabling factors

BEST PRACTICES	IMPACT(S)	ENABLING FACTORS
Rapid response	Early detection and responses	Trained RRT for VHF was available,
Good coordination with related sectors and partners at state level after the notification of the outbreak	One health planned developed , , regularity task force with very short interval, coordination with SMOH and SMoAR, and with community leader	Commitment related bodies.
Community participation and coordination	Behavior change lead to control of outbreak , raised the alert	Involvement of personnel who deliver the message by local language, and use of key persons.
Establishment of of isolation centers at affected area	Availing free of charge services to the population at their area, reduce the cost of travelling , reduce the risk transmission	Some of the staff trained are from the community, The building of the building

Challenges, impact and limiting factors

CHALLENGES	IMPACT(S)	LIMITING FACTORS
Rapid Turnover and changing environment	Delaying the response and affecting the quality	Multi factorial (lack of incentives, lack of motivation, political approach)
Hard to reach areas	Affecting timely response and reporting and monitoring	Financial limitation
Financial challenge	Affect all the component of the response	Lack of fund, country situation economic crises,,
Animal movement restriction	Increase the transmission of the RVF	compensation of animal owners
No health facility prepared for critically ill patient	Increase avoidable mortalities related to RVF	Financial limitation

5.5 Risk communication and social mobilization:

Risk communication identified existence of a risk communication plan with partners and collaborating agencies as well as in most states, existence of the coordination manual, Risk communication Strategy, Risk communication action plan and National risk communication plan to have played a key role during the outbreak response. Effective coordination, media engagement, deployment of IEC materials were also good practices identified during the outbreak. Some major challenge identified like insufficient human resource (Communication officers) to carry out risk communication activities as planned.

Best Practice, Impact and enabling factors

BEST PRACTICES	IMPACT(S)	ENABLING FACTORS
Rapid risk communication response	Decrease of active cases	1. Presence of good coordination between stockholders 2. Presence of well-trained team 3. Presence of routine activities as part of Chikungunya and Dengue fevers 4. Presence of IEC messages bank 5. Community net work
Direct communication for behavior change (home visit and group discussion)	Awareness raised on how to protect them self and adopt healthy behavior	1. The communication done jointly 2. Community net work 3. Messages delivered by local language
Monitoring of the activities of the interventions	Increase the reach and converge of the messages	1. Daily meeting 2. Survey 3. Supervision (Federal and states)

4. Presence of an effective coordination mechanism	1. Joined implementation of activities 2. Effective utilization and deployment of resources 3. Strengthening of Partnerships 4. Minimization of wastage 5. Reduced duplication of efforts	1. Existing government policy, 2. partnership and existing structures

Challenges, impact and limiting factors

CHALLENGES	IMPACT(S)	LIMITING FACTORS
Lack of dedicated budget for risk communication activities.	Late and slow response	Slow and in adequate financial procedure
Insufficient human resources (communication officers)	1. Low coverage of target audience 2. Poor outcome	Inadequate budget for recruitment and replacement of workers 1. Insufficient number of health educators 2. Unwillingness of some health educators to visit the communities 3. Poor accommodation for the health education officers in some communities
Lack of sustainability of health promotion activities	Low awareness among communities	Funding and planning
No dedicated budget line for RVF risk	Poor /inappropriate implementation of	Other competing demands for health fund

communication activities	communication activities	
Insufficient resources to translate IECs at state levels into local languages	Poor implementation and outcome	Low prioritization of risk communication activities
Low community participation (Religious and cultural belief)	Poor outcome	1. Religious belief and cultural practices 2. Illiteracy

5.7 Laboratory

This function identified prompt reception of samples and analysis as one of their best practice during the outbreak and this attributed to provision of consumables, reagents and dedicated personnel. Other resources identified are:

- Joint outbreak investigation team b/w FMAR & FMOH
- Existing SOPs and laboratory request form.
- Existing transportation and sample collection SOPs
- Coordination SoPs between FMOH & FMAR, exist and there are regular meetings and sharing of training actvities of Rift valley fever for the FMOH-Zoonotic unit by CVRL-RVF unit.
- Coordination between the NPHL and CVRL rudimentary.
- There is an investigatory team by both ministries and support by WHO & FAO during epidemics-Epizoonotic control FMAR & FMOH
- Samples collection and transportation protocols exist.

The few challenges identified included lack of standardized lab request form, SOPS for sample collection and transportation not standardized

Best Practice, Impact and enabling factors

BEST PRACTICES	IMPACT(S)	ENABLING FACTORS
Prompt reception of sample and analysis.	Timely management of patients.	Availability of consumables, reagents and dedicated personnel Availability of consumables, reagents and dedicated personnel

Strict Adherence to SOP for sample collection, transportation and analysis.	Quality samples and quality results.	1. Availability of SOPs for all processes. 2. Prior training conducted by NCDC and other partners. 3. Pre-positioning of Lab consumables and reagents
Sample referral to National Reference lab for further Analysis	Detailed characterization and external quality assurance.	Existing protocol and SOP provided by NPHL for sample referral Availability of transport media

Challenges, impact and limiting factors

CHALLENGES	IMPACT(S)	LIMITING FACTORS
Lack of laboratory request form	Incomplete data	There is no overall unified request form all over Sudan Information lacking due to staff motivational issues in epidemic foci
ELISA screening limitations at NPHL	Initial & follow up Screening is RT-PCR based	Lack of updated ELISA equipment and kits.
Testing is centralized	Delay in reporting to surveillance Overload at the NPHL	Readiness of the regional and strengthening
LMIS	Lack of coordination between labs	No unified system of reporting
No coordination between Animal and Human labs	Delays and working in silos	Lack of guidelines and joint committee

5.8 Integrated Vector management & Infection Prevention and control

Several existing capacities and resources such as National Integrated vector Management strategy, National Vector control plan, trained staff on entomology and vector control. Additionally the federal support with the vector control tools and equipment, production of weekly bulletin and one health coordination meetings at state level, supervisory missions by all relevant sectors to identify risk factor and vulnerable locations, regular vector surveillance and animal housing, surveillance and risk mitigation and prepositioning of supplies.

Best Practice, Impact and enabling factors

BEST PRACTICES	IMPACT(S)	ENABLING FACTORS
Community engagement	Indoor breeding control Disposal of water holding containers	Huge loss of animals Training of volunteers from the community
Coordination	Effective response activities	MoUs between MOH & MoAR

Challenges, impact and limiting factors

CHALLENGES	IMPACT(S)	LIMITING FACTORS
Staff turn over	Lack of follow up for vector control interventions Poor quality of implemented vector control measures in some risk states.	Lack of incentives for staff retention
Lack of local resources	Weak preparedness actions	Political instability and state priorities.

Lack of adequate PPEs,	Infections among persons dealing with infected animal.	Inadequate awareness
Limited isolation capacity	Nosocomial infections VHF affecting medical staff	No dedicated space for the VHF isolation Isolation facilities lacking the basic IPC structure (medical waste management, incineration, … etc)

8. NEXT STEPS

The following will be carried out:

1. Organize stakeholders meeting to discuss findings of the AAR.

2. Start implementation of all activities identified per each pillar

Coordination:

1. Mobilize resource to conduct training on the following topic: Joint RRT training, IVM, integrated surveillance system between (MoH and MoAR)
2. Engage related sectors like environment, agriculture, defense, irrigation and investment with clear legislation in the ONE health platform for joint planning and response
3. Prioritize zoonotic diseases of greatest concern to garner support and collaboration
4. Conduct AAR within 3 months after the end of the outbreak
5. Organize Joint risk assessment for human and animal health

Surveillance:

1. Improve staff capacities at state and locality levels and adequate distribution of surveillance tools
2. Increase the awareness among animal owners towards RVF to ensure timely reporting
3. Activation of Community based surveillance at all remaining states and localities

Response and Case management:

1. Develop a plan of retention including job number, motivational intervention and capacity building

2. Develop memorandum of understanding indicate health staff pathway
3. Availing of the health services at the locality
4. Provision of mobile facilities able reach the difficult destinations
5. Fund raising and fund allocation for preparedness and response in the area of the case management.
6. Improvement of health facilities capacity at the localities. (rehabilitation, furnishing, equipping and staffing)

Risk communication:

1. Develop budgeted RV risk communication preparedness and response plan
2. Translate IEC materials to local language
3. Development of behavioral change strategy
4. Engagement of local communities in the preparedness and response

Laboratory

1. Frequent coordinated meetings between Zoonotic units at both ministries and laboratories
2. Financial resource mobilization
3. RVF entomologic and ecologic modelling
4. ISO 17025 certification and accreditation
6. Institutional MOUs between CVRL & NPHL including exchange of experience

Integrated Vector management & IPC:

1. Develop and implement retention policy for Staff
2. Allocate sufficient budget for procurement and preposition of adequate WASH supplies.
3. Animal movement control during outbreaks

9. CONCLUSIONS

The outbreak of Rift Valley Fever in Sudan (Red Sea State and River Nile State) began in Epi week 37, 2019 and controlled in Epi week 4, 2020. Following the outbreak, FMoH, MoAR, WHO and partners conducted a National AAR which provided an opportunity for those involved in the response to identify strengths and weaknesses and identified ways to improve the preparedness and response in future outbreaks.

Annexes:

1. ***Annex 1: Post-AAR action plan***

Activities	Focal Person	Deadline	Impact	Difficulty	Priority	Pillar
Mobilize resource to conduct training on the following topic :Joint RRT training , IVC, Joint surveillance	Dr Hanadi Awad (FMoH) WHO FAO	October 2020	+++	++	High	Coordination
Engage related sectors like environment, agriculture, defense, irrigation and investment with clear legislation in the ONE health platform	Dr Hanadi Awad (FMoH) WHO FAO	September 2020	+++	+	High	Coordination
Establish one health platform for joint planning and response to zoonotic diseases	Dr Hanadi Awad (FMoH) WHO FAO	September 2020	+++	+	High	Coordination
Prioritize zoonotic diseases of greatest concern to garner support and collaboration	Dr Hanadi Awad (FMoH) WHO FAO	December 2020	+++	++	High	Coordination
Conduct AAR within 3 months after the end of the	Dr Hanadi Awad (FMoH)	ASAP after the outbreak	+++	+	High	Coordination

outbreak	FAO WHO					
Organize Joint risk assessment for human and animal health	Dr Hanadi Awad (FMoH) WHO FAO	February 2021	+++	+	High	Coordination
Improve staff capacities at state and locality levels and adequate distribution of surveillance tools	FMoH (Head of Surveillance) WHO	October 2020	+++	+	High	Surveillance
Increase the awareness among animal owners towards RVF	FMoH (Head of Surveillance) WHO	October 2020	++++	++	High	Surveillance
Activation of Community based surveillance at all remaining states and localities	FMoH (Head of Surveillance) WHO	October 2020	+++	+	High	Surveillance
Develop a plan of retention including job number, motivational intervention	FMoH – EHA – Response unit WHO	December 2020	++++	++	High	Response & Case management
Develop memorandum of understanding indicate	FMoH – EHA – Response unit	December 2020	+++	+	High	Response & Case management

health staff pathway	WHO					
Availing of the health services at the locality	FMoH – EHA – Response unit WHO	October 2020	++++	++	High	Response & Case management
Provision movement facilities able reach the difficult destinations	FMoH – EHA – Response unit WHO	November 2020	+++	+	High	Response & Case management
Fund raising and fund allocation for preparedness and response	FMoH – EHA – Response unit WHO	ASAP for the preparedness actions	++++	++	High	Response & Case management
Improvement of health facilities capacity at the localities. (rehabilitation, furnishing , equipping and staffing)	FMoH – EHA – Response unit WHO UNICEF	March 2021	++++	+	High	Response & Case management
Develop budgeted RV risk communication preparedness and response plan	FMoH – Health promotion WHO UNICEF	October 2020	+++	+	High	Risk communication
Translate IEC materials to local language	FMoH – Health promotion WHO	October 2020	+++	+	High	Risk communication

	UNICEF					
Development of behavioral change strategy	FMoH – Health promotion WHO UNICEF	December 2020	++++	++	High	Risk communication
Frequent coordinated meetings between Zoonotic units at both ministries and laboratories	NPHL + WHO	September 2020	++++	+	High	Laboratory
Financial resource mobilization	NPHL + WHO	ASAP	+++	+	High	Laboratory
RVF entomologic and ecologic modelling	NPHL + WHO	ASAP	+++	++	High	Laboratory
ISO 17025 certification and accreditation	NPHL + WHO	ASAP	++	+	High	Laboratory
Institutional MOUs between CVRL & NPHL	NPHL + WHO	December 2020	++++	++	High	Laboratory
Frequent coordinated meetings between Zoonotic units at both ministries and laboratories	NPHL + WHO	ASAP	+++	+	High	Laboratory
Develop and implement retention policy for Staff	FMoH & MoAR IVM & IPC WHO UNICEF	February 2021	++	+	High	Integrated Vector management & IPC

	FAO					
Allocate sufficient budget for procurement and Preposition of adequate WASH supplies	FMoH & MoAR IVM & IPC WHO UNICEF FAO	November 2020	+++	+	High	Integrated Vector management & IPC
Animal movement control during outbreaks	FMoH & MoAR IVM & IPC WHO UNICEF FAO	October 2020	+++	++	High	Integrated Vector management & IPC

Annex 2: Agenda

RVF – After Action Review

Sudan - Khartoum

September 2020

Date: 07/September/2020 **Location: Sudan National Medical Supply Fund**

TIME	SESSION	LEAD
08:30-09:00	Registration and administrative instructions	Admin
09:00-09.15	Introduction of the participants	Dr Babiker Dr Annette
09:15-09:25	After-Action Review methodology	Dr Annette
09:25-09:45	RVF outbreak Report	Dr Babiker
09:45-10 :15	**Session 1 - STEP 1: What was in place before the response?** *Instructions: in your function, note down all the capacities that were in place prior to the event to support a health emergency response.*	Facilitated By the joint WHO and FMoH AAR follow up team
10:15-10:30	Coffee break	Admin
10:30-11 :00	**Session 2 STEP 2: What happened during the response?** *Instructions: build a timeline of what actually happened during the event under review by mapping out key milestones of the emergency and to order them in chronologically.*	Facilitated By the joint WHO and FMoH AAR follow up team
11 :00-11 :30	**Session 3 STEP 3: What went well? What went less well? Why?** *Instructions: list all challenges and for each, identify the impact/s and limiting factors that led to that challenge.*	Facilitated By the joint WHO and FMoH AAR follow up team

11 :30-12 :00	**Session 4 STEP 4: What can we do to improve for next time:** *Instruction:* ***Step 4.1:*** *Develop key activities to overcome challenges and institutionalize best practices.* *Make sure that all activities are practical and realistic* *Several activities might be necessary to address a single challenge or to build on a best practice* *Not all best practices or challenges need an activity.* ***Step 4.2:*** *Indicate the number of dots allocated for the level of impact and the level of difficulty of implementation for each activity*	Facilitated By the joint WHO and FMoH AAR follow up team
12 :00-12 :30	**Session 5: STEP 5: The Way Forward** Instruction: Indicate the number of dots allocated for the priority of each activity Based on a consensual group discussion, fill out this table for the 2 activities which have been prioritized (by obtaining the highest number of dots in the column "priority")	Facilitated By the joint WHO and FMoH AAR follow up team
12:30-13:30	Lunch	Admin
Plenary discussion: *presented by the groups facilitators and led by Minster of health, monster of animal resources, DG of emergency and WHO emergency Team lead*		
13:30-14 :00	Coordination– 15 minutes presentation and 15 minutes discussion	Dr Kias – Health cluster coordinator
14 :00-14 :30	Preparedness and supply – 15 minutes presentation and 15 minutes discussion	Dr Tahani Amin
14 :30-15 :00	Case management and Response – 15 minutes presentation and 15 minutes discussion	Dr Nada Bakri

15:00-15:15	Coffee break	Admin
15:15-15:45	Surveillance – 15 minutes presentation and 15 minutes discussion	Dr. MUNTASIR MOHAMMED OSMAN
15:45-16:15	Laboratory – 15 minutes presentation and 15 minutes discussion	Dr. SHAHINAZ ELBADRI
16 :15-16 :45	IPC, Environmental Health AND ENVIRONMENTAL HEALTH	Dr. ATIKA SWAR
16 :45-17 :15	Risk Communication	Dr. SARA ALMALIK
17:15-17:45	Response phase-out and closing, Recovery and Health system strengthening	Dr Hanadi Awad
17:45-18:00	**Closure and final remarks:** FMoH , MoAR and WHO **5 minutes** each	AAR Lead

Annex 3: List of participants

AAR- participants

No	SPECIFIC Designation	Name	Tel	E-mail
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60.		ISRA		
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Annex 4: Photos gallery

Expert

Risk communication

Federal Ministry of Health
General Directorate of Emergency and Epidemics Control
Review of Rift Valley Fever Outbreak
From 25th of September 2019 up to 25 January 2020
RVF AAR
7/9/2020
Khartoum ,Sudan

AFTER
ACTION
REVIEW
Minster of Health
Dr Babiker Al Magboul
Dr Annette HEINZELMANN